

ABSTRACT BOOK



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INCLUSIVENESS AS A FUTURE CHALLENGE

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9 Decolonial languages: multilingualistic and epistemological inputs

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Decoloniality Multilingualism Epistemology

SHORT ABSTRACT

Considering the dynamics of the social fabric as a space of incessant cultural production (CANDAU, 2008), especially in the multifaceted, plurilingual, interconnected and knowledgeable modern times, arising, particularly, from technological advances, the decolonial movement is absolutely central when it comes to questioning the *status quo* and the construction of new knowledge. To this end, it is necessary that cultural artifacts, in particular languages, question inequalities, silencing, homogenization, monoculture, oppression and injustices caused by cultural color blindness (CANDAU, 2008), as well as by colonial epistemology (WALSH, 2009). From a decolonial perspective, the debate about how knowledge is nowadays produced is paramount, in addition to the consequences of this movement in relation to differences and similarities, dehumanization and subordination of knowledge and cultures (WALSH, 2009), normally, rooted in Eurocentrism. Based on the plurilingual context of modernity, this symposium aims to join researches that discuss and reflect on how languages can be inputs to: a) enable dialogues between knowledge and behaviors built on the basis of distinct cultures; b) denaturalize epistemic colonial marks and prejudices that permeate society, in particular, in the school environment; c) prospect contexts “in which differences are the central axis of democracy and the development of subjects capable of establishing equitable and fairer relationships” (MEGALE; LIBERALI, 2021, p. 19); d) give new meaning to woven local experiences globally over time; e) promote practices guided by linguistic and cultural multidiversity, as well as the production of knowledge and new languages, anchored in multidiverse cultural socio-historical aspects to somehow prospect social transformations.

References: CANDAU, V. Multiculturalismo e educação: desafios para a prática pedagógica. In: MOREIRA, A.; CANDAU, V. Multiculturalismo: diferenças culturais e práticas pedagógicas. Petrópolis: Vozes, 2008. MEGALE, A.H.; LIBERALI, F.C. Como implementar a multiculturalidade. In: MEGALE, A.H. (org.). Educação Bilíngue: como fazer? 1. ed. São Paulo: Fundação Santillana, 2021. WALSH, C. Interculturalidade Crítica e Pedagogia Decolonial: in-surgir, re-existir e re-viver. In: CANDAU, V. M. (Org.) Educação Intercultural na América Latina: entre concepções, tensões e propostas. Rio de Janeiro: Letras, 2009.

19 Transformative agency in Change Laboratories across a school

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Change Laboratory Agency Double Stimulation

SHORT ABSTRACT

The practical aim of this study was to foster meaningful change across a range of aspects identified by a school. The theoretical aim was to explore how recent CHAT concepts relating to transformative agency by double stimulation (TADS), warping, and ascent from the abstract to the concrete help both to facilitate change, and to understand the dynamics of agency. Five Change Laboratories were conducted, two focusing on Y11 and Y12 pathways (High School Certificate and International Baccalaureate), one on Y9 as a ‘holding’ space in education in need of purposeful reinvigoration, one on co-curricular activities, and one on the relationship between classroom teachers and learning support from prep to Y6. The study found distinctive conflicts of motives in each case, and that these were resolved by participating teachers and school leaders by developing auxiliary motives, and actioning these by searching for and using diverse ‘kedge anchors’ (tools for breaking away). Germ cell models for each Change Lab group will be presented, leading to reflections on how this work has supported change across multiple aspects of the school. The study contributes knowledge on how agency can be pedagogically facilitated.

EXTENDED SUMMARY

Background

This study aimed to facilitate meaningful change in diverse aspects of a secondary school in Sydney, Australia. The purpose was to close the gap between what is, and what ought to be – a longstanding intention of activist CHAT research in relation to work and learning (Hopwood, 2022; Hopwood & Sannino 2023; Stetsenko, 2024).

Aims

The school established five groups of teachers and school leaders, each with a distinct aim:

To revitalise Y9, recognising issues in student disengagement

To promote co-curricular activity and enhance the quality of activities students participate in;

To support effective approaches to learning and wellbeing in the International Baccalaureate (IB) Diploma program (Y11-12), recognising students struggling with academic pressure;

To support effective student approaches to learning and wellbeing in the High School Certificate (HSC, a parallel program in Y11-12), recognising false perceptions of this being academically ‘lower’ and the need to help students lift their independence as learners;

To strengthen the interface between classroom teachers and learning support professionals in the junior campus (prep to Y6) to better meet the changing needs of students requiring additional support.

The study also aimed to explore recent theoretical developments in CHAT in order to understand the dynamics of agency, specifically how it can be pedagogically facilitated.

Double stimulation is a principle of transformative agency (Sannino 2015). Sannino's (2015, 2022) model of TADS places conflicts of motives at the heart of theorising agency; auxiliary stimuli are linked to the development of new motives. Sannino uses the metaphor of kedge anchors to explore these second stimuli. Kedge anchors enable people to move when a vessel is stuck: pulling on it is a process called warping (Sannino 2022). Second stimuli understood as kedge anchors are instrumental in the elaboration of new meaning which may stabilise and support transformative actions in situations for which there are no known solutions (Sannino 2022 p. 12). The analysis identified kedge anchors used by each group of teachers, and the throwing, taking-over and breaking-out actions they took in the changes they accomplished.

Engeström (2020) understands the germ cell as the starting point and core of a concept which becomes increasingly complex as it is enacted (through a process of ascent from the abstract to the concrete). He outlines a model linked to TADS in which an internally contradictory germ cell is experienced as a conflict of motives, and then transgressed and resolved through a new motive and linked concrete actions. Agency and change were modelled in the present study using this same structure, highlighting distinctive aspects of each group's work, but also the common theoretical underpinnings of the process.

Methods

Five Change Laboratories (Engeström, 2007; Virkkunen & Newnham, 2013) were conducted, meeting every 3 months for a 2-year period. Transcripts of the workshops were analysed line by line, identifying expansive learning actions as a first step to ensure the process of formative intervention was unfolding as expected. A second analytical layer drew on TADS, identifying conflicts of motives and the kedge anchors used in warping to break away. The final layer was more holistic, developing a germ cell model for each Change Lab (eg. Figure 1).

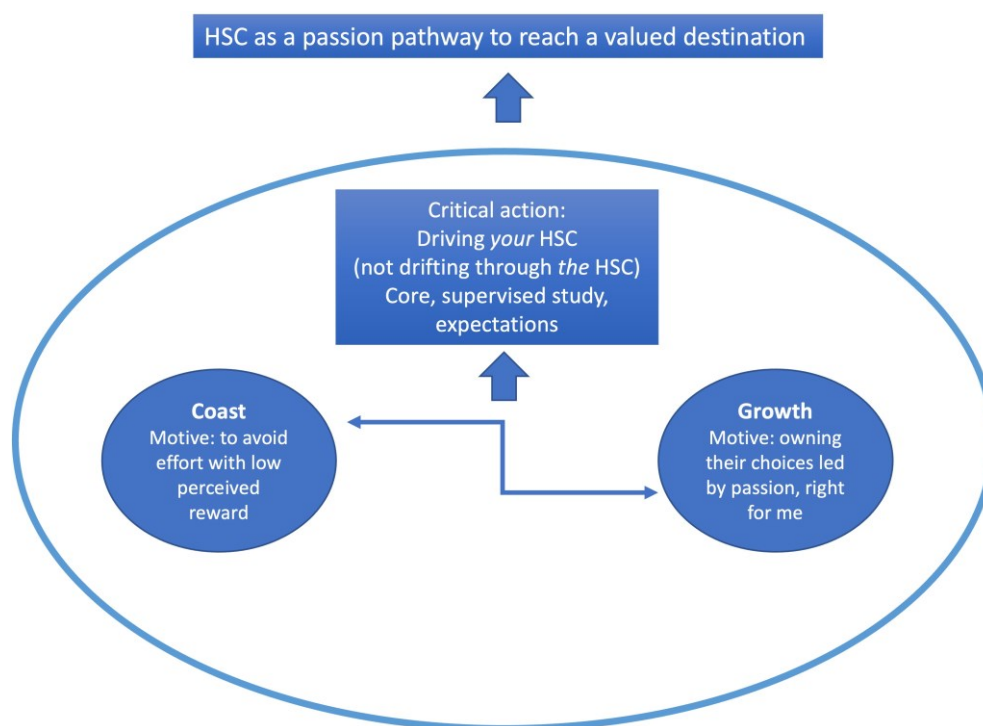


Figure 1 - Example of germ cell model

Results

Each group accomplished significant change. Year 9 was re-imagined as part of a new holistic framework for social-emotional learning across the whole school, and new activities implemented to give students experiences of stepping out of their comfort zone, and out of their own worlds to engage with issues outside of school. A culture change was initiated in the HSC, focused on uplifting expectations of students, and supporting them to exploit the freedom afforded to them in this pathway by driving their own course rather than passively drifting through a standard course. For the IB, measures were implemented to support student wellbeing by challenging norms around perfectionism. Co-curricular activities were redeveloped through a new notion of genuine participation and significant changes to the division of labour were made to resource activities, while also folding more diverse participation into systems for reward and recognition. Classroom teachers and learning support professionals designed a new system to produce agile, timely and consistent communication so that they could better respond to changing students' needs.

Conclusions

TADS, through expanded notions incorporating warping and germ cells, contributed to driving change, but also help to identify deeper commonalities in processes that otherwise appear very different. This advances our understanding of how agency can be pedagogically facilitated (Engeström et al 2022).

Interaction

Examples of kedge anchors and germ cell models from each Change Lab will be given to participants divided into five groups. They will be invited to have brief discussions focused on that particular example, and to share insights and questions with the presenter and wider audience.

References: Engeström, Y. (2007). Putting Vygotsky to work: the Change Laboratory as an application of double stimulation. In H. Daniels, M. Cole, & J. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 363-382). Cambridge University Press. Engeström, Y. (2020). Ascending from the abstract to the concrete as a principle of expansive learning. *Psychological Science and Education*, 25(5), 31-43. <https://doi.org/10.17759/pse.2020250503> Engeström, Y., Nuttall, J., & Hopwood, N. (2022). Transformative agency by double stimulation: Advances in theory and methodology. *Pedagogy, Culture & Society*, 30(1), 1-7. <https://doi.org/10.1080/14681366.2020.1805499> Hopwood, N. (2022). Agency in cultural-historical activity theory: strengthening commitment to social transformation. *Mind, Culture, and Activity*. <https://doi.org/10.1080/10749039.2022.2092151> Hopwood, N., & Sannino, A. (2023). Motives, mediation and motion: Towards an inherently learning- and development-orientated perspective on agency. In N. Hopwood & A. Sannino (Eds.), *Agency and transformation: motives, mediation and motion* (pp. 1-34). Cambridge University Press. Sannino, A. (2015). The principle of double stimulation: a path to volitional action. *Learning, Culture and Social Interaction*, 6, 1–15. <https://doi.org/10.1016/j.lcsi.2015.01.001> Sannino, A. (2022). Transformative agency as warping: How collectives accomplish change amid uncertainty. *Pedagogy, Culture & Society*, 30(1), 9-33. <https://doi.org/10.1080/14681366.2020.1805493> Stetsenko, A. (2024). Reclaiming the tools of the past for today's struggles: Radicalizing Vygotsky, via Marx, in dialogue with Audre Lorde. In A. Levant, K. Marukami, & M. McSweeney (Eds.), *Activity theory: An introduction*. *ibidem*. Virkkunen, J., & Newnham, S. (2013). *The Change Laboratory: A tool for collaborative development of work and education*. Sense.

22 Cultural-historical understandings of agency: Key questions to secure alternative futures

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Presentation: Symposium (90 minutes)

Theme: Imagining future worlds

Keywords: Agency Future Transformation

SHORT ABSTRACT

Understanding and promoting agency are crucial to addressing urgent social problems of our time. Through agency, we can take transformative steps toward the future that ought to be. This symposium brings together authors of a recent edited book to explore how contemporary conceptualizations from cultural- historical activity theory can inform research and practice that foster positive change. Presenters take inspiration from the original work of Vygotsky, subsequent generations of CHAT scholarship, and other theoretical domains, including ideas from the Global South. This enables us to understand agency in ways that recognize the social and cultural aspects of agency without losing sight of individuals' contributions to changing their own lives and the lives of others. In this symposium, presenters will identify key provocations and questions that chart edges of our current understandings, and point to areas that need attention if CHAT is to be strengthened in its uses in the struggle over alternative futures. Participants will interact in small groups with presenters in a revolving round table format, maximising time for discussion, and inviting attendees into conversation rather than presenting finish ideas or studies.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Overview

This symposium involves presenters who worked on 10 chapters in a book exploring cultural-historical notions of agency. To fit the submission format, these are grouped into three (two groups focused on

three projects/chapters and one group of four). This abstract describes the symposium approach overall. Abstracts for Papers 2-4 outline the foci of each group.

The symposium chair (Hopwood) will provide a brief introduction to the key topic and explain the format (5 mins). Then, participants will spend 20 minutes with each group in turn, leaving the final 20 minutes for brief comments by the discussant before opening to all attendees. In each 20 minute group session, presenters will spend 2 minutes each presenting a key question or issue for future theoretical development (6-8 minutes), giving 12-14 minutes for the audience to discuss and contribute their own thoughts. In this way, all attendees will hear from all presenters, but by splitting the audience into groups, this maximises time for collegial interaction.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

This summary provides details of the symposium overall. Extended summaries for papers 2-4 provide additional details on each of the presenter sub-groups.

Background

Studies of agency are crucial if we are to grapple with pressing societal and environmental problems – not merely responding to them but collectively striving towards alternative futures shaped by the common good (Hopwood & Sannino, 2023; Sannino, 2022; Stetsenko, 2024). Focussing on agency forms part of a critique and corrective in research and theory, disrupting notions that assume neutrality while privileging dominant agendas (Cole et al., 2016). Nardi notes ‘a good deal of theorizing in the last decades has undercut our ability to argue for and promote social justice and freedom. If we do not make commitments, we will not see results’ (2017, p. 2). The urgency of agency is intimately connected with the idea of scholarship as ethically responsive and responsible (Stetsenko, 2017).

This symposium brings together authors of a recent edited book to explore how contemporary conceptualizations from cultural-historical activity theory can inform research and practice that foster positive change. Presenters take inspiration from of Vygotsky, contemporary cultural-historical scholarship, and other theoretical domains, including ideas from the Global South. This enables us to understand agency in ways that recognize the social and cultural aspects of agency without losing sight of individuals’ contributions to changing their own lives and the lives of others.

Aims

This symposium aims to foster crucial, critical and innovative dialogue around where cultural-historical theorisations of agency need to go next in order to strengthen their use in the struggle over alternative futures: how can our concepts equip us better to secure the futures that ought to be, instead of those that appear (falsely) given?

The symposium invites 10 authors to address these questions from their unique standpoints, grounded in particular philosophical and/or empirical work.

Methods

The presentations draw on a range of methods. Some are philosophical/theoretical in nature, others empirical including formative interventions such as Change Laboratories (Engeström, 2007; Virkkunen & Newnham, 2013) and recently developed sibling approaches such as the Indigenous Learning Lab (Bal & Bird Bear 2023).

Results and Conclusions

This is a deliberately open symposium, inviting attendees into a dialogue around future agendas and conceptual frontiers. No firm conclusions are determined in advance by the presenters. A shape for directions of cultural-historical work on agency and its pedagogical facilitation will hopefully emerge through the symposium.

How interaction with participants is planned

Presenters will form three presenter groups as follows:

Group A: Hopwood, Stetsenko, Edwards

Group B: Sannino, Kerosuo, Hilppö (co-presenting with Rajala), Rantavuori (co-presenting with Ruutu)

Group C: Bal, Rai, Thompson

This timeline shows the plan for extensive participant interaction. The audience will divide into three, visiting each group in a different order so that by the end, they have all spent 20 minutes with each presenter group.

0-5 mins Introduction by Chair (Hopwood)

5-25 mins Small Group rotation 1 (attendees split into three groups, visiting presenter groups A, B, C)

25-45 mins Small Group rotation 2 (attendees remain in their three groups, visiting presenter groups B, C, A)

45-65 mins Small Group rotation 3 (attendees remain in their three groups, visiting presenter groups C, A, B)

65-75 mins Discussant comments (Sannino)

75-90 mins General discussion

In each 20 minute group session, the three or four presenters will spend 2 minutes each presenting a key question or issue for future theoretical development (6-8 minutes), giving 12-14 minutes for the audience to discuss and contribute their own thoughts.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Presenter Group A

Presenter Group A comprises Hopwood, Stetsenko and Edwards. They will raise questions around the development of cultural-historical theorisations of agency as follows:

Hopwood: How can we understand how the direction towards which agentic actions moves us can be determined to move us closer to the future that ought to be? How can the reach of those actions towards desired alternatives be extended?

Stetsenko: What does it mean for our role in struggles over the future if we recognise that human beings don't react to the world, but always co-create it with others in a seamless process of mutual self- and world-realisation?

Edwards: How can we re-imagine pedagogy on a coherent relational basis, in order to strengthen future orientation? How can we grasp the magnitude of shifts this implies for schools as institutions embedded within established cultural norms?

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Group A: Agency and how we reach the future

Presenter Group A comprises Hopwood, Stetsenko and Edwards. They raise questions around the development of cultural-historical theorisations of agency as follows:

Nick Hopwood

How can we understand how the direction towards which agentic actions moves us can be determined to move us closer to the future that ought to be? How can the reach of those actions towards desired alternatives be extended?

If we are to use our theories of agency dangerously, in the struggle for a better world (Stetsenko, 2020), then we must not take for granted from and towards where the actions that we help to make possible move us, and we must focus our attention on how to extend the reach of those actions, remembering that reach will simultaneously be outward into the world, and inward, changing all involved. Agency cannot be directionless. It is a matter of intended movement towards a desired future, however unviable it may seem and however unknowable the means to realise it may be (Hopwood, 2023). As such, agency is inherently and intimately connected with motives, with responsibility to oneself and others.

Agency is also a question of how, and how much, actions matter (Hopwood, 2023). Our actions may simultaneously reach profound depth in our own lives while sliding through hairline cracks in wider social structures, leaving them (for now) intact. But who can say that those actions are not of some wider, future consequence that is yet to unfold? In seeking to extend the reach of actions, cultural-historical theories equip us with the extraordinary potential of mediation, the accumulation of humanity's creations, and the infinite possibility to develop new mediational means and embed these in historically new formations of activity.

Anna Stetsenko

What does it mean for our role in struggles over the future if we recognise that human beings don't react to the world, but always co-create it with others in a seamless process of mutual self- and world-realisation?

This provocation is based on the notion of radical-transformative agency from the transformative activist stance (Stetsenko 2017). Specifically, a notion that agency grasps the very fundamental yet so far under-theorized idea about human beings never merely reacting to the world and, instead, always co-creating it together with others – in an unbreakable and continuous, seamless process of a *mutual* self- and world-realization. This breaks with received notions about how we develop and learn. In this approach, reality is not something that is *given* to people; instead, reality always needs to be *taken up* by us as a task to be grasped and dealt with, through the lens of particular motives and sought-after futures (Stetsenko, 2023). Placing the process of taking up the tasks of reality (and, thus, taking reality as a task) at the center overcomes the dichotomy of objectivity versus subjectivity. This opens up ways to address freedom and solidarity as well as to invite and integrate perspectives of those who have been excluded from knowledge production, strengthening an activist and critical CHAT.

Anne Edwards

How can we re-imagine pedagogy on a coherent relational basis, in order to strengthen future orientation? How can we grasp the magnitude of shifts this implies for schools as institutions embedded within established cultural norms?

Vygotsky's educational agenda was radical so that people might together construct a better world, to be future-making. The need to construct a better world persists, yet there are still few examples of pedagogies with this aim. One reason for this gap is a series of socially constructed dichotomies in accounts of pedagogy, including cognition/emotion, acquisition/participation, abstract/practical. I

explore how pedagogy might overcome these tensions, emphasising the agency of both students and teachers, it is avowedly future-oriented, relishing engagement with problems (Edwards, 2023). For this to happen teaching is more than performative curriculum delivery, teachers too need the leeway, often denied them, necessary for the responsive agentic teaching that can encourage future-making. Key concepts in this view of a relational future-oriented pedagogy include Hedegaard's notion of motive orientations which brings together affect and cognition within understandings of personal and institutional priorities (Hedegaard, 2014) and Edwards' work on relational expertise, common knowledge and relational agency (e.g. Edwards, 2017). These cultural-historical concepts offer a coherent relational pedagogy that will be evidenced from reanalyses of current and past studies; but they also recognise the magnitude of the shift for schools as institutions embedded within established cultural norms. The presenter will outline the future challenges of connecting a relational pedagogy to combatting wider societal concerns, where mutual responsibility is key. These concerns include the alienation of young people; the need for joint action to counter climate change; and efforts to stem adolescent mental health difficulties. In short, the potential offered by such a future oriented pedagogy will be focused on joint work towards the common good.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Presenter Group B

Presenter Group B comprises Sannino, Kerosuo, Hilppö (co-presenting with Rajala), Rantavuori (co-presenting with Ruutu). They will raise questions around the development of cultural-historical theorisations of agency as follows:

Sannino: How can we develop a power-sensitive concept of agency by drawing on the fourth generation of CHAT? How can this help in the realisation of utopias?

Kerosuo & Jokinen: How can experiences of promoting agency in frontline homelessness work lead us to stronger means to intervene and foster agency in similar problems requiring radically different approaches?

Hilppö & Rajala: What role might anti-confrontational civic projects play in enabling young people to reshape their own futures, and the futures of others?

Rantavuori & Ruutu (with Engeström & Tapola-Haapala): How can we better understand and facilitate adolescents' future-making? What are the next steps in theorising the move from mental future orientation to practical and material future-making?

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Group B title: Agency, power, radical difference and future-making

Presenter Group B comprises Sannino, Kerosuo, Hilppö & Rajala, Rantavuori & Ruutu. They will raise questions around the development of cultural-historical theorisations of agency as follows:

Annalisa Sannino

How can we develop a power-sensitive concept of agency by drawing on the fourth generation of CHAT? How can this help in the realisation of utopias?

A significant contribution to discussions of agency and change from the perspective of cultural-historical activity theory (CHAT) consists of findings on transformative agency by double stimulation (Sannino, 2022, 2023). This perspective holds potential to contribute to today's discussions on acute global challenges that in so many ways are challenges of collective agency for change. TADS is a

process by which individuals and collectives accomplish change amidst uncertainty by intentionally breaking out of paralyzing conflicts of motives (also referred to as first stimuli) with the help of systematically implemented mediating means (also called second stimuli). I argue that TADS is intrinsically a power-sensitive conceptualization of agency. In contrast with the widespread conceptions of power understood as an oppressive force, this perspective is sensitive to understanding power also as a productive emancipatory force that, despite often being hidden, unrecognized and suppressed, is nevertheless generated in everyday struggles. In dialogue with fourth generation CHAT (Engeström & Sannino, 2021) I suggest that we need to better understand how the power of hybrid coalitions becomes generative, how this can be supported. Key to this is understanding the role of conflicts of motives and the mediating function of symbolic and material artefacts.

Hannele Kerosuo (co-authored with Esa Jokinen)

How can experiences of promoting agency in frontline homelessness work lead us to stronger means to intervene and foster agency in similar problems requiring radically different approaches?

The increasing diversity of clients, fragmentation of services, and lack of coordinated support in sectoral services challenge frontline workers and require the creation of new ideas and future-oriented innovations in homelessness work. Hence, without the workers' active movement of innovations to both sustain and expand homelessness work, there is a risk of encapsulation and the consequently diminished impact of the innovations. By fostering transformative agency, practitioners can be supported to consider innovations as mediational means in response to paralyzing conflicts of motives they might experience in their work. Five workshops were conducted with frontline workers, and analysed using Sannino's (2022) TADS approach (Kerosuo & Jokinen, 2023). Our key argument is that we need to better understand the dynamic complexity of social innovations by examining them as purposeful wholes – that is, umbrella innovations composed of sub-innovations and standalone innovations.

Jaakko Hippö & Antti Rajala

What role might anti-confrontational civic projects play in enabling young people to reshape their own futures, and the futures of others?

Our interest is in what we call civic projects, child- and youth-initiated or -directed activities aimed at addressing issues such as climate change, poverty and children in long-term hospital care. We argue that civic projects, which blend conventional forms of civic engagement with new forms, are important sites for their agency. We studied two projects, P365 (producing teddy bears to support children battling cancer or victims of other adverse events), and Climate Warriors (an activist grouping in a Finnish Secondary school) (Hippö & Rajala, 2023). We understand these as sites for children's and youth's responsible agency, their ethical and political aspirations. Our provocation is this: Although we believe that protesting, demonstrations and more radical forms of agency are needed to build socially and ecologically sustainable societies, co-operative and explicitly anti-confrontational strategies are also important in these efforts for change and can yield impact.

Pauliina Rantavuori & Piia Ruutu (co-authored with Yrjö Engeström & Maria Tapola-Haapala)

How can we better understand and facilitate adolescents' future-making? What are the next steps in theorising the move from mental future orientation to practical and material future-making?

Much of the sociological research on young people's future orientations builds static typologies of different orientations. In both sociology and psychology, planning versus not planning and future

versus present have become central dichotomies shaping research on young people's temporal orientations. This presentation builds on research aimed at transcending such dichotomies by examining transformative agency as future-making among adolescents. We conducted a Change Lab with a group of eighth-grade students in Helsinki, Finland, aimed at supporting the students to work on their experienced conflicts of motives and to construct and implement projects they found significant for their own lives and futures (Engeström et al., 2023). Our key provocation is that it is time to make the difficult but necessary shift from studying young people's future orientations as private mental phenomena to fostering and analysing future-making as material public actions that generate use value and have impact beyond the individual.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Presenter Group C

Presenter Group B comprises Bal, Rai and Thompson. They will raise questions around the development of cultural-historical theorisations of agency as follows:

Bal & Bird Bear: How can new approaches to fostering the pedagogical facilitation of agency counter the ongoing effects of colonialism? What lessons does the Indigenous Learning Lab offer for de-colonising efforts to combat racial injustice in schooling?

Rai: How can we tap into vexed questions of professional practice to reveal and promote the agency of teachers? How can confronting crisis, notions of agentic actions as incomplete, and socially articulated commitments to practice drive this process?

Thompson, Daniels & Tawell: In what ways might young people be agentic in processes of school exclusion and how might that agency be strengthened?

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Group C title: Agency, colonialism, marginalisation and exclusion

Presenter Group C comprises Bal, Rai and Thompson. They raise questions around the development of cultural-historical theorisations of agency as follows:

Aydin Bal (co-authored with Aaron Bird Bear)

How can new approaches to fostering the pedagogical facilitation of agency counter the ongoing effects of colonialism? What lessons does the Indigenous Learning Lab offer for de-colonising efforts to combat racial injustice in schooling?

To facilitate transformative agency, agents need mediating artifacts that help them to take steps toward changing their circumstances (Hopwood & Sannino, 2023). The circumstances in focus here are the overrepresentation of Anishinaabe youth in school disciplinary actions. Hyperpunishment of Indigenous youth in US schools should be understood in the cultural history of the US education system and the "Indian Problem" of the USA as a settler-colonial state. We take up CHAT alongside Indigenous standpoints, manifest theoretically and practically in a Change Lab variant called Indigenous Learning Lab, which integrates concepts of respect, revitalisation and reconciliation (Bal & Bird Bear, 2023). Two guiding principles of our decolonial approach to transformative agency are Indigenous sovereignty and futurity. We refuse deficit perspectives and the representation of Indigenous peoples as helpless victims or passive objects of colonialism.

People cannot survive and thrive in an oppressive institutional culture that persists and reinforces racism, White supremacy, and racialized experiences. Addressing racial disproportionality requires

developing systemic, adaptive, and persistent solutions with historically marginalized communities and practitioners and building justice-oriented, strategic coalitions among multiple communities and activity systems that envision systemic transformation. There is a need for creating an inclusive problem-solving space in which local stakeholders collaboratively engage in future-making with critical dialogue on racism and settler colonialism to dismantle the existing punishing, disabling, and marginalizing education systems and simultaneously reimagine schools as sites of collaboration, inclusive future-making, and joy.

Prabhat Rai

How can we tap into vexed questions of professional practice to reveal and promote the agency of teachers? How can confronting crisis, notions of agentic actions as incomplete, and socially articulated commitments to practice drive this process?

I take up a dialectical view of interconnected people changing the world and, in the process, changing themselves. Based on a study of teacher training in a school committed to ideals of education for justice and equality in rural India (Rai, 2023), I highlight how collective agency of teachers comes into being in responding to some of the vexed questions of practice. I chart how teachers meet historically institutionalised demands that mediate their responses while designing their pedagogy and working alongside children to ensure their long-term wellbeing. Professional long-term commitments and responsibilities determine the direction of agentic work. The social articulation of these commitments shows how agentic action is not a recipe-for-all but develops in response to the recurrent institutional demands. I argue the following are key to fostering agency: understanding and engaging with crisis to develop new motive orientations; creating possibilities for collaborative action by thinking about agentic action as incomplete forms; developing a socially articulated understanding of the commitments of practice creates demands on individuals.

Ian Thompson (co-authored with Harry Daniels & Alice Tawell)

In what ways might young people be agentic in processes of school exclusion and how might that agency be strengthened?

How can we problematise questions of agency and transformation, and the motives that drive them, in practices of exclusion from school? Attempts have been made to strip these young people of their agency because it has been seen as disruptive – in some cases, this may have been entirely understandable from the point of view of everyone involved apart from the young person. We argue for a pedagogic and developmental perspective on agency that avoids false dichotomies between agency and structure (Hopwood & Sannino, 2023). To do this, we draw on Vygotskian non-dualist cultural-historical conceptions of mind within society and Bernsteinian insights on cultural transmission and pedagogy (Daniels et al., 2023). We raise a concern about the moral status of the act of school exclusion. At the root of this problem lies the question: whose agency is more important or acceptable?

Excluded young people do not fit neatly within the categories and cultures of some mainstream schools. The extent to which young people can be agentic in situations of exclusion depends on the social context in which they find themselves. The boundaries that form categories of ‘purity and danger’ in exclusion may be stronger in some settings than others. Some may be more permeable and negotiable. In all the work we have done with young people around exclusion, the consistent theme is that they do not feel that they have been communicated with before, during or after

exclusions. If there is to be a possibility of transformative agency to happen in more instances, then the young people have to be communicated with.

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23 Playing to foster transformation: Let's change the world with the Brincadas

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Presentation: Workshop (90 minutes)

Theme: Dealing with climate change

Keywords: Play Transformation Vulnerabilities

SHORT ABSTRACT

This session offers the opportunity to experience play as a meaningful instrument to connect research and action for creating new possibilities of being, acting, and feeling to bring on board participants to society's concerns for a better ecologically and socially fair world. Language in Activities in School Contexts Research Group (LACE), a body of doctors, doctoral, master, and undergraduate students, along with high, middle, and primary school educators and students has created the Collectives of Investigation and Action (COLINA) as groups of people connected to educational institutions that join researchers to work with vulnerabilities aggravated and/or resulting from climate or environmental emergencies within the State of São Paulo/ Brazil. The focus is to develop multimodal repertoires to investigate, describe, analyze, prepare, implement, reflect, propose, and evaluate ways of acting to overcome adversities that have made situations of social vulnerability catastrophic. In this workshop, participants will be invited to dive into three main aspects. Firstly, in the Collective moment, participants will play to constitute a collective. In the Investigation part, playful ways will support participants in investigating their ethical-political sufferings. Finally, in the Action phase, participants will propose ways to collectively contribute to the development of Good Living. All this experience will be supported by examples of the Brincadas Project developed by LACE to work with educational institutions in situations of social vulnerability such as indigenous communities, *quilombolas*, LGBTQIAPN+, women, immigrants, deaf, elderly, and Afro-descendants, among others who suffer from processes of exclusion in our target area.

EXTENDED SUMMARY

This session offers the opportunity to experience and discuss play as a meaningful instrument to connect research and action for creating new possibilities of being, acting and feeling so as to bring

on board participants to society's concerns for a better ecologically and socially fair world. Play offers opportunities to act a head taller than we are (Vygotsky, 1933). In other words, it means going beyond our immediate possibilities once it allows our imagination to impact our past experiences and, then, our past experiences to impact our imaginings which somehow generate new social activities (Holzman, 2009). Besides, play enhances the exercise of strengthening power through collectively, democratically, and creatively engaging participants in revolutionary activities that expand the immediate understanding and potential for acting (Van Oers, 2013).

Play also creates a space to understand how we can deal with devastating issues of our reality and experiment with a *sentipensante* (feeling-thinking) way of doing research (Borda and Moncayo, 2009), which strongly involves the mind and the heart. Through play and performance, educators, activists, and researchers, in general, can immerse in devastating realities to first make them apparent. This movement is followed by discussions of emerging possibilities to understand these realities from intercultural perspectives which supports reflecting on possibilities to become responsive and responsible for the generation of ideas and actions to transform them (Freire, 1987). These reframing actions can in all likelihood develop a transformative, liberating, voluntary, and decapsulated agency (Freire, 1987; Stetsenko, 2017; Liberali, 2017).

In this workshop, participants will be invited to dive into three main aspects - Collective, Investigation, and Action - developed by the Language in Activities in School Contexts Research Group (Linguagem em Atividades no Contexto Escolar - LACE), a body of doctors, doctoral, master, and undergraduate students, along with high, middle and primary school educators and students. This crowd has used this process as a means to deal with the oppressed circumstances they have lived with. The Collectives of Investigation and Action (COLINA) are groups of people connected to educational institutions that join LACE researchers to work with vulnerabilities aggravated and/or resulting from climate or environmental emergencies within the State of São Paulo/ Brazil. The focus is to develop multimodal repertoires to investigate, describe, analyze, prepare, implement, reflect, propose, and evaluate ways of acting to overcome adversities that have made situations of social vulnerability catastrophic. These three aspects will organize the following steps of the workshop.

Firstly, in the Collective moment, participants will play to constitute a collective. In other words, they will find ways to build a common collective force that can expand their power of existence/conatus (Spinoza, 2019) which is enhanced by the multiplication of individual power of existence in encounters that expand possibilities of acting and thinking, individually and collectively to persevere in existence/conatus.

In the Investigation part, playful ways will support participants in investigating their ethical-political sufferings. This category, proposed by the social psychologist Sawaia (2003), refers to a type of suffering produced by social exclusion and involves the affections connected to oppressions and inequalities crystallized in sad feelings that weaken the power of existence - conatus (Spinoza, 2019). Moreover, it portrays the pain that arises from the social situation of being treated as inferior, subaltern, and devalued.

Finally, in the Action phase, participants are invited to propose ways to collectively contribute to the development of Good Living. This ancestral concept expresses a way of being on Earth (Krenak, 2020) that is linked to a cosmivision constituted by the lives of people and all beings that share air, water, and land. This playful moment will involve strengthening participants' power of existence to think of

ways to overcome their ethical-political sufferings through the collaborative development of multimodal resources as tools to raise their voices (hooks, 2019) or scream (Walsh, 2019). All this experience will be supported by examples of the Brincadas Project developed by the LACE Research Group to work with educational institutions in situations of social vulnerability such as indigenous communities, *quilombolas* (Afro-Brazilian enslaved groups who escaped slavery and have constituted their communities for centuries). Apart from that, LGBTQIAPN+, women, immigrants, deaf, elderly, and Afro-descendants, among others who suffer from processes of exclusion aggravated and resulting from climate or environmental emergencies within the State of São Paulo. The proposal has been developed with shared responsibility from the demands expressed by partner educational institutions, which together with the researchers, create possibilities of revolutionary actions in their contexts. More particularly, the spotlight of this undertaking falls on the development of authority and authorship of each of the members of the Brincadas Project over their own lives and the transformation of their realities (Engeström; Sannino, 2016; Engeström, 2006, 2009, 2011; Virkkunen, 2006), undoubtedly taking into account the paramount importance of the collective movement.

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25 Play and Children's Executive Function Skills Development: Evident from an Experimental Research

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: play executive functions digital play

SHORT ABSTRACT

The level of executive functions in childhood is a significant predictor of academic and social success in school (Best et al., 2011; Veraksa et al., 2022). According to research, play is an effective way to develop executive functions but most previous studies only evaluated the short-term impact (Bukhalenkova et al., 2020; Sukhikh et al., 2022). This study aimed to determine what types of play ensure stable progress in executive functions in preschoolers. Experimental design included following study groups: role play group, play with rules group, digital play group, and control group. All groups were equalized in terms of the initial level of executive functions. 136 preschoolers, ranging from five to seven years old, attended 14 play sessions, lasting 20-30 minutes. Post-tests on the executive functions using the NEPSY-II (Veraksa et al., 2020) were conducted immediately after the training as well as four months later. As a result, children in all groups demonstrated progress in executive functions immediately after the intervention. Digital play showed the highest efficiency in the first post-test and, unlike other types of play, influenced all components of executive function. However, a sustainable positive effect on the executive functions in the follow-up test was registered only for role play and play with rules, while digital play showed a lasting result only for inhibition. Long-term effects of role play and play with rules were significantly higher than in control group. These data point the potential of role play and play with rules to provide qualitative reorganization of the mental structures.

EXTENDED SUMMARY

Play is an effective tool of mental development in early childhood, in particular the development of executive functions which are significant predictors of the academic performance (Best et al., 2011) and social success in school (Veraksa et al., 2022). The results of the research confirm the significant impact of role play, play with rules and digital play on the development of the executive functions in short-term (Bukhalenkova et al., 2020; Sukhikh et al., 2022; Thibodeau-Nielsen et al., 2016). However, there is lack of data about sustainable developmental changes occurring in different types of play. While psychological change can be considered a developmental outcome if it aligns with the principle of sustainability: developmental result is a change that persists even after the intervention stops (Veresov, 2015).

In this study, the sustainability of the executive functions' development in role play, play with rules and digital play was investigated. Experimental design included six study groups according to the type

of play: role play (Free Play group, Adult-Directed Play group, Child-Directed Play group), play with rules, digital play, and control group. All groups were equally formed based on the initial level of the executive functions (T1). 136 preschoolers aged five to seven years attended 14 play sessions, 20-30 minutes each. The post-tests on the executive functions (NEPSY-II, Krokman et al., 2007; Veraksa et al., 2020) were conducted immediately after the end of training (T2) and 4 months later (T3). The results revealed significant changes for all types of play in the first post-test. Digital play showed the highest efficiency and influenced all components of the executive functions: visual (T-test, $p < 0.001$) and auditory working memory ($p < 0.001$), cognitive flexibility ($p = 0.013$), cognitive ($p < 0.001$) and behavioral inhibition ($p = 0.004$). Games with rules influenced 4 of 5 components, except behavioral inhibition. Different types of role play influenced 3 of 5 components. However, in the follow-up test the results showed a sustainable positive effect on the executive functions' development for role play and play with rules, while digital play demonstrated sustained impact solely on inhibition. The participants from the Digital Play group demonstrated a decrease in visual (Repeated-measures ANOVA, $T2 > T3$, $p < 0.001$) and auditory ($T2 > T3$, $p = 0.043$) working memory, cognitive flexibility ($T2 > T3$, $p < 0.001$) in the follow up test, while in other study groups the indicators have improved. In addition, long-term effects of role play (ANOVA, $p = 0.036$) and play with rules ($p = 0.042$) were significantly higher than in control group. These data point to the sustainable impact of role play and play with rules on the executive functions' development. It can be assumed that these types of play contribute to the restructuring of interfunctional connections (Veresov, 2015; Vygotsky, 1984). Whereas digital play rather trains separate mental processes without qualitative reorganization of the mental structures. The findings emphasize the significance of creating developmental instruments rooted in role play and play with rules and integrating them into preschool education.

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31 ONLINE - Multilingual English Teaching: Challenges and Possibilities in the Secondary Mainstream Classroom.

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Meaningful education

Keywords: Activity Theory Multilingual English education Multilingual English teachers Promoting equity in education

SHORT ABSTRACT

Researching minoritized English teachers in multilingual settings is pivotal due to their potential to promote educational justice by empowering multilingual students to disrupt exclusive discourses, linguistic hierarchies, and asymmetrical power relationships. However, few studies have focused on actual classroom practices and their complex connections to teachers' identities, beliefs, and professional biographies. Research regarding in-service multilingual English teaching is problematically scant, and has been mostly focused on monolingual English teachers, bilingual learners, perception surveys at the expense of classroom instruction, while emphasizing minoritized multilingual teachers' deficiencies. This study explores the lived-experiences, and classroom practices of six diverse-in-service multilingual English teachers in a secondary public education context in Massachusetts. The research ethnographically examines how teachers overcome contradictions in their activity system by mobilizing different resources to enhance their pedagogical decisions in a state that has historically favored white-monolingual English educators and English-only teaching practices.

Drawing on Cultural Historical Activity Theory (CHAT) (Engeström, 2005) and translanguaging as pedagogical practice (Kleyn & Garcia, 2016), this study investigates multilingual English teachers' journey during an academic year and implements CHAT to hold simultaneous focus on multiple aspects involved on classroom activity through the triangulation of video-recorded lessons, journal entries, interviews, and field notes of teacher's participation in multiple institutional events. Findings add to literature by unpacking how a CHAT analysis supports the complex study of multilingual educational settings, its contradictory practices, and transformative solutions. The study also proposes an introspective look to the subject through the employment of translanguaging to examine classroom decisions and teachers' agency.

EXTENDED SUMMARY

Multilingual English Teaching: Challenges and Possibilities in the Secondary Mainstream Classroom.

In the United States minoritized English teachers experiences (e.g., people of color, immigrants, indigenous, and nonstandard users of English varieties) are vital due to their potential to promote educational equity, specially in a country that has historically established restrictive educational policies and practices based on monolingual, nativist, and heavily standardized language ideologies

(Ricento, 2003, Ovando, 2003). In fact, nativism, monolingualism and white supremacy have been a guiding rationale in the U.S school system, exercising a power—material and symbolic— reflected, for example, in practices that have normalized multilingualism as a professional burden for minoritized English speakers, among them English language teachers (ELTs) (Braine, 1999; Canagarajah, 1999; Kachru, 1994; Pennycook, 2016; Philipson, 1992). Under this colonial ideological framework, native, white, and monolingual ELTs are frequently considered the language experts to teach superdiverse students, producing a professional disparity that strips of value and legitimacy ELTs who do not fit neatly in this identity and professional boxes (Amanti, 2019b; Braine, 1999; Canagarajah, 1999; Flores, 2015, 2020; Rudolph et al., 2020). Likewise, traditional educational scholarship has deemed as deficient or irrelevant the multilingual classrooms practices of minoritized ELTs. Thus, while the United States has an incredibly heterogeneous student body, the U.S. educational system has promoted the homogenization of the teaching force by fostering structural practices that prioritize monolingual, standardized, and nativist teaching ideologies, identities, policies, and practices (Flores & Rosa, 2015; Ovando, 2003; Ricento, 2003, 2013, Wiley, 2014; Viesca, 2013), resulting in a disservice to multilingual students and ELTs who are not truly represented by this fallacious national system of values and beliefs. Consequently, this study aligns with a social justice agenda that seeks to explore sustainable teaching practices in an unequal context—in this case mainstream secondary education in the United States. This project seeks to expand the knowledge of minoritized multilingual English teachers who have been frequently ignored by previous research in their roles educating equally oppressed multilingual immigrant youth, thus this project addresses the following questions:

RQ1: What are the multilingual classroom practices that multilingual English teachers foster in the mainstream classroom?

- a. Why may be the challenges and opportunities of fostering a multilingual pedagogy in the mainstream setting?
- b. How do multilingual teachers deal with challenges in their classroom and professional setting?
- c. How do past personal, academic, and professional experiences have an effect on their pedagogical decisions?

Context

The study took place in a large public secondary school in the Massachusetts with six multilingual English teachers who belong to cultural, racial, and linguistic minoritized communities within the context of the United States. The six teachers participated in the research project for a full school year (9 months) and continued to be part of the study for the remaining of the current academic year (4 additional months).

Theoretical Framework

This study is a qualitative inquiry within the bounds of Cultural Historical Activity Theory (CHAT)(Engeström, 2005; Engeström, & Sannino, 2017) and builds on previous work by educational ethnographers who have documented how individuals in institutionalized relationships “think, believe, and behave” (LeCompte & Schensul, 1999, p. 8). As such it employs an immersive-participatory approach to describe and critically assess the array of complexities that emerge in multilingual English teaching. CHAT is implemented in order to hold simultaneous focus of all the elements and relationships that converge in any human activity system (e.g., subject, tools, object, rules, community, and division of labor) and translanguaging (García, 2009; García & Wei, 2015) these two epistemologies are put in conversation to examine with nuance the complex connections of

teacher identities and trajectories to their pedagogical practices (Torres-Rocha, 2018; Varghese, 2016; Varghese et al, 2016; Yazan, 2018).

Data Sources

The study triangulates multiple sources of evidence that reflect how multilingual English teachers “enact daily life in recurrent ways” (Erickson, 1992, p. 222). As an educational ethnographic study that seeks to understand multilingual English teachers’ ways of thinking, being and doing, it employs five qualitative instruments for the data collection process (1) semi-structured interviews, (2) field work, (3) journaling, (4) video-recorded lessons and (5) artifacts. Given the ethnographic nature of this study, my role as researcher also includes becoming an observer/participant of the teachers’ professional community. To that end, I designed a professional development workshop to promote self-reflexivity, and praxis enhancement based on contradictions found in the difference data sets.

Results

Preliminary results demonstrate the most common contradictions that teachers face (dilemmas and critical conflicts) and their individual efforts to overcome through the analysis of their interviews, journal entries and video-recorded lessons. Although the study is not framed as change laboratory, it makes the case for micro interventions, small moments and events that generate changes in teacher praxis. The study argues that individual and collective agency are fundamental in a context in which social inequities persist at different levels.

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35 Exploring preschooler's emerging chemistry with play-based learning

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Preschool chemistry Framework Theory Play-based learning

SHORT ABSTRACT

The emergence of chemical knowledge lies at the backbone of natural science didactics. The present research aimed to explore the core concepts of preschooler's emergent chemistry, and specifically children's understanding of smallness and evaporation. For the purposes of the study a longitudinal study was designed using play based- learning, educational experiments and zooming in videos (Hedegaard, M., 2008).. All educational activities were recorded with cameras and additional material was collected using semi-structured individual interviews after each activity (Pink, S., 2014). Using the core concepts of Framework Theory (intuitive and counter-intuitive concepts, initial-synthetic-scientific models) children's verbal and non-verbal material was analyzed to understand how children conceptualized smallness and evaporation.

Results confirm previous findings that children's initial concepts were guided by a senses-based reasoning. Children mainly focused on macroscopic visuality, how objects appeared to them externally, as a basis for their understanding of smallness and evaporation. On the other hand, children's synthetic models exhibited higher analytico-synthetic skills, creating categorizations based on non-visible abstract attributes. The emergence of the microscopic model of matter presupposed a break from physical ontology, mainly viewing external reality as everyday physical objects. These changes were reflected in children's ability to grasp that invisible matter does exist, illustrated in the concept of microscopic smallness and recognizing that water exists in gas form.

EXTENDED SUMMARY

Children's emergence of chemical knowledge lies at the backbone of preschooler's natural science didactics. Children's ideas about the structure of the world, what it is made of, runs coherently across different disciplines, such as Physics, Astronomy, Biology. Given its importance and under-researched character, the present research aims to explore core concepts of preschooler's emergent chemistry, and specifically children's understanding of smallness and evaporation.

Until now, chemistry didactics has mostly focused on older ages. Recent data has shown that children's initial ideas group matter based on its "intensive sensory-motor properties (*e.g., color, shininess, softness*)" (Smith, 2008). For example, mass, volume or weight are approached intuitively as static, continuous and homogeneous. Loss of immediate sight of objects means that they cease to exist and they struggle differentiating between matter and non-matter (a table vs democracy). The three states of matter are viewed as three different things having no connection with each other, having more difficulties with understanding the character of gases and liquids than solids (Johnson &

Tymms, 2011). Emergence of chemical concepts begins with connecting weight, volume, and mass with all kinds of visible and non-visible matter, as well as understanding that everything is comprised of small particles. This preliminary compositive model of matter functions as a basis for further development towards the fullest scientific concept.

The question of teaching science to preschoolers touches upon general theoretical problems of conceptual development. Vosniadou's Framework theory has been applied to a variety of didactic disciplines, such as Astronomy, Physics and Mathematics, exhibiting how scientific thinking emerges from intuitive concepts (Vosniadou et al., 2008). As children learn scientific concepts they challenge both their intuitive explanations which are based on perceptual similarity, and their epistemic and ontological ideas about world. These broader ontological and epistemological ideas determine how children reason about causality and their representations about the structure of the world. In this sense, learning science has both a concrete specific and a more generic aspect, which corresponds to thinking in rational and scientific terms. According to Vosniadou, this dynamic interaction of intuitive and counter-intuitive concepts does not have a linear character in the sense of moving from everyday to scientific cognitive models. On the contrary, it leads to synthetic models, as a consequence of uniting intuitive and counter-intuitive concepts under early or mature ontological and epistemological ideas.

For the purposes of the study a longitudinal study was designed using play based- learning. A series of educational experiments and zooming in videos was implemented (Hedegaard, M., 2008). All educational activities were recorded with cameras (Pink, S., 2014). Also, all children participated in semi-structured individual interviews after each activity in which they were free to express their ideas about the experiments. Children's verbal and non-verbal material was analyzed based on Framework Theory to understand how children conceptualized smallness and evaporation. Ethical aspects were approved by the national board of ethics (Drn:2021-0275). Informed consent was also negotiated with the children and their parents.

Results confirm previous findings that children's initial concepts were only guided by their senses and specifically -regarding smallness- macroscopic visuality (epistemic phenomenology). All the central objects of the experiments which examined smallness, were viewed as small physical objects (physical ontology). Synthetic models of smallness were characterized by the emergence of the recognition that invisible things do exist and can be seen with the help of the microscope. In everyday models of evaporation, children were able to focus on one individual aspect of evaporation in each time. Children's attention was each time focused on the separate characteristics of the process, the fire, the boiling water and the vapors. These were not analyzed in their mutuality, thus having difficulty with understanding the change of state between the liquid and the gaseous state.

Results suggest that while children were learning about chemistry, they were also reviewing their epistemic and ontological ideas. Children's passing from a phenomenistic epistemology to trying to interconnect the different elements which comprised the phenomenon of evaporation represents an epistemic break. Results suggest that passing to a microscopic model of matter presupposes a break from physical ontology, which is the idea that all objects ought to behave like physical objects. This break is reflected in the creation of the new ontological domain of the microscopic, which incorporates counter-intuitive ideas, like that invisible things do exist.

These data suggests that science didactics should focus on all aspects of emergence, the concrete representational, the epistemic and the ontological. Learning about science detonates a series of

changes on their general structure of knowledge. During this process children produce a number of original synthetic models, which might not be scientifically accurate, but are very valuable, because they represent children's active interaction with this material.

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41 Critically reviewing formative intervention research in CHAT

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Yrjö Engeström will offer comments as a discussant

Presentation: Symposium (90 minutes)

Theme: Other CHAT-related topic

Keywords: Change Laboratory Formative Intervention Methodology Methods of CHAT research

SHORT ABSTRACT

Two hallmarks of Cultural-Historical Activity Theory (CHAT) including studying the world in motion (rather than as it is), and seeking to promote positive change. As a result, many CHAT researchers adopt formative interventions, an approach where researchers collaborate with others to facilitate change, without knowing what that change will be from the outset. Diverse formative interventions have been implemented on even more diverse topics, but there have been few reviews of this work. This symposium brings together three recent and complementary reviews. Paper 1 takes a landscape view of CHAT formative intervention research in any context. Paper 2 examines Change Laboratories conducted in diverse fields across the African continent. Paper 3 looks specifically at work done in schools. Together, these reviews point to a significant and growing body of work. Methodological approaches are adapting in tune with theoretical developments, and there is evidence of increasing dialogue with theories outside CHAT. Critical reflections point to key frontiers for development in formative intervention research in terms of engaging with politics, theorisation, participation and securing lasting change. Prof Engeström will offer comments as a discussant before a general discussion.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Mapping Change Laboratory and formative intervention studies

Daniele Morselli & Mattia Favaretto

Within Cultural Historical Activity Theory (CHAT), the Change Laboratory is a consolidated methodology for promoting social change and innovation and belongs to formative interventions. Through Zotero and VOSviewer this paper maps peer reviewed publications worldwide on the Change Laboratory and formative interventions between 1996 and 2022. First, bibliographic analysis showed two main research groups publishing on the topic: one based in Finland with ramifications in other countries and another in Brazil, other researchers publishing in small and “closed” groups. The second analysis of text data (titles and abstracts) identified four clusters in which key words systematically occur together. One cluster relates to the Change Laboratory with a focus on expansive learning, another cluster on formative intervention with transformative agency and double stimulation. The third cluster relates to the methodology, while the fourth to the educational context

where most of the interventions were carried out. This opens avenues for further research exploring this clustering and its evolution over time to detect historical trends.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Mapping Change Laboratory and formative intervention studies

Daniele Morselli & Mattia Favaretto

Background

Within Cultural Historical Activity Theory (CHAT), the Change Laboratory is a consolidated methodology for promoting social change and innovation (Engeström et al., 1996; Virkkunen & Newnham, 2013). The Change Laboratory was put forward in 1996, and later Engeström (2011) explained that the Change Laboratory (together with the fifth dimension and the clinic of activity, Sannino, 2011) is a type of formative intervention.

Aims

While a systematic review of Change Laboratory research in Africa has been recently published (Winberg et al., 2023), this paper aims at mapping worldwide the papers on the Change Laboratory and formative interventions by considering the literature between 1996 and 2022. The explorative research questions set to:

- A) map the landscape of the publications by visualising the research groups;
- B) find key terms and their possible relationships;
- C) identify a possible difference in the use of keywords “formative interventions” and “Change Laboratory”.

Methods

The papers analysed were found on EBSCO (424 records); Web of Science (1251 entries) and Scopus (707); and Pro Quest (461). The search string was: ("change lab*" or "formative intervention") and ("activity theory" or CHAT or "expansive learning" or "activity system" or “contradiction” or "double stimulation" or ascending or "germ cell" or "transformative agency" or “object”). Another 17 papers came from a CHAT mailing list. Journal articles, conference proceedings and book chapters were included; theses and grey literature were excluded. Only full texts were considered, and at least the abstract had to be in English. Each paper was screened independently to appraise that it contained formative intervention or Change Laboratory as keyword, and was situated in a CHAT framework. Full texts were screened to determine whether studies were a Change Laboratory or formative intervention. The full database of papers retrieved was listed in Excel, then imported to Zotero. The total number of papers considered was 287, which were exported in .RIS file format and elaborated in VOS Viewer.

Results

Figure 1 illustrates the number of publications on Change Laboratory and formative interventions between 1996 and 2022, demonstrating growing interest (n=287).

Table 1.

Cluster 1	process 190, change laboratory 160, change 156, expansive learning 129, work 114, approach 109, action 98, tool 83, model 80, transformation 77, concept 82,
Cluster 2	analysis 148, contradiction 117, intervention 141, formative intervention 113, transformative agency 87, data 73, agency 79, double stimulation 56
Cluster 3	practice 200, development 189, research 179, learning 159, knowledge, methodology 106, chat 48, cultural historical activity theory 71, object 65, activity system 60
Cluster 3	Activity 230, teacher 215, school 147, student 130, education 126, project 62, need 60, collaboration 54.

Table 1. key words

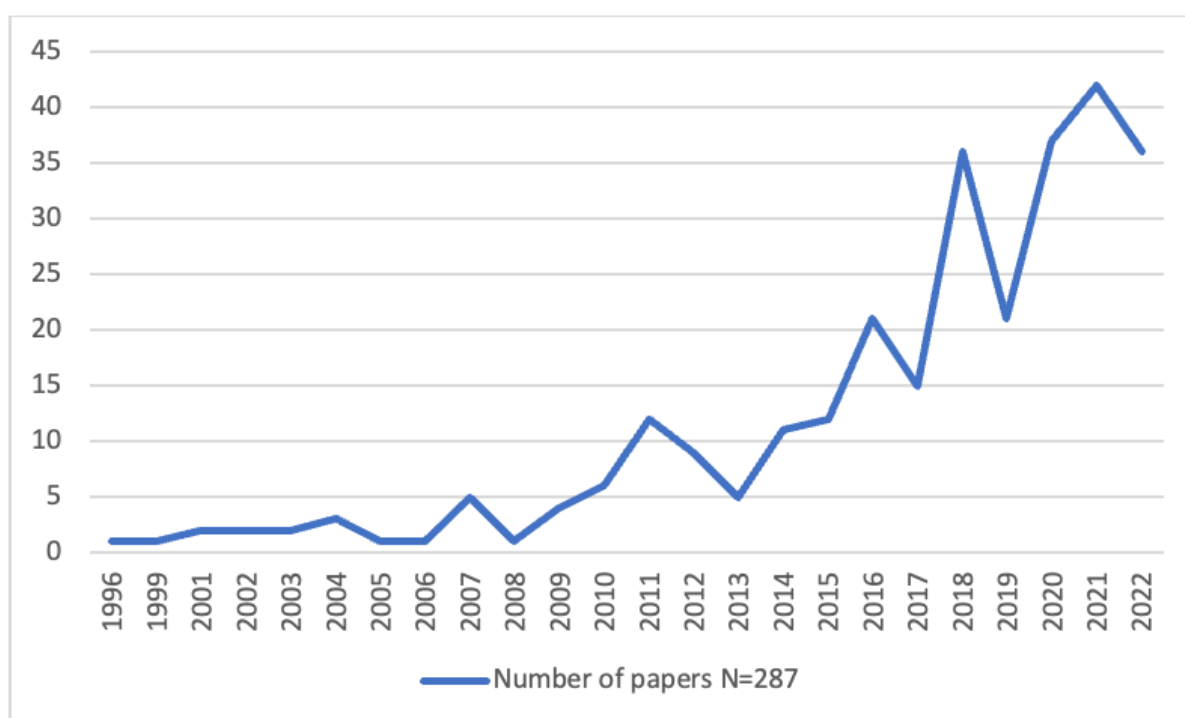


Figure 1. Papers over time

Figure 2 maps co-authorships in studies with at least 2 contributions per authors. Out of 456 authors, only 98 have published at least twice, and of them 67 are connected in the network of co-authorships.

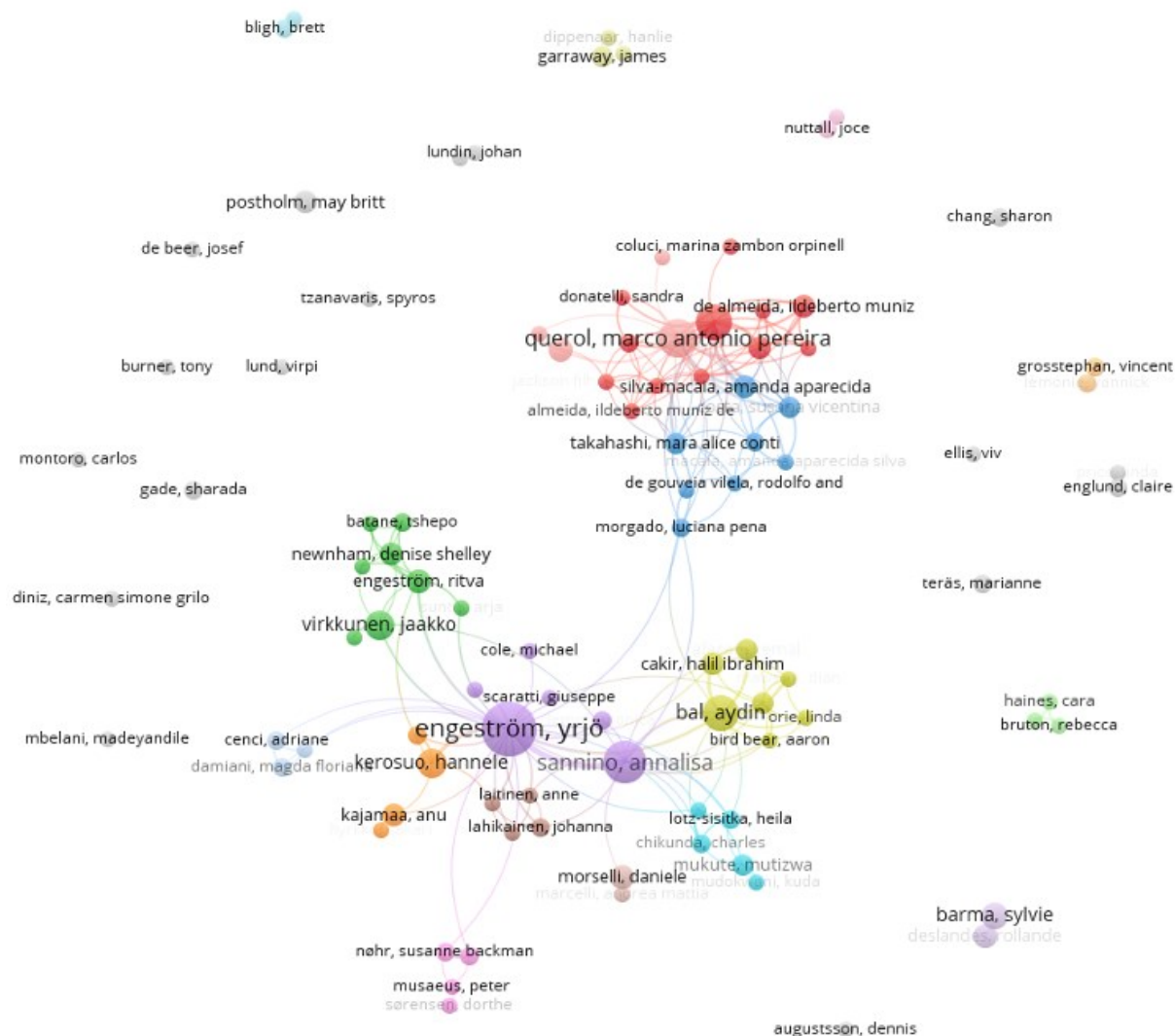


Figure 2 - Author mapping

Two main centres appear. One is based in Finland with Engeström and Sannino as pivot, and with connections both in Finland and outside (for example Bal in the USA). The other centre is based in Brazil with Querol as a pivotal author. Outside these two centres there are 21 unconnected groups.

Finding emerging themes through clustering

The subsequent analysis inspected abstracts and titles to find co-occurrences between key words occurring 25 times or more; 68 terms were extracted, of which 11 were ruled out as common use words (time, use, way) or directly related to publication jargon (article, paper, chapter). In Figure 3, VOSviewer identified four clusters with different colours.

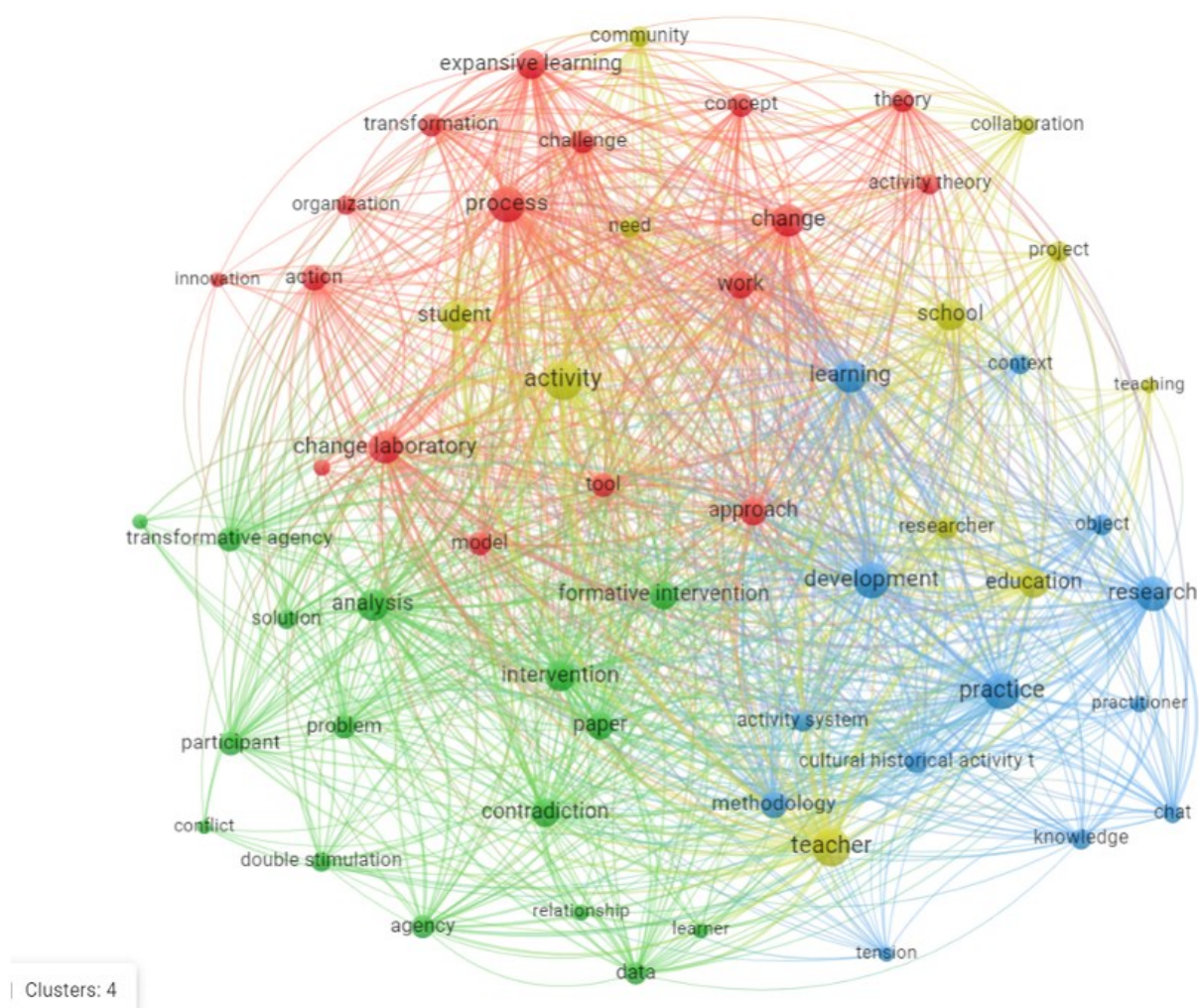


Figure 3 - Keyword clusters

Based on the clusters, Table 1 identifies main key words related to CHAT and their occurrences.

Cluster 1 relates to the Change Laboratory and inspects expansive learning as change process, emphasising tools, models and concept formation.

Cluster 2 deals with formative interventions as study of contradictions and transformative agency through double stimulation.

Cluster 3 concerns methodological aspects and research aspects within cultural historical activity theory, and the development of knowledge.

Cluster 4 deals with contextual application, especially in educational settings, involving teacher and students, the community and asking for collaboration.

Conclusions

The literature on Change Laboratory and formative interventions is growing rapidly, and this study completed a first mapping review of research published between 1996 and 2022, finding two geographic groupings of authors, and four clusters in stated keywords. This opens avenues for further research to explore this clustering and its evolution over time to detect historical trends. While this

research shows the growing importance of transformative agency and double stimulation in formative interventions, other research streams appear underrepresented. Expansive learning as concept formation will have to be considered more by CHAT researchers, also given the importance CHAT attributes to materiality. Other missing elements are 4th generation studies with multiple and interconnected formative interventions, and the emerging themes of fighting inequalities and promoting social justice (Sannino, 2020), which we expect will soon change the landscape of this preliminary mapping.

Plans for interaction with participants

We plan a Mentimeter with participants to brainstorm possible differences between Change Laboratory and formative interventions thus raising interest in this important methodological aspect.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

A critical review of the literature on change laboratory interventions: Lessons from Africa

Chris Winberg

This critical review of the literature offers insights into the use and value of Change Laboratory (CL) interventions in educational contexts on the African continent. The CLs addressed issues in educational provision and management across different levels and fields, including primary, secondary, vocational, and higher education. The issues addressed include the introduction of educational technologies, curriculum renewal, student leadership, school management, and institutional cultures and identities, amongst others. The studies reviewed showed that CL interventions assisted students and teachers as they learned to work with pressing school and local problems. While the focus of the CLs was at the local level, the studies tended to find that the issues were systemic, thus several CLs expanded their remit into addressing societal challenges, such as sustainable practices and responses to climate change, which are particularly pressing issues on the African continent. The findings contribute to an understanding the efficacy of the CL methodology, but also point to the global South's role in addressing some of the grand challenges affecting education and societies globally.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

A critical review of the literature on change laboratory interventions: Lessons from Africa

Chris Winberg

Background

A diverse range of CL interventions have taken place in African countries. In terms of geographic distribution, CL interventions were undertaken in South Africa, Zimbabwe, Botswana, Namibia, Malawi, Ethiopia, Mozambique, Ghana, and Tanzania. The CLs were conducted the fields of education, agriculture, community development, local government and health care. Most of the CL interventions occurred in contexts of poverty and environmental degradation. The focus of this presentation is 23 publications of CL interventions in educational contexts on the African continent.

Aims

This critical review of the literature on CLs in Africa has the aim of understanding how the challenges confronting schools, and the communities and environments in which the students and teachers live and work, have been addressed and, in some cases, alleviated through CL interventions. This study

can thus be seen as a response to the broader research question: “How do we address the challenges and embrace the opportunities facing education in Africa today and in the future?”

Methods

The revised PRISMA methodology was followed (Page et al., 2021). While a systematic and a critical review have much in common, the distinctiveness of a critical review is its strong theoretical framing – in this case CHAT, which offered insights beyond the identification of what is known and what is unknown in the field of study.

Results

Partial change laboratories

Nine studies reported on an incomplete, or only part of, a CL intervention. The studies attempted to involve participants in an expansive learning cycle and did substantive work in this regard but were not able to complete the intervention. Often, there was a lack of resources, a breakdown in communication, non-engagement, a lack of interest or apathy, or discord among participants. The root causes of these conflicts and miscommunications were deep-seated and often underpinned by contextual and resource challenges. In such contexts traditional practices were deeply ingrained and resisted attempts at intervention. In some cases, there was limited knowledge or expertise regarding a proposed new practice, and thus a lack of capacity to advise or guide participants in implementing the desired changes.

Classic change laboratories

Fourteen studies reported on “classic” CLs that followed a full expansive learning cycle. Some interventions included collaborations with international partners (e.g., The Botswana Expansive School Transformation project) intended to facilitate expansive school transformation through information and communication technologies. Several interventions addressed issues in management, institutional cultures and identities. Some included changing attitudes, such as the practice of categorising “single science” learners as lesser than their “double science or triple science” peers. Some CLs focused on curriculum development (e.g., introducing multimedia literacy) and teacher empowerment, others addressed student attrition and student leadership. The CL interventions faced the same challenges as the partial CLs but were more successful because they created safe “boundary spaces” where new concepts could be discussed, new identities could emerge, and new practices negotiated. Transformative ideas emerged from these dialogical spaces such as a “leadership club”, resource sharing, ways of creating new environments and developing new practices to support diverse learning needs. Multilevel support for the CL intervention was generally an enabling factor. Transformative agency emerged through participants’ understanding that the disruption of old patterns held the seeds of future change.

Conclusions

The critical review offers practical contributions about what might enable or constrain the outcomes of a CL intervention. Deep levels of engagement by participants were needed, but this was often not enough. The CLs comprised relatively homogeneous communities who collectively addressed a particular issue, yet in most cases, multilevel collaboration was needed in order to address the many aspects of the problem, including accessing necessary resources. In educational interventions, conflicts, dilemmas, and double-binds powered the change process forward, demanding different learning actions as expansive cycles were performed. CL interventions solved certain problems but raised, or revealed, many more. Challenges were inevitably connected to struggles for social justice

and ecological sustainability. As Engeström and Sannino pointed out, it is "not accidentally, collective initiatives for ... bold formative interventions are increasingly coming from the Global South" (2021, pp. 21).

Interaction

Participants will be invited to discuss: How far could CL methods and principles be adapted, stretched, changed, or augmented? Many of the principles of the CL resonate with African philosophies and values (e.g., working towards a shared object for the common good), but some studies suggest that there were challenges when implementing a "classic" CL intervention in an African context. For example, the "principle of multivoicedness might not possibly manifest itself well in an African country such as Namibia, where children are taught to listen and are discouraged from questioning their elders" (Kandjengo and Shikalepo, 2021, p. 3590).

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

A critical and formative review of Change Lab and related formative interventions in schools

Nick Hopwood

Change Labs and related formative interventions that have been conducted in schools were identified. Methodology, theoretical references, substantive foci, outcomes, and limitations were critically reflected on to identify key frontiers for development, in the spirit of strengthening the contribution Change Labs can make to meaningful transformation in schools. Fifty-five studies were reviewed, including Change Lab, Learning Lab, Indigenous Learning Lab, Change Room, Change Workshop, and Laboratory of Educational Change. Most common core concepts were expansive learning, activity systems double stimulation. Wider CHAT concepts included boundary crossing and relational agency. There is also evidence of dialogue with wider theories, including Indigenous epistemologies and critical pedagogy. Reported outcomes predominantly involved new pedagogic practices or new forms of collaboration. Diverse limitations were noted, including restricted or short lived change, leaving underlying structural and cultural issues intact, and challenges relating to participants' voice. Change Labs have been applied to diverse issues in schools, and have frequently proved effective in facilitating meaningful change. Variations in their form, and the spawning of sibling approaches show them to be adaptable and perhaps more feasible than might be expected. These have tended to be focused on pedagogical practices rather than wider whole-school change. Critical reflection on these findings informs seven fronts for future development in Change Labs to strengthen their contribution: participation, beyond-technical change, enduring change, epistemic justice, addressing grand challenges, resistance, and reporting.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

A critical and formative review of Change Lab and related formative interventions in schools

Nick Hopwood

Background

Change Laboratories (CLs) are a distinctive approach to action research grounded in Cultural-Historical Activity Theory (CHAT), a growing influence on educational thinking. CLs offer particular value as an instrument to go beyond technical change, oriented instead to systemic and ideologically driven transformation. However, there have been few reviews of CL research, none focused on education.

Aims

The first aim was to identify all Change Labs and related formative interventions that have been conducted in schools to date. Then, the aim was to identify key patterns in terms of their methodological details, theoretical references, substantive foci, outcomes, and limitations. The third aim was to critically reflect on these in order to identify key frontiers for development, in the spirit of strengthening the contribution Change Labs can make to meaningful transformation in schools.

Methods

Ninety-seven records of 55 studies were included in this review. Initially, 978 records identified from databases were screened to 81 for detailed review, with a further 15 sources from snowballing and personal communication. The review includes studies published before October 2023.

The study included research that self-identified as Change Labs, as well as those referring to an increasing number of variations and adaptations, with explicit heritage in the Change Lab tradition: Learning Lab, Indigenous Learning Lab, Change Room, Change Workshop, and Laboratory of Educational Change.

Results

Change Labs in schools have grown and spread over the last 25 years. They have been conducted in 24 countries, concentrated in Scandinavia, USA, Canada and Brazil, with a thin global spread elsewhere.

It was most common for studies to involve just one school, and for interventions to last between 3 and 12 months. Studies have involved schools covering the primary to upper secondary range. Only 13 studies explicitly mentioned schools serving disadvantaged communities. Teachers have been the most common participants, with a second tranche investigating teachers' work with others (teacher educators, industry representatives, health professionals etc); students are under-represented as participants.

The most common substantive focus has been on teachers' or student teachers' classroom practices, followed by collaboration with others, within and beyond the school institution. The wholesale reorganisation of schooling was less frequent, and other isolated foci including teacher wellbeing, parental involvement, student leadership, and youth agency. Reflecting this, the wider issues these Change Labs have addressed were predominantly matters of professional learning and practice development. Inclusion and social inequality were explicit broader issues in 12 studies.

Theory is central to the design and conduct of Change Labs. Expansive learning (Engeström, 2015) was a theoretical reference in 48 studies, closely followed by activity systems and contradictions (47 studies). Of the latter, most (33) drew on the second generation of CHAT (referring to one system), 13 looked at interactions between systems (3rd generation), and one referred to the more recent fourth generation (complex constellations at multiple levels) (see Engeström & Sannino, 2021 for more on generations). Double stimulation was explicitly referred to in 33 studies, most commonly in relation to mirror data and auxiliary stimuli. Links to agency were made in several studies, including several using Sannino's (2015) TADS framework. Notions of germ cells and ascent from the abstract to the concrete were much less common, despite being foundational in Change Labs (Engeström, 2020). Other CHAT concepts were also addressed, particularly boundary crossing and relational agency. There is also evidence of CHAT being brought into dialogue with wider theories through Change Labs, including Indigenous epistemologies, and critical pedagogy (Freire).

Reported outcomes predominantly involved new pedagogic practices or new forms of collaboration between professionals or institutions. New institutional frameworks or concepts of education were also reported. Diverse limitations were noted, including restricted or short lived change, leaving underlying structural and cultural issues intact, and challenges relating to participants' voice. Patterns in the omission of methodological details were also noted, informing a suggested template for minimum reporting of Change Lab research.

Conclusions

Change Labs have been applied to diverse issues in schools, and have frequently proved effective in facilitating meaningful change. Variations in their form, and the spawning of sibling approaches show them to be adaptable and perhaps more feasible than might be expected. These have tended to be focused on pedagogical practices rather than wider whole-school change. Critical reflection on these findings informs seven fronts for future development in Change Labs to strengthen their contribution: participation, beyond-technical change, enduring change, epistemic justice, addressing grand challenges, resistance, and reporting.

Interaction

Sub-groups of attendees will be given summaries of key findings relating to particular aspects (eg. theory, foci, sampling, limitations) and asked to share their initial responses and questions, at a midpoint of the presentation. The symposium will ensure at least 30 minutes for plenary discussion.

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43 Design of Places that Bring People Together: Community cafés that Contribute to Social Inclusion

Eiji Tsuchikura,¹

¹ Hosei University, Tokyo, Japan

Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: community cafe trust germ cell

SHORT ABSTRACT

Places and relationships where people can feel safe and comfortable are important for well-being. In this context, some cafés in Japan are interested in bringing people together. These are also known as community cafés. We found that users of community cafés have a sense of trust not only in the café owner and other users, but also in the café itself. How, then, does a sense of trust develop in community cafés? This study aims to identify the resources and opportunities that encourage users to develop a sense of trust. We conducted fieldwork in five community cafés. We visited the cafés regularly and interviewed café owners and users. Analysis of data indicates that there are three main resources and opportunities for users to meet and interact with new people in cafés. First is flyers for local events and the owner's favourite objects. Second is the smallness of the space inside the café. Third is music and art workshops. These resources and opportunities of community cafés help people get to know and befriend others. New activities develop as people get to know each other and become acquaintances in community cafés. For example, one user began ukulele lessons with friends he met at the café. However, the types of activities that develop are not standard. They develop depending on who meets with whom and what resources are available as a medium. In this sense, the community cafés are like germ cells (Engeström, 2014) for users, which are the source of new activities.

EXTENDED SUMMARY

Background

Loneliness and isolation are recognised as social problems (e.g. in the UK and Japan). The importance of social capital for well-being has been highlighted (Putnam, 2001), as has the importance of places and relationships where people can feel safe and comfortable. There are several places that build social capital, and one of the most important is the “third place” (Oldenburg, 1999).

In this context, some cafés in Japan are interested in bringing people together. These are also known as community cafés. What is a community café? Coffee chains such as Starbucks and Tully's Coffee are forced to prioritise profits. By contrast, community cafés prioritise providing places for people to meet and socialise.

We found that users of community cafés promote “trust in the place” (Tsuchikura, 2023a; 2023b), which indicates that users have a sense of trust not only in the café owner and other users, but also in the café itself. In Japan, it is unlikely that users feel a sense of trust towards a café chain's staff, other users, or even the chain itself. How, then, does a sense of trust develop in community cafés?

Aims

This study aims to identify the resources and opportunities that encourage users to develop a sense of trust in the owners and other users of community cafés and in the café itself.

Methods

We conducted fieldwork in five community cafés in Tokyo and Kanagawa Prefecture, Japan, between 2019 and 2023. We visited the cafés regularly and interviewed café owners and users. We transcribed the interviews and explored the resources and opportunities that contributed to building trust. We examined people's involvement from an analytical perspective that focused on objects and access to resources (Lave & Wenger, 1991).

Results

There are three main resources and opportunities for users to meet and interact with new people in cafés.

First is flyers and objects. Flyers provide information about various events in the area where the café is located. They act as relay points for local information. Objects in the café, for example, Elvis Presley products, ukuleles, photographs, paintings, and local specialties, represent the owners' favourite things. These objects are diverse, depending on the owner's preferences, and they make the café a unique place. Flyers and objects provide an opportunity for users to interact with café owners and other users. Local flyers and unique objects do not exist for coffee chains.

Second is the smallness of the space inside the café. Generally, the interior of a community café is not spacious. Consequently, people naturally overhear the conversations of those at other tables.

Conversation topics are naturally shared with others in such cafés. This gives people the chance to talk to others they are meeting for the first time. If the owner and a user converse, others can join in naturally. Smallness helps to reduce the emotional distance between people.

Third is music and art workshops that are organised on a regular basis. By attending workshops, people get to know each other while working together.

These resources and opportunities of community cafés help people get to know and befriend others. How do relationships develop with someone you meet in a café? After meeting for the first time and seeing each other several times on random occasions, people become acquainted. They get to know each other's acquaintances, thus increasing the number of acquaintances.

Subsequently, community cafés provide opportunities to engage in new activities. For example, one user who is an art teacher was introduced to a job by someone she met in the café. Another user said that by bringing people who have newly moved into the neighbourhood, the café helps them make connections in the community. Another user began ukulele lessons with friends he met at the café. Thus, community cafés give people the opportunity to engage in new activities, which builds trust.

Conclusions

This study identified three resources and opportunities of community cafés that bring people together. New activities develop as people get to know each other and become acquaintances in community cafés. However, the types of activities that develop are not standard. They develop depending on who meets with whom and what resources are available as a medium. In this sense, the community cafés are like germ cells (Engeström, 2014) for users, which are the source of new activities.

These places are important for people whose relationships tend to be closed, especially for older adults and young people living alone. Social inclusion can be achieved by designing these places with the identified resources.

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54 Theorizing Professional Care with Cultural Historical Theory – the case of ECEC

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: care ECEC pedagogy

SHORT ABSTRACT

Traditionally, cultural-historical theory has not been overly preoccupied with the concept and practice of caring in ECEC. This omission may reflect that the term care often is associated with attachment theory and dyadic mother-infant relationships, rather than with pedagogical practice in a professional setting. Many scholars challenge the vocabulary of care, instead proposing concepts such as “compassionate pedagogy” (Taggart, 2016), or “cultures of compassion” (Lipponen et al., 2018; Rajala et al., 2022). We argue that care should be reclaimed and taken seriously also within the cultural-historical tradition as a way of ensuring high quality and inclusive education for all (Winther-Lindqvist 2021). However, it represents a challenge that the terminology of care in psychology originates from the mother-infant relationship, as this easily becomes an implicit benchmark of good caring also in the ECEC setting. We explore how caring well for the whole group can be a new benchmark for high quality education in ECEC and discuss how it is at the same time a challenge to avoid instrumental relationships when care is professional and paid labor by staff sometimes tired, often underpaid and with many tasks and priorities. Advancing in conceptualizing care within a cultural-historical framework, we propose that organizing shared play activities, addressing, and respecting children as a peer-group, and involving children in everyday life practical work in smaller groups, are good ways of ensuring a caring environment that contributes to children’s motive development and at the same time is practically possible for the staff to do in ECEC.

EXTENDED SUMMARY

Background

Caring actions are an integral part of the human experience as social beings, particularly evident in the interactions between adults and children in the early years. In contemporary societies, the responsibility of caring for young children has evolved into a collaborative effort between families and social institutions such as daycares or nursery schools. In such a scenario, the interrelations between care and education and the tensions (or contradictions) involved in providing care as paid labor have emerged as challenges both for policy and theoretical elaboration.

Conceptualizing care is no simple task, given the complexity and the multiple dimensions involved in its realization in social life. Even in professional settings, the term is not uncommonly used as an everyday concept rather than a scientific one. When considered theoretically, it is frequently linked to attachment theory and the dyadic mother-infant relationships as conceptualized in psychodynamic

approaches, reinforcing the notion that providing care in institutional settings is a less desirable option compared to direct care by the mother and family, and failing to address the peculiar challenges of providing quality care as professional activity in collective contexts.

Cultural-historical theory has not been overly preoccupied with the concept and practice of caring in ECEC. Although the unit of care and education in the early years settings is acknowledged within the tradition, the focus of research has notably been on the developmental aspect of educational practices in daycare centers and preschools.

In this paper, we argue that care should be reclaimed and taken seriously also within the cultural historical tradition as a way of ensuring high quality education and inclusive education for all (Winther-Lindqvist 2021), and we believe that this theory has the potential for significant contributions to advancing discussions and practices of caregiving in the context of early childhood education in dialogue with philosophical and critical feminist approaches to the issue of care in society. To delve into this potential, we discuss a short empirical example of a caring situation from Brazil and Danish ECEC practice in order to unfold: How is care to be conceptualized within a cultural-historical framework? What concepts within cultural-historical theory might be relevant to capture the essential relations of this practice in the context of early years educational institutions? How could cultural-historical concepts such as motive, activity, actions, social situation of development, consciousness and personality be useful to conceptualize care as practice and ethics in collective and professional settings? How can cultural-historical wholeness approach to child development and age periods inform the proposition of experiences in ECEC settings where children are not only well-cared for but also learn to care for each other, for their environment and ultimately for the world?

Aim

Considering that a caring environment is a condition for well-being, learning and development, we explore the peculiarities of collective care in institutional education settings for early childhood. Bringing into the discussion central concepts of cultural-historical theory, we argue that caring well for the whole group can be a new benchmark for high quality education in ECEC, as it ensures a nurturing environment for children's development and is practically possible for the staff to do in ECEC - surpassing contentious ideologies that aspire to an unattainable reenactment of the mother-child dyadic relationship.

Methods

The paper is primarily theoretical and discusses care as a cultural-historical scientific concept for ECEC practice; however the authors draw on empirical examples and knowledge from two ongoing research projects; one in Brazil called "The curriculum *in acto*" and an action-research study taking place in Denmark called World-care.

Results and conclusion

Analyzing care as practice and as an activity considering the multiple and potentially conflicting motive-orientations involved in its realization in professional institutional contemporary settings, as well as taking into account both the practitioner's and the child's perspectives in relation to the needs and object-motives that orient care actions in the daily routine of childcare centers. We propose possible ways for advancing towards a cultural-historical conceptualization of care in dialogue with philosophical and critical feminists approaches to care in society. The empirical examples from Denmark and Brazil based on these conceptual tools allow us to conclude that cultural-historical theory has the potential for providing a context sensitive and more adequate conceptualisation of

care in the context of early childhood education as a particular practice tradition for caring for a peer-group in a collective of professionals.

How interaction with the participants is planned

Participants will be invited to share their impressions of the analysis of empirical situations presented by the authors, as well as voice their opinions, doubts and suggestions regarding the effort of elaboration of a cultural-historical concept of care.

76 Application cultural-historical theory to analyze educational inequality in Russian psychology

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: cultural-historical theory educational inequality zone of proximal development Promoting interaction in social practice

SHORT ABSTRACT

Lev Vygotsky proposed an original and profound concept of social mediation of the development of higher mental functions by cooperation with adults and peers. A certain step in this direction was taken by A. R. Luria, who together with his colleagues organized pioneering empirical studies of speech and thinking features related to the social circumstances of a child's life. Today the study of the influence of factors of the social, economic, and cultural status of students' families (SES) on differences in learning outcomes and the emergence of the phenomenon of inequality has become one of the key areas of research in the field of education from the 60s of the 20th century to the present. The potential of cultural-historical theory in the analysis of educational inequality is recognized by modern researchers.

However we discovered that neither Vygotsky's basic theoretical models, nor the program of empirical research for the construction of Luria's pedagogical system, received continuity in the future in Soviet and Post-soviet psychology. We find explanations for this phenomenon both in the policies of the Soviet state in the 20th century and in the interpretations of Vygotsky's key ideas by his followers. We discuss these issues in the context of modern psychological and sociological interpretations of educational inequality.

EXTENDED SUMMARY

Lev Vygotsky proposed an original and profound concept of social mediation of the development of higher mental functions by cooperation with adults and signs. Its key concepts, "zone of proximal development" (ZPD) and "social situation of development" clearly showed psychologists and teachers the need to study the social environment of the child in order to understand the processes of individual development and build adequate pedagogical practices. A certain step in this direction was taken by A. R. Luria, who together with his colleagues organized pioneering empirical studies of speech and thinking features related to the social circumstances of a child's life [7].

Today the study of the influence of factors of the social, economic, and cultural status of students' families (SES) on differences in learning outcomes and the emergence of the phenomenon of inequality has become one of the key areas of research in the field of education from the 60s of the 20th century to the present [8; 12]. The potential of cultural-historical theory in the analysis of educational inequality is recognized by modern researchers [1; 2; 3; 5].

However we discovered that neither Vygotsky's basic theoretical models, nor the program of empirical research for the construction of Luria's pedagogical system, received continuity in the future in Soviet psychology.

The most obvious explanation for this circumstance is the change in the political situation in the country. The creation of Soviet society started the process of erasing class and social distinctions, which, on the one hand, made their research less relevant, and perhaps even contrary to political attitudes. There is actual evidence that this topic has fallen victim to a campaign against pedagogy. Policy warn teachers against identifying so-called "objective" conditions as the cause of academic failure, since it was these conditions that pedagogists explained the failure of schoolchildren [11].

Are there any reasons other than political ones that have limited the use and development of cultural-historical theory in general in Russian psychology and pedagogy for studying the educational inequality? After all, they certainly should not have had a deterrent effect in the post-Soviet period. We find explanations in the interpretations of the key ideas of cultural-historical theory, primarily the zone of proximal development (ZPD) in the theories of leading Soviet psychologists.

The ZPD was "cleared" of any heterogeneity associated with the socio-cultural characteristics of its participants. The practices of cooperation between adults, peers and children that determine the value of ZPD were considered operationally without sufficient attention to socio-cultural characteristics of dispositions.

The abstract, or rather ideal adult, replaced the real ones in it, and, significantly, the very interest in such an adult prevailed for a long time over the interest in those real adult parents and teachers with whom the student interacts. ZPD diagnostics began to focus on artificial environments that are autonomous from real-world practices, with adults specially trained to conduct experiments or study within the framework of a particular variation of developmental training.

Actualization of the problem of educational inequality in Russia has stimulated the emergence of Russian studies of this phenomenon. However, they are already based on foreign theories and methods of study, and those traditions that are least connected with Vygotsky's ideas.

It seems that the ideas of cultural and historical theory can become an important support for the original Russian tradition of studying the influence of socio-cultural factors on the development and education of children.

We discuss these perspectives on the issue in the context of psychological and sociological interpretations of educational inequality in the 20th and 21st centuries using Vygotsky's ideas (Bernstein, Daniels, Panofsky, Vadeboncoeur et al).

In particular, the idea of a ZPD can be used as a tool for operationalizing the concept of «equity» education in institutional and pedagogical practices, ensuring that the realization of educational potential is not the result of personal and social circumstances [9]. In this context, the formation of a ZPD can be considered as the realization in the educational system of high expectations in relation to the achievements of children through the integration/remediation of the experience of their socialization in various socio-cultural environments (first of all, families).

The idea of ZPD can be used to analyze the phenomenon of academic resilience - the ability of schoolchildren from families with low economic, educational and cultural resources to overcome these limitations, achieving the highest results in achievement tests [6].

Significant opportunities for designing educational practices that open up opportunities for the progress of students from low-resource groups are opened up by the direction of research in jointly

distributed activities [13], if it is enriched with tools for understanding and taking into account the features of socio-cultural aspects of the composition of educational collectives and the dynamics of group interaction.

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77 Developing Transformative Agency in Culturally Mediated and Socially Constructed Learning as Praxis

Elina Lampert-Shepel,¹ Sharon Sullivan-Rubin,¹

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Presentation: Workshop (90 minutes)

Theme: Bringing together theory and practice

Keywords: cultural mediation transformative praxis creative scaffolding development of higher psychological functions

SHORT ABSTRACT

The proposed workshop is based on the qualitative case study that explored how beginning educators develop transformative agency (Sannino et al, 2016, Stetsenko, 2016). The study drew on cultural-historical psychology, activity theory, and postmodern art theories. To develop a learning experience for the workshop participants, the researchers applied the research findings on how mastery of a specific sequence of mediational means (Wertsch, 1998) of reflection as narrative, dialog, metaphor/image/schema, and joint artmaking mediated the development of reflexivity as a higher psychological function (Vygotsky, 1987), and educators' development as agents of their praxis (Freire, 1972). Workshop participants will apply a *Creative Scaffolding Model* (crSM) in a sequence of joint tool-mediated activities and discuss how implementing this sequence of culturally mediated activities in their own practice could promote reflexive praxis, foster their growth as agents, and support ongoing inquiry and engagement in transformative praxis of promoting inclusivity, combatting inequalities, and disrupting injustice. The workshop aims to have participants directly experience joint artmaking as a disruptor and to engage with transformative learning processes highlighted in the research. Discussion of their experiences of the tool-mediated joint learning will illuminate how these practices can support participants as change agents.

EXTENDED SUMMARY

What kind of tools of the mind can mediate imagination and thinking and not only shape emerging ideas, but transform them to map new directions for positive change in the communities we work and live in? Creative Scaffolding Model (crSM) is intended to provide the participant with a toolkit to not only support the development of an emerging idea, but also transform it into directions that might not have been anticipated. In this workshop, the participants will engage in scaffolded activities using a research-based sequence of mediational means of reflexivity as a higher psychological function and artmaking strategy to identify and deconstruct important challenges in their professional life to help transform their practice, themselves, their organizations, and communities. Participants will tackle complex issues with the support of such creative scaffolding tools, for example, co-visioning dialog, Collective Image Graphic Organizer (CIGO), and visual narratives through artmaking. Collectively, participants will learn to scaffold their inquiry on how to create more inclusive, equitable situations and solutions.

Scaffolding in education is usually conceptualized as multiple supports given to students in the learning process. Presenters ground their understanding of creative scaffolding on the cultural-historical psychology of Lev Vygotsky and postmodern art theory. Different from the traditional view on scaffolding, their concept of creative scaffolding focuses on supports for emerging, uncertain, complex, and ambiguous thoughts and experiences. Such supports create the space to deconstruct and re-envision the status quo and dare to imagine new courses of action for social and organizational change.

Scaffolding is a term widely attributed to Lev Vygotsky¹, in psychology and education. In fact, it was coined by Jerome Bruner² around 1976, who grounded his conceptualization of scaffolding on Vygotsky's concept of the zone of proximal development, i.e., socially constructed learning that leads development.) The findings of our previous research (Lampert-Shepel et al., 2021) have revealed that joint decision making using a research-based sequence of scaffolds as mediational means³ (Wertsch, 1998) for critical examination of professional practice led the participants to envision pathways that envision and enact change (see figure 1). We argue that continuous experience with a sequence of mediational tools (dialog, artmaking, specially designed graphic organizers) will support the professional practitioner's ability to surface their unconscious conceptions to address and grapple with bigger institutional underlying issues, concerns, assumptions, and biases, which will inevitably arise in practice.

The Process of Creative Scaffolding

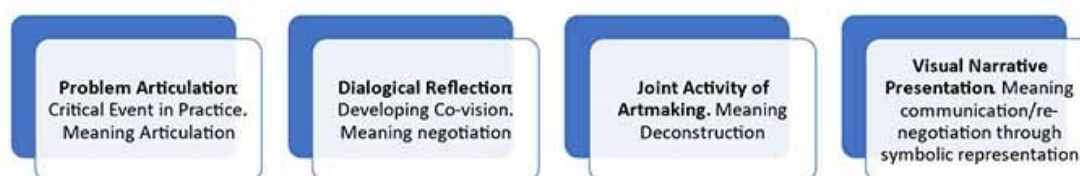


Figure1. Creative Scaffolding Process

¹ Vygotsky, L. (1962). *Thought and language*. MIT Press, 1962.

² Wood, D. J., Bruner, J. S. and Ross, G. "The role of tutoring in problem solving." *Journal of Child Psychiatry and Psychology*, 17.2 (1976): pgs. 89-100.

³ Mediational means are external; they can be thought of in connection with the human hand. With the help of the mediational means we can transform external objects or processes. Psychological tools, in contrast, are internal tools supporting thought in the same way physical tools support labor. Psychological tools, Vygotsky claimed, support an internal mastery - a mastery of oneself (Vygotsky, 1982).

Co-learning and co-visioning are core tenants of our work. The purpose of this workshop is to create a scaffolded experience for the participants to learn the research-based culturally mediated tools and artmaking strategies to identify the important challenges in their professional life to transform their practice, themselves, their organizations, and communities. The findings of our previous research (Lampert-Shepel et al., 2021) has revealed that such joint tool-mediated activities using the sequence of mediational means (Wertsch, 1998) and examination of professional practice led the participants to envision pathways that enact change.

Aims

To educate participants in the concept of *creative scaffolding* and the process of transformative action through joint sequentially structured culturally-mediated activities.

To engage participants in joint creative activities to experience the use of different mediational means of reflexive praxis, including dialogic co-visioning and problem-solving through artmaking.

Model collaborative decision making over social or professional challenges, problems of practice that participants encounter in their professional experience to envision, and plan change and action.

This workshop is for educators, researchers, and practitioners from multiple disciplines looking to not only improve their practice, but also to learn the process of transformative change of existing problem of practice. Presenters will lead the participants through a dialog about the problem of practice and joint artmaking to envision the transformational change needed to resolve it. The workshop will have three parts:

Research presentation that will include short videos of teachers' reflexive praxis through the Creative Scaffolding Model (crSM).

Participants joint activities in small groups, including artmaking.

Presentation of the visual narratives.

Whole group reflection and discussion.

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86 ONLINE - Forward Anchors in a Change Laboratory: Tools for Transforming Science Teachers' Practice

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¹ University of Technology Sydney, Sydney, Australia

Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: science education teaching practice forward anchoring

SHORT ABSTRACT

Aim

This study aimed to facilitate science teacher professional learning, transforming their practice in line with changing curriculum requirements that required a more student-centred approach. The study used a formative intervention based on Cultural Historical Activity Theory, called the Change Laboratory to help science teachers from six schools learn and develop their practice in light of these expectations of change.

Methods

Over three months, six Change Labs workshops were conducted, plus two interviews with each teacher, six focus groups with students and 18 lesson observations.

Results

Analysis of data revealed significant transformation of participating teachers' practices, with several aspects of student-centred teaching previously considered impossible becoming viable features of classroom practice. Teachers' practices changed in four key areas that strengthened the student-centred approach: use of questions, assessment, teaching beyond the classroom, and designing a range of activities. Changes that were initially seen by participants as impossible became viable as the Change Laboratory helped the teachers change their perception of what was expected of them in the new curriculum and how they could achieve that despite challenging conditions. This presentation will draw on Sannino's Model of Transformative Agency by Double Stimulation (TADS), and specifically her concept of warping. It will identify the kedge anchors and associated actions that enabled the teachers to transform their teaching practice amid conflicts of motives.

EXTENDED SUMMARY

Background

Radical curriculum change presents significant challenges but also opportunities for science teachers. Precisely such conditions apply currently in Ghana, where a major curriculum overhaul sets out drastically different visions for science education, heralding change from widespread teacher-centred pedagogies to more student-centred approaches, where students are provided with opportunities to engage in meaningful hand-on activities (Ministry of Education [MOE], 2019). Teachers are to "develop learner autonomy so that learners can take ownership of their learning" (MOE 2019 p. xiii). This envisages fundamental change in teaching practice and thus has implications for teacher professional learning. However, the outcomes of curriculum reforms are often disappointing as

workloads and pressure to cover content undermine changes in pedagogical approach (Engeström, 2008; Luttenberg et al., 2013). This is particularly the case in the African continent where curriculum reforms are frequently frustrated by constraints in implementation support, large class sizes and limited resources (Nsengimana et al., 2020).

Aims

This paper thus explores science teacher professional learning and practice change in the context of curriculum reform Ghana. Rather than focusing on known challenges, it reports a collaborative interventionist approach through which teachers were able to enact significant changes in their practices, changes that have commonly proved elusive in similar contexts, and which participants themselves initially deem unfeasible.

The study is the first to use Change Laboratory approach in Ghana and was aimed to facilitate science teacher learning and improving their practice towards a student-centred teaching approach. The main research question was: how can historical and systemic barriers to pedagogic change be overcome in the context of science curriculum reform in Ghana? The specific question for this presentation is how do teachers develop and manifest agency in implementing the new science curriculum?

Conceptual framework

The conceptual framework used in the study is Transformative Agency by Double Stimulation (TADS) (Sannino, 2015). TADS is a process whereby people take wilful or volitional action to change their situation when faced with conflict of motive. Sannino (2022) extended her idea of TADS by using a metaphor of warping, a situation where anchors are pulled on the ground to move a vessel from a problem area, where it is stuck or otherwise unable to move in the desired direction. According to Sannino (2022), the metaphor of warping illustrates how change can be collectively achieved in the mist of difficulties, helping in the understanding of collective transformative agency.

Methods

Over three months, six Change Laboratory sessions were conducted plus two interviews with each teacher, six focus groups with students and 18 lesson observations.

Results

Analysis of data revealed significant transformation of participating teachers' practices, with several aspects of student-centred teaching previously considered impossible becoming viable features of classroom practice. Teachers' practices changed in four key areas that strengthens the student-centred approach: use of questions, assessment, teaching beyond the classroom, and designing a range of activities. Changes that were initially seen by participants as impossible became viable as the Change Laboratory helped teachers change their perception of what was expected of them in the new curriculum and how they could achieve that despite challenging conditions.

The teachers agentially transformed their situation during the Change Laboratory session.

Transformative Agency by Double Stimulation (TADS) was understood as both the means and outcome of the expansive learning (Sannino, 2022). In this presentation I will trace how the transformation of the participants' activity system was made possible by use of Sannino's (2015) model of Transformative Agency Double Stimulation (TADS). Specifically, it will draw on her recent idea of warping, in which kedge anchors or forward anchors, are used to move when people are otherwise stuck (Sannino, 2022).

The participants in the study were stuck with their conventional pattern of teaching, feeling that it was impossible to transcend the status quo where classroom activities were dominated by teachers with students as passive recipients of knowledge. Throughout the Change Laboratory sessions, the participants explored, expanded, and implemented different ideas that functioned as kedge anchors and proved instrumental in supporting the teachers' transformative actions (Sannino, 2022). Some of these anchors were concrete actions or practices that they developed, while others were statements that changed the direction of their actions and thinking. Examples of these kedge anchors include improvisation, designing lesson plan templates and Collaborative learning activities.

Conclusions

It was concluded that forward anchoring was made possible through the social interactions in the Change Laboratory where each individual teacher made personal sense of the conversation and experimented those ideas in the materiality of the problem situation (Sannino, 2022).

Planned interaction

It is planned that participants will be engaged in interactions through a set of prompted questions.

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91 Leadership and Learning for the Development of Teachers' Professional Digital Competence (LeadDig)

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Presentation: Symposium (90 minutes)

Theme: Dealing with technology

Keywords: Cultural Historical Activity Theory Teachers professional development Digital competence

SHORT ABSTRACT

The underlying idea for the research project (2023-2027) funded by the Norwegian Research Council, which will be the focus of our presentations, is to develop schools that learn by focusing on teachers' professional digital competence to enhance the pupils' learning environment and learning in six schools. One of our intentions is to focus on the professional learning of school leaders—both principals and middle leaders—and on their ability to enhance teachers' professional digital competence (PDC) for their teaching, which is expected, in turn, to contribute to pupils' learning. With our focus on both principals and middle leaders, the responsibility for school-based development can be distributed among the school leaders. Our idea is based on the premise that an entire school would work towards a common object using developmental work research design (DWR), which is a "formative intervention" (Engeström & Sannino, 2010) methodology developed within the cultural-historical activity theory (CHAT). Research has found that a collective object that everyone in a school is aware of and understands the importance of acting upon is the reason why school-based development can be successful (Postholm, 2018; Timperley et al., 2007). We are in our first year (2023-2024) out of four in the project, and we are actively involved with the core school, comprising 11 teachers and two leaders. At the school, a resource teacher also serves as a facilitator in the teachers' professional development. The project encompasses all teachers and, consequently, all subjects; however, mathematics holds a particularly central role.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

The start-up phase in a DWR project.

May Britt Postholm, Norwegian University of Science and Technology

Gro Marte Strand, Norwegian University of Science and Technology

The aim of the presentation is to delineate how the start-up phase can become a foundation for further development in a school-based development project. The teachers at the core school got the opportunity to identify what they really wanted to focus on in their development work to enhance their professional digital competence. The deliberate pace at the project's outset aimed to foster ownership and align the work with teachers' perceived development needs. Throughout this initial phase, researchers used Engeström's expansive learning cycle (2001) as a guide, with particular emphasis on stage 2 to anchor the processes at the school. The teachers were directed to observe

their own practices to gain a deeper understanding of their actions in the classroom, and they, furthermore, were expected to recognize areas of challenge in their teaching that could be targeted for the improvement of their practices. Through dialogues within the collegium, teachers and leaders collaboratively formulated the following object by the end of the first semester: Enhancing learning through collaborative use of digital tools. However, interviews with teachers in January indicate that not all teachers identify with the object, and that the process of creating a joint object needs to be followed up.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

The start-up phase in a DWR project.

May Britt Postholm, Norwegian University of Science and Technology

Gro Marte Strand, Norwegian University of Science and Technology

Background

Researchers have long recognized that the professional development of teachers is essential to change classroom practice, schools, and ultimately the learning outcomes of pupils (Borko, 2004). This perspective on professional learning emphasizes the school as the most important learning environment (Vescio et al., 2008). The research study that this presentation represents was conducted within the frame of Cultural Historical Activity Theory (CHAT), and the research question was the following: *How can the start-up phase in DWR-project function as a foundation and motivation for further development?* Based on Vygotsky's theory (Wertsch, 1981), CHAT was developed by Leontèv (1978, 1981) and emphasizes development and learning in social settings. Leontèv (1981) stated that 'the object is the true motive', meaning that a collective motive is embedded in the object of the work. In school, teachers can collectively develop their practice towards a common object.

Aim

The development work in this start-up phase was structured by following a step-by-step process. Throughout this initial phase, researchers used Engeström's expansive learning cycle (2001) as a guide, with particular emphasis on stage 2 to anchor the processes at the school. Thus, the teachers at the core school got the opportunity to identify what they really wanted to focus on in their development work to enhance their professional digital competence. First each individual teacher should observe their own teaching to be aware of their own practice focusing on the use of digital tools to recognize areas of challenge in their teaching. Then each teacher should present for the other teachers their need for development, and next together agree on an object to act on in the whole collegium. They ended up by the following object by the end of the first semester: Enhancing learning through collaborative use of digital tools. The intention of the current study is to understand the how the start-up phase focusing on developing a joint object, can influence the teachers' motivation and become a foundation for development in the school.

The concept of expansive learning is central in CHAT and is related to creative processes, indicating that teachers in a collective community can see possibilities and create something new 'that is not yet there' (Engeström & Sannino 2010, p. 2). With this object to act on, the teachers were in their initialization phase of the development of a new practice. They wanted the pupils to collaborate when for instance using digital tools in their learning activities. The teachers should also collaborate

by observing each other's teaching and analyzing it afterwards to find out if they were on their track towards the object.

Method

During this start-up phase the researchers had some seminars in the whole school community presenting CHAT and research on teachers learning to ground the development processes in research. During these lectures the researchers also invited the teachers into dialogues to try to understand their perspective and to adapt further development of a joint understanding between practitioners and researchers of the processes so far.

The researchers documented logbook entries derived from these seminars and additionally, in January, organized two focus group interviews (Chrzanowska, 2002) with teachers to gain insights into their experiences during the initial phase. One focus group comprised three teachers from 1st to 4th grade, while the other included two teachers from 5th to 7th grade.

Results

The findings indicate that teachers in 5th to 7th grade generally view the process leading to the creation of the object as positive. However, one teacher expresses reservations, stating, "We ended up with an object suddenly, but I am not certain that all teachers resonate with it." Despite this, overall, they perceive the process as beneficial and anticipate discovering new possibilities for development. They also believe they have, to some extent, been able to influence the process themselves, fostering a sense of ownership in their work. Conversely, the other group of teachers holds a different perspective. They believe that the current object does not address their needs for development. One teacher proposes an alternative: "To utilize digital tools to tailor teaching to individual students." Additionally, they express a willingness to voice their opinions in any potential future processes.

Conclusion

In a DWR project, development and research are intricately connected. Fortunately, we initiated dialogues with teachers to collect their opinions. The findings from this research underscore the significance of conscientiously tracking the process related to the object and dedicating more time to ensure that teachers truly perceive the process as guided by their developmental needs.

Interaction with participants

The discussion will center around how the initial phase of a DWR project can serve as the groundwork and motivation for further development.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

How do teachers use and how they reason for their use of digital tools in mathematics?

Olav Dalsegg Tokle, Norwegian Centre for Mathematics Education, NTNU

Ingunn Valbekmo, Norwegian Centre for Mathematics Education, NTNU

Bård Vinje, Norwegian Centre for Mathematics Education, NTNU

Digital tools have become an increasingly bigger part of teaching and learning mathematics in Norwegian schools during the last few years. Based on two group interviews with five teachers from the core school, we investigate how they reason for their choices according to which digital tools they choose in their teaching.

To analyze the interviews, we used a framework for PDC (2017) and the SAMR-model (2010) to understand how the teachers' reason for the digital tools they use in mathematical teaching. Our

preliminary analysis indicates that the use of digital tools is not based on arguments connected to mathematics as a subject or pedagogical and didactical perspectives. There are especially three moments from the interviews that support our statement: According to the teachers, digital tools are mainly used for drill exercises, they use digital tools to motivate pupils to work on tasks, and they say that fancy stuff (gamification) not connected to mathematics, dominate the mathematical content in some digital tools.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

How do teachers use and how they reason for their use of digital tools in mathematics?

Olav Dalsegg Tokle, Norwegian Centre for Mathematics Education, NTNU

Ingunn Valbekmo, Norwegian Centre for Mathematics Education, NTNU

Bård Vinje, Norwegian Centre for Mathematics Education, NTNU

Background

Norwegian schools have undergone major digitalization over the past 20 years. Digital competence was introduced as a basic skill in the National Curriculum in 2006 (Kunnskapsdepartementet, 2006; Utdanningsdirektoratet, 2019). The basic skills are defined as necessary tools for learning and development across all subjects, as stated in the Framework for basic skills (Utdanningsdirektoratet, 2017).

The framework for teachers' Professional Digital Competence (PDC) (Kelentrić et al., 2017), provides a structured approach to development in educational settings.

New research shows that teachers report their digital competence as average or high (Munthe et al., 2022). Although, the same research shows that digital tools are used in unconstructive ways, or that both teachers and pupils may have an uncritical understanding that digital tools themselves lead to better learning. Findings from other studies show that classrooms where pupils have their own digital device (about 90 percent of Norwegian schools) are dominated by individual work and less collaborative learning (Skjermbrukutvalget, 2023).

Munthe et al. (2022) point out that further research is needed to gain insight into the educational practice and use of digital tools, including teachers' use of digital teaching aids and a critical assessment of the tools available on the market.

Aim

In the LeadDig project, CHAT (Engeström, 2001) is used to develop a common shared object regarding the use of digital tools in all subjects in a Norwegian primary school, and particularly in mathematics. The shared object after the first semester is: Enhancing learning through collaborative use of digital tools.

Through observations and analysis of teaching, interviews, and workshops with the teachers we aim to answer the following research question: *How do teachers use digital tools and how do they reason for their use in mathematics?*

Method

During the first meeting with the teachers at the core school, we observed teaching in different subjects in all classrooms during one day in August 2023. In January 2024 two focus group interviews (Chrzanowska, 2002) were conducted with five teachers at the core school. The aim of the interviews was to get insight into which digital tools the teachers use, and why they use them. Teachers from

grade 1, 2, and 3 participated in the first interview, and the teachers from grade 5 to 7 in the second interview.

The teachers' use of digital tools in mathematics were analyzed with the SAMR-model (Substitution, Augmentation, Modification, and Redefinition) (Puentedura, 2010), based on the field notes from the observations and the interviews with the teachers. The four levels in the SAMR-model were used to dig deeper into how the teachers select, use, and evaluate the tools they choose for their teaching. The framework for PDC was used to analyze how the teachers argue for their use of digital tools. This framework consists of seven areas of competence to describe the teacher's professional digital competence (Kelentrić et al., 2017).

Results

The preliminary findings show that the teachers use many different digital tools in mathematics teaching, for example digital textbooks, multimedia, and games. According to Munthe et al. (2022) the use of digital tools could have a positive effect on the pupils learning, but this effect depends on how the teachers use the digital tools. Based on our observations in classrooms and interviews, the use of digital tools is mainly on the S-level and in some cases A-level in the SAMR-model (Puentedura, 2010). This means that the digital tools are only a substitute for analog mediating artifacts (Engeström, 2001), and they do not necessarily improve teaching practice. The teachers say that digital tools are mainly used for drill exercises, which could have been done on paper.

When the teachers are asked to reason for their use of digital tools, the reasoning is not connected to mathematics as a subject or pedagogical and didactical perspectives. They say that digital tools improve the pupils' motivation to work on tasks and contributes to a more varied teaching. The teachers think that the pupils like to work digitally, but teachers are afraid that fancy stuff (gamification) not connected to mathematics, dominates the mathematical content in some digital tools. In this way, the use of digital tools might not contribute to more learning.

Conclusion

So far, the study shows that teachers use different digital tools in their mathematics teaching, but they do not reflect much on why they use the different tools and what the tools offers, beside increased motivation and variation. This might indicate a lack of PDC connected to mathematics.

Interactions with participants

The presentation will include a discussion about the use of digital tools and possibilities for enhanced learning.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Anne Berit Emstad, Norwegian University of Science and Technology

Kåre Hauge, Norwegian University of Science and Technology

This presentation will address the role of school leaders in an ongoing research and development project. More specifically, how managers themselves work with their own development to enable teachers' professional development. If a school wants to work to promote teachers' professional development, such processes must be operationalized and managed. This work should largely be led by school leaders, and in this project, there is great variation between the different school leaders in terms of experience in leading development processes and competence and knowledge of how development processes can be managed. In the project, there is an intention of development and learning for all participants at all levels, both teachers, school leaders and researchers. Here we want

to take a closer look at how leaders themselves can work on their own development in order to lead teachers' professional development. A focus on how to behave and how to act as learning leaders, how to get from stories / narratives to action and what it is that leaders choose to promote in the work to develop teachers' professional learning. In this work, it is important to explore how we as researchers / externals can contribute as support / mediating artefacts, how through conversations, observations and participation in meetings - in collaboration with the leaders, can contribute to promoting their learning.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

How to be learning leaders in a DWR project.

Anne Berit Emstad, Norwegian University of Science and Technology

Kåre Hauge, Norwegian University of Science and Technology

Background

In the Norwegian core curriculum, it is stated that the school leadership must lead the educational and professional collaboration between the teachers and contribute to developing a stable and positive environment (ref). School leaders may influence the quality of teaching and learning in classrooms indirectly via the teaching staff at their schools (Leithwood et al., 2019). Still, leading the school's development work can be demanding. Even if a school leader has good knowledge of what constitutes good quality in the school, what is important and why it is important, they struggle to lead the processes and follow up on the work (Robinson, 2020). The literature shows that an important factor for leadership in improvement work is the trust that teachers have in their leaders, as it affects their attitudes and behavior towards the instructions given (Bryk & Schneider, 2002). In this formative intervention study, the leaders are introduced to a basic knowledge base. The knowledge base builds on Robinson's theory (2020) of learning leadership which emphasizes that school leaders must build trusting relationships with teachers, parents, pupils, and other leaders, while at the same time ensuring that the improvement work is carried out.

Aim

The overall intention with the research project (2023-2027) is to focus on the professional learning of school leaders and on their ability to enhance teachers' professional digital competence (PDC). The improvement work will largely be led by school leaders. In this project there exists significant variation among the school leaders in terms of experience in guiding development processes and their competence and knowledge in managing such processes. To support this, the primary aim of this intervention study is to contribute to the professional growth of the leaders. The intervention seeks to achieve this by introducing the theory of learning leadership and supporting the leaders in evolving as learning leaders while simultaneously guiding the development efforts within schools to enhance teachers' PDC. Emphasis is placed on delineating how to behave and act as learning leaders, transitioning from stories/narratives to action, and elucidating the aspects leaders choose to emphasize in fostering teachers' professional learning.

Additionally, the study seeks to explore how researchers and external participants can contribute as support by presenting mediating artefacts, engaging in conversations, making observations, and participating in meetings in collaboration with the leaders. This collaborative effort aims to contribute to the promotion of the leaders' professional learning.

The key question guiding this intervention study is: How can the school leaders create motivation and coherence in the improvement work, in ways that challenge the teachers' belief in current achievements and contribute to the improvement of practice that is important for the pupil's learning and development?

Method

In the start-up phase of the project, school leaders attended a seminar where they were introduced to a theoretical knowledge base. As a follow-up to this, the leaders were asked to identify individual areas within their leadership they wanted to improve and develop. To examine and follow up the school leaders, various data sources were used. The project has so far been ongoing for six months, and until now the data sources have been: observations of leaders in meetings with teachers and meetings where researchers have had feedback loops to the leaders.

Result

Having been present at the school in the start-up phase, it is clear that there is a good relationship between the leaders and the teachers. So far, the leaders are concerned with preserving and maintaining a good relationship with the teachers. It has also led to the leader's reluctance to go in-depth on, for example, challenges linked to pupils' learning and the use of digital tools. Observations show that a large part of the leaders' feedback to the teachers is at the level of "headings" and in general phrases, and that direct questions relating to pupils' learning and development are largely absent.

Conclusion

In the further work, in collaboration with the leaders, we will seek to find approaches that can support the leaders in becoming clearer in their communication with the teachers, such as: 1) practice clarifying their views, 2) dare to move into unpleasant situations, 3) leading processes where teachers are more able to go into depth about their teaching and how their teaching and use of digital tools can enhance pupils' learning.

Interactions with the participants

The presentation will include a discussion about the challenges of building/maintaining trust at the same time as leading improvement work.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

The resource teacher's role in the development of teachers' professional digital competence.

Mari-Ann Letnes, Norwegian University of Science and Technology

Keyword: ProfessionalDigitalCompetence, ResourceTeacher, CommunityLearning

In the context of the LeadDig project, this presentation delves into the experiences and contributions of a resource teacher in enhancing professional digital competence among their colleagues teaching staff. Drawing on initial interviews and reflections from the project's first year, we explore the multifaceted role of the resource teacher in a Norwegian school environment.

We discuss how resource teachers navigate their relationships with school leadership and colleagues, highlighting the communication and feedback processes essential for the project's progression. A significant focus is placed on the challenges faced and strategies employed in supporting teachers' integration of digital tools like iPads in their teaching.

Furthermore, we explore the impact of the resource teacher's role not only on their own professional development, particularly in enhancing digital competence, but also on their assistance in advancing

their colleagues' development in this area. The presentation showcases examples, illustrating the dynamic interaction within the professional community. Insights into the support and resources provided by school leadership, as well as areas requiring further support, are also discussed. This insight into the resource teacher's role offers valuable awareness into the practical aspects of fostering professional digital competence, contributing to a broader understanding of school-based development.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

The resource teacher's role in the development of teachers' professional digital competence.

Mari-Ann Letnes, Norwegian University of Science and Technology

Background

In Norway, digital competence has risen to a central role in primary and secondary education, now viewed as basic skills. This underscores the growing significance of digital proficiency in today's education. The concept of Professional Digital Competence (PDC) mirrors this trend, particularly since digital skills became one of the key competencies in the 2006 National Curriculum (Kunnskapsdepartementet, 2006). A specific framework for PDC, established in 2017 (Kelentrić et al., 2017), provides educators with a structured approach for its development in educational settings. Introducing technology or offering short individual courses alone does not foster organizational development. Research underscores the importance of involving the entire organization to cultivate collective responsibility and a shared commitment to educational innovation (Kruse et al., 1994; Newmann, 1994; Robinson & Timperley, 2007). The research project LeadDig, that this presentation is a part of, embraces this approach, aiming to embed digital competence through comprehensive, organization-wide initiatives.

Aims

The overarching aim of the LeadDig project is to foster 'learning schools' by concentrating on the development of PDC to enhance both the teaching environment and pupils learning in six collaborative schools. This initiative aims to delve into the professional learning of school leaders, including both principals and middle leaders, focusing on their capacity to augment teachers' PDC. This enhancement of PDC is anticipated to subsequently elevate pupils' learning experiences. With this project we seek to distribute the responsibility of school-based development across different leadership roles. By doing so, we aim to alleviate the burdens traditionally associated with leading teachers' professional development and to promote a more collaborative and distributed approach to educational leadership and development. Within this framework, the specific role of the resource teacher is examined as a critical link in achieving these goals. Their position as intermediaries becomes a focal point for understanding how PDC can be developed and implemented across the school community.

Methods

Central to our study's methodology is the concept that the entire school collaborates towards a unified objective through Developmental Work Research Design (DWR). This method, a formative intervention within CHAT as described by Engeström and Sannino (2010) facilitates a cohesive approach to achieving common goals in educational development. This theoretical approach is particularly relevant in understanding the complex dynamics of educational settings and the systemic nature of implementing PDC. The research question of this presentation is: *How does the resource*

teacher perceive what professional digital competence is and how to facilitate colleagues' development of professional digital competence?

Through exploring this question, our goal is to illuminate the role of the resource teacher as a crucial mediator and facilitator in integrating digital competence in schools. This includes insights from interviews with school leadership, resource teachers and teachers, providing a comprehensive view that encompasses both the individual capabilities of resource teachers and their pivotal role in broader institutional change and development.

This exploration is key to understanding how resource teachers navigate the space between school leadership and the professional community, focusing on their sense of empowerment and perceptions of colleagues' motivation.

Our analysis centres on applying Cultural-Historical Activity Theory (CHAT), offering a framework (Alasuutari, 1996) to comprehend resource teachers as change agents in schools. CHAT highlights the role of social interactions and cultural context in learning. This approach aids in understanding how resource teachers drive transformative learning and manage the complexities of their role.

Results

Preliminary findings reveal that resource teachers are crucial in mediating the directives from school leadership and their practical implementation in classrooms. They see themselves as facilitators in their colleagues' development of PDC, with a significant emphasis on empowerment by leadership. Within this framework, the resource teacher's role as a critical link in achieving these goals is central. Beyond bridging the gap between colleagues and leadership, they play a key role in identifying and leveraging the strengths of fellow teachers, facilitating the sharing of experiences in collective pedagogical settings. This approach is crucial for the successful integration of teachers' PDC, requiring a collaborative and institutional effort to translate organizational goals into practical classroom strategies.

In this dynamic educational context, the resource teacher acts as a central facilitator for collective development, bridging the flow of knowledge and strategies between leadership and staff, thereby ensuring a collaborative and inclusive approach to PDC development of the entire teaching community.

Conclusions

Resource teachers emerge as pivotal figures in bridging the gap between administrative vision and actual professional development concerning digital competence. Their role is important in interpreting and implementing the PDC framework and contributing significantly to the broader goals of educational transformation.

Interaction with Participants

The presentation will feature interactive discussions about the resource teacher's role in digital competence, aiming to deepen understanding of its challenges and opportunities in education.

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93 Enhancing co-development in virtual environment

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: co-development Change Dialogue virtual environment

SHORT ABSTRACT

In today's rapidly evolving operational environment, organizations rely on co-configuration to create value. Services are produced and developed through a collaborative relationship between the service provider and the customer. We refer this type of co-configurational activity as co-development. Co-development enables the creation of adaptable services based on customer needs. The aim of this study is to investigate virtual co-development between service provider and their customers. Therefore, we arranged CHAT-based virtual Development Dialogue workshops for a B2B marketing company that was interested to improve their collaboration, particularly steering group practices, with three client companies. We utilized theory-informed content analysis to examine Change Dialogue workshop discussions and objects of talk within these discussions. We found that discussion in the workshop was mainly facilitator-directed and related to three different objects: 1) Use of the digital platform 2) Change dialogue script 2) Work and its development. The study highlights that virtual environments may pose challenges to co-development, as they tend to emphasize the facilitator's role rather than discussions between the participants. It also shows that the technical use of virtual tools tends to become an object of talk, and as such, takes away time from the matter to be developed. This study suggests that to overcome these challenges, facilitators should pay attention to fostering multi-voiced discussions between the participants.

EXTENDED SUMMARY

Background

Learning and development have become increasingly crucial as organizations confront complex and interconnected challenges in constantly transforming operational environment (e.g Engeström & Sannino, 2021; Ivaldi et al., 2022). In such environment, the value is created more often in collaborative partnerships with customers (Clauß et al., 2014)

Developing partnerships is part of the continuum that Victor & Boynton (1998) describe as a historical trajectory of forms of work; from craft work, through different forms of mass-production to co-configuration. In co-configuration, services are produced and developed in a collaborative relationship between the service provider and the customer. These kinds of collaborative partnerships enable adaptable services, which are continuously developed based on the customer's needs. We refer to service provider's and their customer's co-configurational activity as "co-development" (Virkkunen and Schaupp, 2011).

Aims

Co-development cannot be achieved solely by bringing together individuals from different organizations in the same virtual space. To study how virtual environments enable co-development between service provider and their customers, we arranged the CHAT-based Change Dialogue workshops (Heikkilä et al., 2021; cf. Mott, 1992; Heikkilä & Seppänen, 2014).

The aim of this study is to investigate how Change Dialogue can facilitate virtual co-development among the service provider and their customer. More specifically we are interested in interaction and the objects of talk during the virtual workshops.

Methods

The data were drawn from a Change Dialogue process held in 2022. The case company, a service provider, offered B2B marketing communication services. It wanted to improve its collaboration, particularly its steering group practices, with three client companies. The steering group was an established practice through which the collaboration between the service provider and the customer was organized. The development process was conducted virtually, and it utilized the Change Dialogue method.

The Change Dialogue process consisted of three workshops, with customers participating in the second one. In the first workshop, the representatives of the service provider formed an initial view of developmental phase of the steering group practice and identified needs for the near future, using the development chart as a tool (Ahonen et al., 2020; Nykänen et al., 2022). During the second workshop, the customers had the opportunity to reflect and question the service provider's initial view. They also generated developmental experiments with service provider to renew their collaboration in steering groups. The third session was dedicated to the evaluation of these experiments.

As we were interested in virtual co-development, the transcriptions of the second workshop formed our data. The workshop had a total 11 participants: representatives of the service provider (n=8) and representatives of three customer organizations (n=3). The workshop was facilitated by the researchers and took place via the Zoom video meeting application. In addition, the Flinga Whiteboard was utilized.

We used theory-informed content analysis (Silverman, 2010; Falloon, 2011) to identify the objects of talk during the workshop discussion and classified each episode of talk based on their object into the following categories: 1) Use of the digital platform 2) Change dialogue script 2) Work and its development 4) Other. Some speaking turns contained two different objects of talk and they were classified accordingly.

Results

Although the Change Dialogue was intended to enhance co-development, the discussion in workshops was mainly facilitator-directed. It was related on three separate objects of talk: 1) 'The use of digital platform' consisted of instructions and questions, primarily focused on technical use of the digital platform; 2) 'The Change Dialogue Script' was mainly facilitator-driven with facilitators explaining the script or manifesting it through their facilitation acts. 3) 'The work and its development' focused topically into the steering group practices and their development. In that object, the predominant structure of discussion was the question-and-answer. This meant that facilitator asked a question and service provider, customer or both answered a question. Only couple of episodes broke that dominant structure - for example, group work initiated the discussion between

participants. In our presentation, we will provide examples and elaborate on these objects of talk in relation to virtual co-development.

Conclusions

Co-development requires that the participants, in our case service provider and customers, reflect each other's ideas and develop them further. This study shows that the virtual environment may challenge this. First, it seems to emphasize facilitator's role in interaction rather than interaction between the participants (also Vanharanta, 2022). Secondly, virtual tools and their use become the object of talk, which take time from speech related to the processing of the matter to be developed. To overcome these challenges both the facilitation method and facilitator's actions play a crucial role, and they should encourage participants to multi-voiced discussions and co-development (Virkkunen & Newnham, 2013).

How interaction with the participants is planned

We will leave 10 minutes for discussion in the end of the presentation. The discussion is facilitated by involving participants with pre-planned questions.

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96 Activity Based Instructional Design: Using CHAT to design online courses

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Presentation: Workshop (90 minutes)

Theme: Dealing with technology

Keywords: Activity Theory course design online education Bringing together theory and practice

SHORT ABSTRACT

The aim of this workshop is to provide participants with hands-on experience in the basics of online course design using a CHAT based framework. Activity Based Instructional Design (ABID) model provides a naturally modular, student centered, and theory informed template which reconceptualises the online course as a series of interconnected and interrelated activities that provides the learner the set of psychological tools needed to achieve the learning objectives of the course. Courses are designed top-down working from course objectives (and associated assessment) to modules to the activities that students undertake. However, courses need also to be analysed from the students' perspective. The student undertakes a sequence of activities, here operationalised as what the student does in an online session. ABID provides a framework for determining whether the course, modules and activities are well-designed, in that they minimise contradictions.

In this Vygotskian framework two crucial ideas emerge: it is the *learning activity* and not the software that is the unit of analysis; and the learning outcome of each activity provides the psychological tools used by a learner in subsequent activities. We employ Engeström's cultural-historical activity theory as a framework for the design of the online course. Because ABID is based on a well-developed learning theory it enables us to make clear proscriptions to achieve better student learning.

The workshop will illustrate this design process using an online introductory statistics course at the three levels of course, module and activity, and then participants will apply the model to their own courses.

EXTENDED SUMMARY

Aims

The workshop aims to introduce a model of online course design which we have developed, informed by theory and practice. We will develop an understanding of the principles and practice for designing a course using the Activity-Based Instructional Design (ABID) model. This will be done by concentrating on the four key components of ABID: identifying course objectives, planning modules to achieve those objectives, determining the skills/knowledge needed for each module, and creating learning activities that teach learners those skills/knowledge.

Background

During the explosion of online teaching during COVID-19, the move to online course design has often been technology driven rather than focussing on student learning (Maatuk et al., 2022). We cannot develop effective online learning environments by merely adapting face-to-face strategies and

practices, but rather we need a theory-based design framework to develop online courses from the ground up. In an extensive review of research in instructional design and technology, Bodily, Leary, and West (2019) concluded: “we also found that the scholarship in our field is very technology-centric, and our field could benefit from a greater balance of papers studying theory and design frameworks” (p. 78). This paper responds to this *cri de coeur* by grounding course design in a rigorous theoretical framework from Vygotsky as developed in cultural-historical activity theory (CHAT), to create a design model for online courses.

Outline of Activity Based Instructional Design

Designing an online course is fundamentally different than designing a face-to-face one. In this workshop you will be introduced to and then use a series of tools specifically designed for online course design. Central to this approach is a firm grounding in learning theory which provides a wholistic and general model for course design. Our goal is provide you with a new set of analytic skills which you can add to your design quiver.

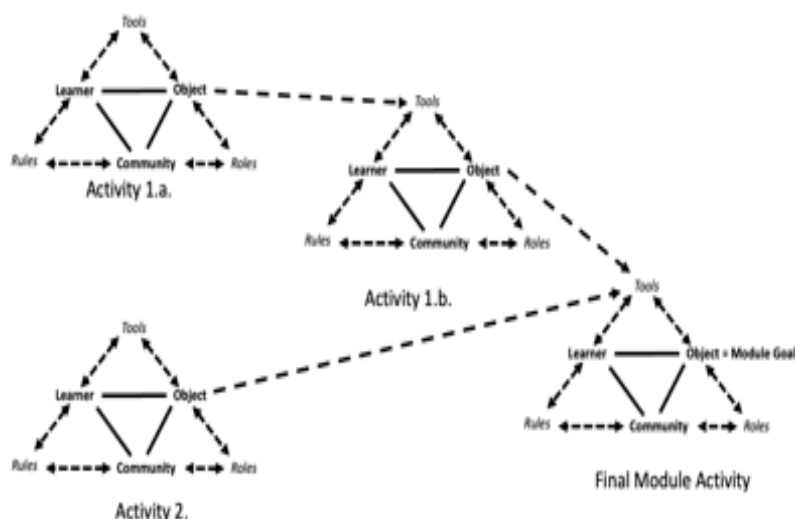
In this workshop we will describe and then work through the basics of ABID (Activity Based Instructional Design), which is a design model for online courses grounded in the learning theory of Vygotsky (1978, 1999) and his student Leontiev (1979). We will briefly sketch out ABID and then lead you through carrying out each step of ABID.

In ABID, a course is designed at three levels:

- The Course, which consists of a series of inter-connected
- Modules, which in turn consist of a set of inter-connected
- Activities, in which the learners engage.

Specifically, ABID proposes that a course is well-designed (Park & Bracewell, 2008) when it meets the criteria for all three levels:

For example, in a cohesive module each activity produces an object which becomes a tool in subsequent activities until the module goal is reached:



N.B. An early activity might also be required to teach learners Rules or Roles that they have not yet mastered

Figure 1: A cohesive Module



Workshop activities

In this workshop we will lead you through the key tasks involved in (re)designing a course using ABID.

You will:

- identify a course that you are (or will be) teaching that you would like to redesign;
- identify the objectives and what skills/knowledge your students lack;
- take one module and identify what the learner must learn to achieve its goal; and
- sketch out one activity in that module that will enable the learner to achieve that object.

We will use Engeström’s triangle (2014), based on Vygotsky’s (1978, 1999) learning model, to guide our discussion and tasks. In the activity triangle, the learner, the object to be mastered, and the community of learners are mediated by:

- The **Tools** – that learners use to achieve the object, including software, apps etc.
- The **Rules** – that learners use to interact with each other, including netiquette and instructions
- The **Roles** – that learners and instructor take on in order to complete the activity

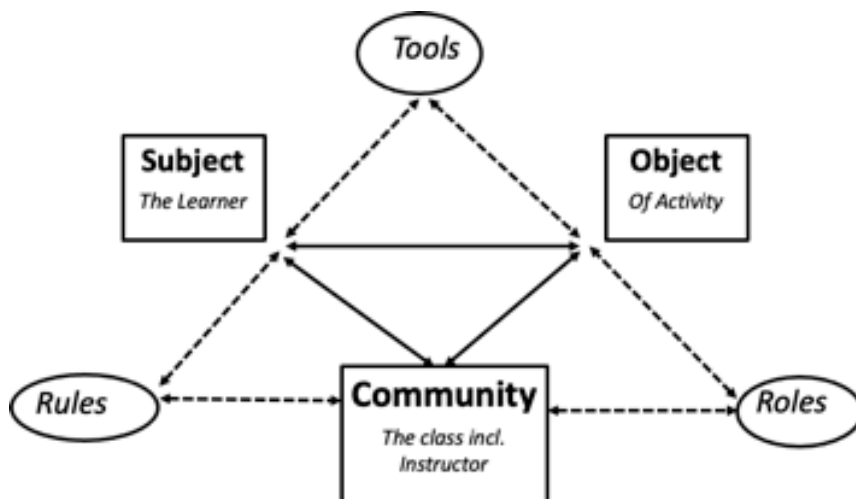
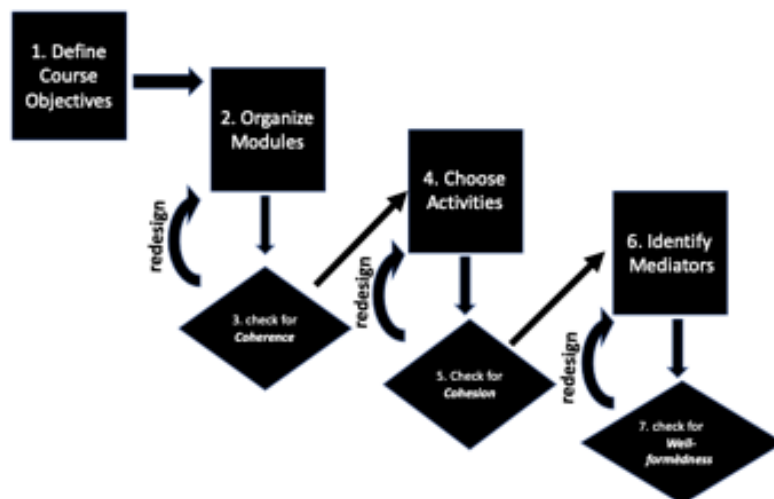


Figure 2: A well-formed Activity



This is framed within the ABID sequence for designing a course:

Figure 3: *Sequence for designing a course*



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101 Promoting indigenous play pedagogy in kindergarten education: influence on teachers and learners

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: indigenous play imagination professional development

SHORT ABSTRACT

This presentation is about the development and implementation of a professional development programme for teachers of the kindergarten curriculum (4-5 years) in Ghana to implement an indigenous play-based pedagogy. Kindergarten teachers in Ghana have little experience and meagre training in implementing a play-based pedagogy as recommended in the 2004 national curriculum. An indigenous play-based kindergarten teacher development programme, grounded in a cultural-historical theory was developed and successfully used to improve participating teachers' knowledge, skills, attitudes, and practices during the first year of its implementation. This presentation focuses on how the eight (8) participating kindergarten teachers with varying years of kindergarten teaching in five different school contexts implemented an indigenous play-based pedagogy (IPBP). The development of the IPBP followed three phases, namely: (1) diagnostic (pre-intervention); (2) intervention (capacity building); and (3) post-intervention. Qualitative data collected through classroom observation, interviews, photographs, participating teachers' reflective journals and an evaluation questionnaire revealed a positive influence of this programme on classroom practices and learners' active participation in learning. Particularly, learners demonstrated creativity, imagination, and actively constructed knowledge. Teachers became more reflective of their practices and open to learners' contributions to the teaching and learning process. The essential components of the programme are described as a guide for teacher professional development for delivering indigenous play-based pedagogy (IPBP) in early childhood education.

EXTENDED SUMMARY

Background

The 2004 KG curriculum, which focused on six learning areas (language and literacy, environmental studies, numeracy, creative activities, music, dance and drama and physical development), recommends facilitation of children's learning through play-based pedagogy. This recommendation is viewed as an effort to reform preschool education in the kindergarten curriculum (4-5 years). However, to successfully implement this play-based curriculum in the classroom, it is essential to have teachers who possess the requisite content knowledge and pedagogical skills and are confident of their ability to guide and facilitate meaningful learning through play-based pedagogy in a familiar context. Research studies (Agbenyega & Klibthong, 2011; Buabeng-Adoh, 2012) and commissioned reports (Associates for Change, 2016; Ministry of Education, 2012) indicate that kindergarten teachers are ill-prepared to implement the recommended play-based pedagogy successfully (Ministry

of Education, 2012). Some of the reasons suggested for this unreadiness are the inadequate content coverage of play-based pedagogy at pre-service level (Associates for Change, 2016; Sofo, Thompson & Kanton, 2015; Tamanja, 2016) and the absence of continuing in-service professional development programmes to address some of the knowledge- and skills-related challenges. It is against this backdrop that an in-service professional development programme was developed to empower kindergarten teachers in the Ghanaian setting to use familiar indigenous play forms, including folk tales and games, to teach the kindergarten curriculum.

Aims

The study, therefore, aimed to determine how a professional development programme be used to enhance teachers' knowledge, attitudes and practices to implement an indigenous play-based pedagogy in the kindergarten classroom.

Methods

The research, a participatory action study, was conducted in five kindergarten schools in the New Juaben municipality in the eastern region of Ghana. The participants were eight kindergarten teachers who had between eight to 37 years of working with young children. The development of the IPBP followed three phases, namely: (1) diagnostic (pre-intervention); (2) intervention (capacity building); and (3) post-intervention. The participatory-bottom-up- approach to developing the IPBP commenced with an interview that gave the selected teachers the voice to articulate their understanding of play-based learning and their own training needs. Initial analysis from the interviews informed the activities of the second phase, which was the capacity-building workshops to expose teachers to the various activities that enhanced knowledgebase in using indigenous play forms and resources for facilitating the kindergarten curriculum implementation

Drawing on a cultural-historical theory (Fleer, 2011), the indigenous play-based pedagogy mainly employed Anansi stories (folktales) and other traditional play forms in teaching academic concepts and promoting creativity and imagination in learners. Data were generated from different sources and thematically analysed and results were categorised into themes and sub-themes.

Result

First, teachers' knowledge base in teaching curriculum concepts improved. The teachers employed the Anansi stories in teaching different concepts in different learning areas. Second, the classroom teaching/learning dynamics changed from teacher-centred approaches to child-led interactions. The teachers provided hands-on- child engaging activities for their learners while the teachers remained opened-minded to ideas and constructions that the learners brought into the lessons. Third, teacher-teacher collaboration was fostered. The teachers shared ideas and supported each other in organising resources and implementing the pedagogy. Finally, creativity in lesson presentations was promoted. The teachers used different spaces and resources in and around the school environment in engaging their learners in learning activities. This study contributes to the emerging cultural-historical studies on teachers' ability to teach academic parts of the curriculum through indigenous play-based pedagogy.

Conclusion

Through the implementation of the IPBP teachers' knowledge-base, attitudes, beliefs and pedagogical practices relating to play-based pedagogy were improved, and that resulted in promoting imagination, creativity and learners becoming active in constructing knowledge hence benefitting the participating schools and ultimately the education of the kindergarten children in Ghana.

Planned interaction with participants

Through think-pair share, the presenter will lead participants to discuss photographs showing the influence of the implementation of the IPBP on learners and teachers.

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107 Transformative perspectives in teacher education

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: Teacher Digital Competency/Identity Inclusive Education Cultural-Historical Theory Dealing with technology

SHORT ABSTRACT

This symposium offers an interdisciplinary exploration of transformative practices in teacher education (TE) through ethnography, cultural psychology, and pedagogic design principles rooted in Galperin's legacy.

The ethnographic lens reveals real-time challenges faced by teacher educators in implementing digital technology, emphasising the intersection of theory and practice.

In a qualitative case study at the Universidad del Desarrollo, the philosophical concept of unity of opposites is applied to comprehend transformations towards inclusion. This lens critically examines the interplay between protection and oppression, navigating the tensions between inclusion and exclusion.

The third lens focuses on pedagogic design principles for digital environments, drawing on Galperin's legacy. It outlines principles for teachers as contributors to the design of digital learning spaces, addressing the evolving role of educators in the digital era. This lens not only bridges theory and practice but also emphasises the importance of teachers actively shaping social practices within digital learning spaces to foster their digital identity and inclusiveness.

In summary, this symposium navigates the complexities of TE in the digital era by addressing the relationships between theory and practice, the challenges associated with technology, and the promotion of inclusiveness within social practices. Through these lenses, it aims to provide valuable insights for enhancing teacher education in the transformative landscape of the 21st century.

Each paper presentation is allocated 15 minutes, with an additional 10 minutes for interaction with the participants. Following the three presentations, the discussant will analyse each paper, for 10 minutes, before encouraging audiences to engage in the follow-up discussion.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Conceptualisations of teacher educators situated decision-making with technology: object, motive and orientation

Ann-Thérèse Arstorp

The expectations for implementing and using digital technology in teacher education (TE) has been high for the past decade, but research shows TE struggling with sufficiently adapting digital technology in its practice. To further understand this, an ethnographically inspired study was conducted in a Danish TE institution, with 132 hours of participant observations, interviews (N=19) and document analysis. This paper applies a combination of ethnography and abduction involving the continuous contrasting empirical data with theoretical concepts. Through this process the paper zooms in on the teaching practice in TE, applying primarily Leont'ev's theoretical concepts of object and motive to understand the in-situ orientations made by teacher educators teaching with digital technology. Through the observations it became clear that digital technology challenge TEds and press them for making on-the-spot-decisions when technology breaks down. These breakdowns give analytical access to a type of *orientation* and in-situ decision-making which cannot be analytically conceptualized solely by applying *object* and *motive*. *Orientation* in this context is to be understood as a direction, and a way of making actions meaningful and it allows for a deeper understanding of their decision-making and how digital technology can be counterproductive to the object, motive and orientation of the teacher.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Over the past decade a lot of political attention has been devoted to implementing digital technology into schools and teacher education (TE) in two of the most digitalized countries, Denmark and Norway (Blikstad-Balas, 2023; Erstad et al., 2021). The expectations have been high (Andreasen et al., 2022) but research has shown that the extent to which digital technology is used in schools is largely limited to writing and presenting (Blikstad-Balas & Klette, 2020). Also, TE struggles to address this sufficiently in its practice (Danish Technological Institute, 2012; Daus et al., 2019; Guðmundsdóttir & Hatlevik, 2018).

In order to understand this lack of technology implementation in TE's teaching practice, an ethnographically inspired study was conducted in a Danish TE institution (Arstorp, 2015). The study included participant observations (132 hrs of observations following 9 teacher educators (TEds)), individual and focus group interviews (N=19) and document analysis. Through methodologically applying a combination of ethnography and abduction (Bajc, 2012). Such an abductive research approach involves the empirical data to continuously be contrasted and contextualised with theoretical knowledge (Coffey & Atkinson, 1996) often contributing with new analytical and theoretical insights.

This paper zooms in on the actual teaching practice in TE and examines how Leont'ev's theoretical concepts allow for an analysis of the in-situ orientations made by TEds situated in a teaching practice with digital technology. It builds on a reading of Leont'ev *object* and *motive* as elements in a chain of interrelated concepts: need - object - motive - actions - operations (Leont'ev, 1981/2009; Leont'ev, 1978). Here the object reflects a type of conscious, meaningful goal for an activity to fulfil the initial need. And the motive is what stimulates the actions and gives them a direction towards the object.

Through the observations it became clear that digital technology challenged TEds and pressed them for making on-the-spot-decisions when technology broke down. One example is Mette (TEd), who was teaching children's reading development and had all the students engaged in the topic. Mette then wanted to show them a video of a school practice and everyone waited eagerly. Mette managed to show the video on the screen, but without sound. The observations showed Mette checking cables, searching on her computer screen without being able to fix the situation. She then continued without the video and managed to fix the sound in the break. Observations such as this exemplifies how TEd's need a plan B and are forced to reorientate themselves in the situation. They make visible a type of *orientation* and in-situ decision-making which cannot be analytically conceptualised solely by applying *object* and *motive*. *Orientation* in this context is to be understood as a direction, and a way of making actions meaningful. The concept of *orientation* allows for gaining analytical access going beyond Mette's object (delivering the best possible teaching practice) and her motive (of delivering the lesson as planned). This suggests an *orientation* towards maintaining the flow of the lesson but also of maintaining a position of being in control and being a role model with professional digital competence. As such, *orientation* allows us to understand what makes TEd's actions meaningful and it allows for a deeper understanding of their decision-making and how digital technology can be counterproductive to their object, motive and orientation.

To create interaction with the audience I intend to utilize response tools such as Mentimeter to actively involve the audience with questions or giving feedback and create a more active presentation with audience participation. Such live chat features can hopefully enrich the discussions throughout the presentation.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Borders and contradictions: unity of opposites as a dynamic core of inclusive transformations

Pilar Valenzuela Ramírez and Pina Marsico

In this contribution we explore the heuristic value of the philosophical notion of *unity of opposites* to understand transformations oriented towards inclusion in higher education. A qualitative case study conducted at the Univerisad del Desarrollo in Chile, where a formative intervention was carried out, is presented to discuss the results in the light of the concepts of semiotic borders and systemic contradictions. First, a theoretical understanding of the phenomenon of inclusive education is presented based on semiotic cultural psychology and cultural historical activity theory. Emphasis is placed on how the notion of unity of opposites used from both theoretical systems contributes to understand the paradoxical relationship between inclusion and exclusion, as well as the way in which diversities are treated as minorities and the subjects of inclusion as subjects of both protection and oppression. Secondly, the main results constructed through the formative intervention are presented and analysed from the concepts of borders, contradictions and expansive learning. We then discuss the epistemological relevance of the notion of unity of opposites to capture the totality and complexity of the phenomenon of inclusion in education. Finally, we will discuss the meeting and clashing points between the two theoretical approaches adopted and, in particular, the principles of tensegrity and dialectics. From this last point we will draw possible theoretical and methodological bridges between semiotic cultural psychology and the cultural-historical activity theory.



SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

The *unity of opposites* is a long-standing philosophical notion recognized in the West in the postulates of Heraclitus (Neels, 2018), as well as in the East in Lao-Tzu's approaches to the course of life (Butti, 2013). According to Jiang (2018), both philosophers agree with the notion of co-production and co-dependence of opposites and with the idea of unity from opposites (nothing is only one side of the whole).

The generative power of opposites, the idea of unity - or totality - from opposites, as well as their co-existence and co-determination, are taken as fundamental principles in two widely recognized theoretical systems in contemporary cultural psychology. On the one hand, from the semiotic cultural psychology (SCP) (Valsiner, 2014, Marsico et Varzi, 2016; Marsico & Tateo, 2017) the most basic process of meaning construction begins with a primary distinction within an undifferentiated flow of events, from which meanings are organized and given value. This distinction generates an inclusive separation, in which we create phenomena and at the same time create their opposites. In this way, a triadic unity is formed constituted by the created phenomenon, its opposite and the border that unites and at the same time separates both sides of the same unity. This edge between what is and what is not, is understood as a zone of tension in which opposing forces converge and provide the necessary tension for the systems of meanings to maintain their integrity. This has been called *Tensegrity* which refers to the dynamic principle of a tensioned system (Marsico & Tateo, 2017). On the other hand, from the cultural-historical activity theory (CHAT) is proposed that human beings organize their collective activity orienting themselves towards shared objects (Sannino & Engeström, 2018). These objects encapsulated internal contradictions that bring movement and direction to the system. Thus, the form that collective activities takes, emerges from the attempts to manoeuvre the tension produced from the internal contradictions of the object. These contradictions are systemic and cannot be directly observed. Instead, they are expressed in human experience in the form of paradoxes, dilemmas, conflicts, double binds (Engeström & Sannino, 2011). The principle at the basis of these movements is the *dialectical* relationship between opposites that form a unity.

From these theoretical perspectives, Valenzuela (2024) elaborated a theoretical understanding of educational inclusion as a sign that emerges from the opposite field of meanings of exclusion (non-exclusion), forming a new triadic set from which meanings and practices are organized around what is and is not considered inclusive. On the other hand, from the theory of historical-cultural activity, she proposes that inclusion is an object of activity whose internal contradictions lie in the way diversity is treated. This contradiction is expressed in the opposition protection vs oppression with which the subjects of inclusion are treated. From this frame of reference, Valenzuela (2024) conducted a qualitative case study based on a formative intervention in a higher education institution in Chile. The results suggest that the construction of meanings about inclusion is strongly mediated by institutional artifacts that operate as tools of continuity and rupture in the development of inclusion. At the same time, based on a Change Laboratory format conducted with two work teams within the same institution, an expansive learning process was supported. This promoted the emergence of a germinal cell and a new model for future activity. It made possible to move from individual conflicts to collective dilemmas that broadened the vision of the scope of inclusion processes.

This research represents the basis for building new theoretical and methodological bridges between SCP and CHAT. One of those bridges is the complementarity between the principle of ascendance from the abstract to the concrete for the formation of new concepts, proposed by Davidov, with the

hierarchy of affective semiosis proposed by Valsiner. A second possible way to connect SCP and CHAT is to add what we call "semiotic expansion" within the dimensions of expansion proposed by Engeström. And the third possible bridge we propose has to do with the practical value of including the analysis of semiotic oppositions and semiotic mechanisms in the process of expansive learning. This epistemological and methodological integration between SCP and CHAT highlights the heuristic value of the notion of unity of opposites to understand the phenomenon of inclusion in education, but at the same time it raises questions about the compatibility between the principles of tensegrity and dialectics that need to be further elaborated.

Interaction with the participants

The participants will be asked to reflect on the following question: *The concept of "semiotic expansion" within the dimensions of expansion proposed by Engeström is intriguing. How does this concept contribute to the understanding of educational inclusion, and can you share practical examples or implications from your research?*

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Cultural-Historical Theory Inspired Design Principles of Online Environments to Enhance Teachers' Digital Identity

Irina Engeness

Digitalisation offers valuable learning opportunities but necessitates the development of new competencies among teachers. Teachers are now expected not only to be proficient users of educational technologies but also active contributors to the design of digital environments, encompassing online courses, learning management systems, and mobile applications. In the pursuit of enhancing students' meaningful interactions with technology, teachers can cultivate their *digital identity*.

However, this demands a robust tool for teachers to effectively guide their design efforts. Recognising this need underscores the importance of outlining pedagogic design principles that teachers can incorporate, test, and implement in their teaching practices. This study posits that Galperin's legacy, rooted in cultural-historical theory, offers a viable approach for delineating the design principles for digital environments. The focus is on enriching students' learning experiences in digital environments and fostering their development as learners.

To illustrate the application of Galperin's pedagogical theory, the study presents an empirical snapshot showcasing the design of modules within digital learning environments. While the proposed principles are preliminary and warrant further examination, this discourse is timely and holds the potential to illustrate how theory can usefully inform pedagogical practice.

The study offers valuable insights for pedagogical practice and research on the design of digital learning environments to enhance teachers' digital identity.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

In the rapidly evolving landscape of 21st-century education, the imperative to cultivate a 'learning to learn' approach is paramount, aligning with Miliband's vision for education's core function (2003). The pervasive influence of digitalisation further underscores the need for educators to adapt, emphasizing the development of teachers' digital competence (Mishra & Koehler, 2006; Redecker, 2017; Starkey, 2019). This shift prompts a dual focus on understanding how to design digital

environments to augment students' capacity for learning and preparing teachers for their pivotal role in this transformation.

The study draws on Galperin's legacy (Galperin, et al., 2023) proposing pedagogic principles for designing digital environments. This theoretical foundation aims to inform practices, facilitating the seamless integration of digital competence development and identity enhancement in teachers, ultimately fostering enriched student learning experiences in the digital era.

From the perspective of Stetsenko's (2017) position termed 'transformative activist stance' (TAS), teachers foster digital identity by actively designing digital environments. This process serves as a pathway for teachers to acquire digital tools, enabling participation and contribution to social practices in education. Engaging in this active project transforms teachers into unique individuals, enhancing learning with technology and fostering students' development as learners.

Galperin's study on orientation may offer insights into pedagogical design principles for digital environments. Planning the learning activity involves identifying the outcome, essential characteristics of the concept, the order of development of students' understanding of the essential features, available tools, and the operational scheme of thinking. The operational scheme enhances students' understanding, making learning conscientious. Galperin emphasises careful planning of orientation, distinguishing between incomplete, complete, and teacher-guided orientations. The third type, where learners construct the orientation following the teacher's approach, facilitates quick and effective learning and supports transferable skills, enhancing students' understanding of how to approach learning in various situations.

The orienting phase of a learning activity involves transforming it from the external to the internal plane. Galperin describes this transformation through phases: motivation, orientation, materialised action, communicated thinking, dialogical thinking, and acting mentally. Motivation shapes learners' attitudes; orientation includes three types, as previously outlined. Materialised action involves interacting with real or digital resources. Communicated thinking relies on speech for guidance, while dialogical thinking internalises the activity through mental representation. Acting mentally represents the final internalised form, where the focus is on outcomes. This transformation has implications for designing digital educational spaces, balancing material and social resources to support learners. Galperin's theory suggests several design principles (DP) for digital environments to enhance students' learning and their capacity for learning to learn.

DP1: Identify the target concept and its essential characteristics, sequencing them based on students' prior knowledge.

DP2: Organise learning activities using the third type of orientation—complete and created by students using a provided approach.

DP3: Integrate the "operational scheme of thinking" into digital environments to enhance students' understanding of the learning process.

DP4: Present resources in materialised form (digital resources, animations) to transfer learners' experiences to the internal plane.

DP5: Facilitate social interactions in digital environments, such as discussion forums or collaborative video meetings.

DP6: Account for feedback and teacher facilitation, providing timely feedback to enhance conceptual understanding and guide the learning process.

In summary, these principles aim to enhance students' learning and, by adopting the third type of orientation, develop their understanding of how to approach learning. This approach empowers students to become active agents in knowledge practices, fostering their capacity for learning to learn.

The empirical snapshot shows how a Module in the online course may be designed based on Galperin's pedagogical principles. Figure 1 presents the structure of the Modules in the PDC Massive Open Online Course (MOOC).

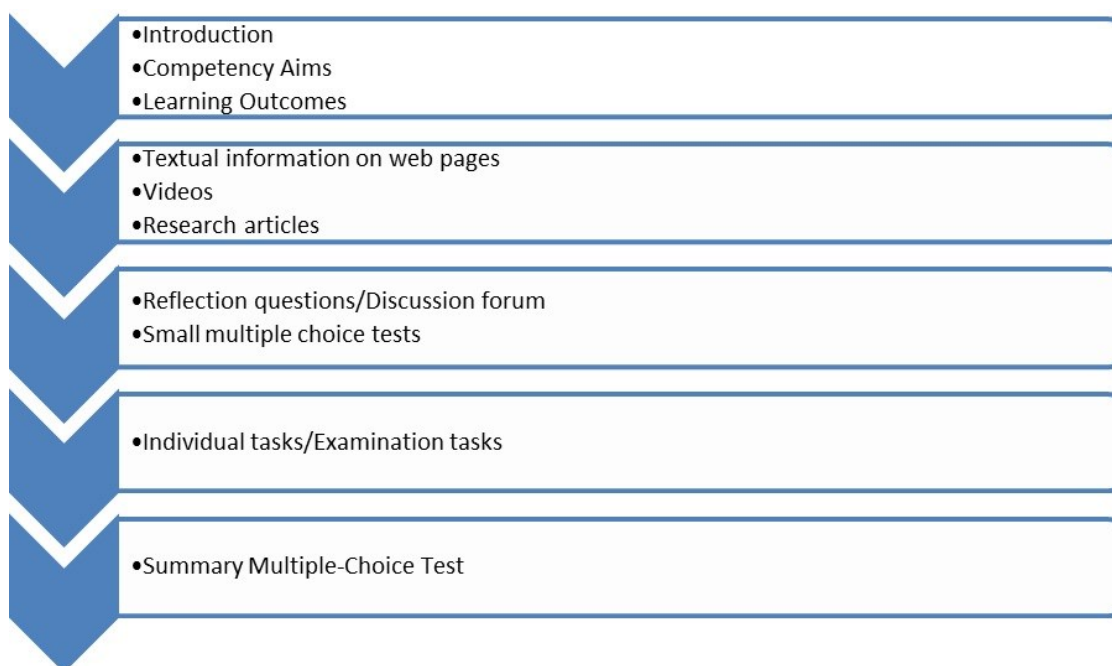


Figure 1. The structure of the Modules in the PDC MOOC

From this standpoint, the structure of the Module in the MOOC follows the suggested above design principles and by employing the third type of orientation, provides a learning approach that enhances students' abilities to connect assignments, concepts and study approaches. This orientation allows learners to grasp the essence of learning through studying the target concept it not as an object of learning but as a tool for understanding learning itself. This approach aims to achieve the acquisition of new conceptual knowledge and enhance students' understanding of learning processes. In digital learning environments, students can independently shape their learning trajectories, enhancing their digital identity. Simultaneously, teachers, as co-designers, elevate their professionalism as digitally competent educators.

In summary, interacting with technology to design digital environments becomes a pathway for developing teacher digital identity, offering opportunities for meaningful contributions to educational practices and fostering human development and learning.

Interaction with the participants

Following the presentation, the participants will be encouraged to contemplate how they can integrate the suggested design principles into their existing approaches. This reflective exercise

intends to prompt thoughtful consideration and discussion, allowing participants to envision practical applications of the proposed design principles within their specific contexts.

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108 Understanding disability in higher education from a cultural-historical approach

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Inclusion Higher education Students with disabilities Vygotsky's defectology

SHORT ABSTRACT

The higher drop-out rate among students with impairments in higher education suggests that the current support system is insufficient. Vygotsky (1993) suggested that when understanding disability, the impairment play a role, but the central focus have to be on the social consequences as they unfold in particular social practices. To promote inclusion in higher education, a better understanding of the particular mismatches between students and the educational institutions are needed. The aim of this presentation is to reframe the problems experienced by students with disabilities within a dialectic cultural-historical frame rooted in concepts from Vygotsky's Defectology (1993): *How can learning problems in higher education be conceptualized as situations of difficulties from the viewpoint of the students' social position?* Specific disabilities or diagnoses are only partly helpful, as they do not reveal the type of problems students experience in relation to the educational institutions and practices. Rather than departing in specific types of learning disabilities and diagnoses, understanding of educational challenges need to depart in the social realities of different impairments. However, each situation of mismatch need not be unique to a particular impairment. Learning problems in higher education can be reconceptualized as recurrent situations of mismatch between students' current capabilities and the demands and support in-built in educational settings.

EXTENDED SUMMARY

Background: Vygotsky (1993) suggested that when understanding disability, the impairment play a role, but the central focus have to be on the social consequences as they unfold in particular social practices. Disability emerges from mismatches between the development of the child and the cultural forms. While Vygotsky wrote this in relation to children with disabilities, this presentation will focus on (young) adults with disabilities in higher education.

In higher education, the organization of teaching, learning and administrative practices presuppose a narrow set of ways to participate as a student from enrolment to graduation (Costa-Renders, 2019). Many students are able to comply with the narrow university culture. Simultaneously, a large minority – often with impairments - experience problems with studying. To promote better inclusion in higher education, a better understanding of the mismatch between students and the educational institutions are needed. Different types of disabilities might affect the student's participation in learning activities, but this is only one side of the problem. To compensate for their individual impairments, the educational institutions offer educational support on an individual basis. Designated educational support does help but also produces a number of new problems, such as feeling of being

stigmatizing (Fornauf & Erickson, 2020) and an extra workload for the atypical students to acquaint themselves with complex rules for dispensations (Stigemoe et al., 2021). Thus, the challenges experienced by students with disabilities arise in the meetings between the student and the educational institution, rather than from the impairment in itself. The higher drop-out rate among students with impairments (Amilon et al., 2020) suggests that the current support system is insufficient.

The aim of this presentation is to reframe the problems experienced by students with disabilities in higher education within a dialectic cultural-historical frame rooted in concepts from Vygotsky's Defectology (1993): *How can learning problems in higher education be conceptualized as situations of difficulties from the viewpoint of the students' social position?*

Method: The method will be to present the theoretical outline for an upstarting research project running from fall 2024 to 2027 as departure for a discussion. The presentation will have two parts: (1) A short overview of main findings in current research in how to support students with disabilities in higher education. (2) The central idea of the project will be outlined: The concept of disability is too broad to be useful as departure for improving inclusion in higher education as it covers too much heterogeneity. On the other hand, departing in specific disabilities or diagnoses is only partly helpful, as the impairments in themselves do not reveal the type of problems, students experience in relation to the educational institutions and practices. Rather than departing in specific types of learning disabilities and diagnoses, understanding of educational challenges need to depart in the social realities of different impairments. Nevertheless, each situation of mismatch need not be unique to a particular student or impairment. For example, while intermittent or chronic somatic and mental diseases covers very different conditions, students with these conditions have in common that they often experience a mismatch between illness-related absences and the organizational pacing of educational activities and exams. In the research project, the delineation of meaningful groups of student/educational setting problems is planned as investigative workshops with participation of researchers, relevant stakeholders and students. The aim of the workshops will be to gain a deeper understanding of how difficulty experienced by students with different kinds of disabilities emerge from their specific impairment in relation to the demands and expectations in the educational setting and together result in a situation of social distortion that makes it difficult for the student to participate in one or more activity settings.

In conclusion: Learning problems in higher education can be reconceptualized as recurrent situations of mismatch between students' current capabilities and the demands and support in-built in educational settings.

Interaction with participants: Participants are invited to provide feedback to the project's theoretical idea and methods through a set of specific questions.

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110 Signification of Newtonian force in a joint labour within a Popular Course in Brazil

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Presentation: Discussion table (45 minutes)

Theme: Promoting interaction in social practices

Keywords: Conceptual signified communitarian ethic Popular Course

SHORT ABSTRACT

One of the pedagogical objectives of “Popular Course” in Brazil is to create skills in some working-class children to prepare them for the High School National Exam. However, this exam becomes an instrument of exclusion because it determines to a minority of young Brazilians access to public universities. Students who receive quality education during their basic school have more probability to access it. Therefore, the Popular Courses aim to fill within their possibilities the empty that the educational system leaves. In this doctoral research we set out to analyze the conceptual signification process of Newtonian force in a *joint labour* that was carried out in physics classes taught at a Popular Course.

To analytically study the proposed problem, we used different methods derived from historical-dialectical materialism considering the historical-cultural theory according to Vygotski and Radford in a sample composed of four women of different ages and life experiences. We took as a unit of analysis the *semiotic nodes* which expressed both the development of concept and the activity of joint labour. In this way, the functional structures of the scientific concept and the different semiotic means used in joint labour were determined; ethical aspects of behavior were also recognized when activities are worked among them. We conclude that it is viable to develop scientific concepts within a Popular Course context, in addition it is also important to research about emotions and experiences in future research.

EXTENDED SUMMARY

Background

According to the Higher Education Census in 2022, only 5.5% of high school and technical high school students entered a public university in Brazil (BRASIL, 2022). The High School National Exam (In Brazil it is called ENEM) ends up being the main instrument of exclusion because it aims to measure the knowledge and skills acquired through basic education for access to public universities. Therefore, inequality in the quality of teaching among schools determines who accesses this academic space. The higher the quality of teaching, the greater the likelihood of acquiring the knowledge and skills that the exam demands.

The courses aim to familiarize and to train students for passing the ENEM. They instrumentalize the teaching of basic school knowledge to guarantee that students access to universities. Some of these courses require private payment. However, the poorest students resort to Popular Courses which are

characterized, unlike private courses, by being free (some of them receive voluntary economic remuneration for their support) and linked to the principles of popular education.

Popular Courses began operating before the military dictatorship in 1964 and currently they are strongly linked to social and community movements within public universities and/or with the support of progressive administrations to further inclusiveness (PEREIRA; RAIZER and MEIRELLES, 2010). The FazArte Popular Community Course where this investigation was developed began operating in 2005 and over time acquired pedagogical and political experiences for students and teachers who are still studying or studied degrees at the Federal University of Goiás (MOZZER, VIEIRA and BOECHAR, 2021). In this sense, this research aimed to characterize and explain a pedagogical experience of a cognitive nature when the concept of Newtonian force was taught at the FazArte Popular Community linking ethical aspects.

Aims

We studied the signification of Newtonian force when there is joint labour within the FazArte Popular Community according to historical-cultural theory. We highlight that joint labour is a category of the objectification theory of knowing and being which recognizes aspects of a communitarian ethic (RADFORD, 2021).

Methods

We used two analysis methods. On the one hand, the genetic-experimental method (VIGOTSKI, 2012) which reproduced the genesis and stages of development of signification Newtonian force and on the other hand, Marx's inverse method (MARX, 2011) which allowed finding the multiple determinations starting from the most developed form of thought to the least developed forms. For this, several *semiotic nodes* were chosen as the unit of analysis which showed the different semiotic means in movement (use of artifacts, conversations, and gestures). Thus, this unit presented two levels of analysis. The internal level, the essence, studied the signification of Newtonian force; and the external level, the phenomenon, analyzed the joint labour.

The study sample was four women, aged 16, 17, 18 and 39 years who worked together during four classes. The activities were recorded in audio and video after the participants were informed of the objectives of the research. Subsequently, the records were transcribed into eight episodes. Each one showed the complete execution of an activity that we proposed to the group.

Results

The functional structures about the signification of Newtonian force were progressively determined during the eight episodes. The students passed from arithmetic thought to algebraic thought operating with proportionality equations; the lines of spontaneous and scientific thought supported each other when experiment and theory were related; Finally, spontaneous concepts evolved toward true concepts about Newtonian force, not only when they used proportionality equations, but when analytically used vectors.

On the one hand, joint labour materialized communicative, explanatory, and comprehensive speech derived from discursive thought; and the use of other gestural semiotic means, especially finger pointing, and emotional expression were potentialized. On the other hand, joint labour recognized ethical aspects such as responsibility, commitment, and care for others.

Conclusion

Although the Popular Courses aim at pragmatic pedagogical actions regarding the socialization of school knowledge, it was possible to show an experience that challenged this purpose within the material possibilities of the FazArte Popular Community Course.

The development of the signification of Newtonian force did not end where the research finished. According to Vigotski (2012), “when the child internalizes a first word linked to a meaning, the development of the meaning of the word does not conclude, but only begins”. Therefore, it is possible to improve the quality of the signs through other activities and other devices to approximate the student to the signification of Newtonian force.

Joint labour generated authentic dramas based on failure and error when they resolved the proposed activities. This means develop more in-depth studies on the role of emotions and experiences in the signification of the scientific concept according to the historical-cultural theory.

Interaction with the participants

We decided to interact with the participants through encouraging dialogue in discussion table.

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114 Transforming school activity: A review study of Change Labs in primary and secondary schools

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Change Laboratory School Literature Review Expansive learning

SHORT ABSTRACT

The current state of the art in educational design research is to focus on one perspective (e.g., teacher or organization). Cultural Historical Activity Theory (CHAT), and in particular the Change Laboratory intervention methodology, enables change processes in organizations on a multilevel. Originally developed in healthcare, Change Laboratories have potential for enacting change in schools (Nussbaumer, 2012; Postholm, 2015; Roth & Lee, 2006). Among the small body of studies that have applied Change Laboratory intervention to schools, the majority use Change Laboratory for analytical purposes (Nussbaumer, 2012). Whereas the intervention, according to its designers, contains not only self-reflection, but also transformative purposes (Engeström & Pyörälä, 2021). Application of Change Laboratory in simplified forms, which is most common, removes its development-oriented aspects. Cause for the scarcity of comprehensive Change Laboratory application seems to be that researchers experience difficulty making personal sense of the theory (Postholm, 2015).

In order to better understand Change Laboratory's methodology and its explanative and transformative potential in the context of schools, lessons need to be drawn from those previous scholars who applied Change Laboratory in its full extent. An overview of such studies, including analysis of their methodology and description of the enacted transformations, as well as conclusory recommendations for implementation is needed to path the way for future studies that seek to utilize Change Laboratory to transform schools.

Preliminary conclusions of a systematic literature review of Change Laboratories in primary- and secondary schools will be discussed in terms of lessons for future change efforts design.

EXTENDED SUMMARY

Introduction

Innovations in schools are abundant, but few create lasting change – a proven major challenge for practitioners and educational design researchers (März et al., 2017; Postholm, 2015). Within schools, the main type of innovation is to improve quality of education through implementation of new teaching practices. These innovations are intentional and transformational (transformational because routines and everyday practice are affected) (Hubers, 2020). The demands transformation of practice places on teachers have been widely studied and partly explain the difficulty with achieving innovations. Namely, the initiated change requires change in teachers' behavior, attitude, and beliefs. Innovation produces friction, which needs a solution. Teachers often feel uninvolved during innovation processes and can even experience it as a threat (Hargreaves & Fullan, 2012). Collective

reflection and collaboration within teacher teams offer potential, as these lead to shared vision and increase ownership of innovations (de Jong et al., 2021). Both are crucial for sustainable change (Engeström & Pyörälä, 2021), as teachers will be more accepting of their transformed practice. Moreover, innovation is hampered when other stakeholders, such as students, parents, and school management are not committed, or when friction is experienced between stakeholders (Engeström & Pyörälä, 2021). A methodology that provides explanation and solution for the unsustainability of innovations in schools is Change Laboratory (Virkkunen & Newnham, 2013). This theory takes the complex context in which multiple stakeholders operate into account and has potential for enacting change in schools (Nussbaumer, 2012; Postholm, 2015; Roth & Lee, 2006).

Change Laboratory is a methodology to tackle wicked problems and enact systemic change in organizations. In practical terms, a Change Lab is a succession of bi-weekly or monthly meetings with representatives of all stakeholders in an organization, led by an interventionist. During these meetings, the participants analyze the organizational system and model solutions, which they test, refine and consolidate.

Among the small body of studies that have applied Change Laboratory intervention to schools, the majority use Change Laboratory for analytical purposes (Nussbaumer, 2012). Whereas the intervention, according to its designers, contains not only self-reflection, but also transformative purposes (Engeström & Pyörälä, 2021). Application of Change Laboratory in simplified forms, which is most common, removes its development-oriented aspects. Cause for the scarcity of comprehensive Change Laboratory application seems to be that researchers experience difficulty making personal sense of the theory (Postholm, 2015).

In order to better understand Change Laboratory's methodology and its explanative and transformative potential in the context of schools, lessons need to be drawn from those previous scholars who applied Change Laboratory in its full extent. An overview of such studies, including analysis of their methodology and description of the enacted transformations, as well as conclusory recommendations for implementation is needed to path the way for future studies that seek to utilize Change Laboratory to transform schools. Therefore, the present study sets out to analyze previous Change Laboratories in primary- and secondary schools in order to answer the question: How are Change Labs used to stimulate and analyze collective transformation of local activity in specific school contexts – and what are the resulting outcomes?

Methodology

Data collection

In this systematic literature review, 1879 studies have been identified from three databases (ERIC, WoS, and SCOPUS). Studies are included which use CHAT-informed interventions to transform local activity at primary and secondary schools. Contrariwise, studies in which CHAT is only used as analytical lens or where CHAT is used to help implement pre-designed intervention have been excluded. A total of 34 studies have been selected for review.

Data analysis

In the thematic analysis (Clarke & Braun, 2006), context specificity and application of variation of Change Lab intervention aspects is compared between case studies, in relation to the resulting outcomes.

Discussion and conclusion

Results will be available and presented during the conference. The findings from this study are expected to provide suggestions for adaptations of the general Change Laboratory methodology for its application at schools. Furthermore, in a broader sense, this study is expected to inform future educational design research.

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121 Universities after Pandemic: Transformation towards hybrid practices

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: academic work hybrid work transformation of practices

SHORT ABSTRACT

The COVID-19 pandemic and the followed digital leap have been considered a big source of a crisis in academia. While being a major disruption, the pandemic did not create many of the phenomena in the first place but accelerated the already ongoing digital revolution and managerialization. The post-pandemic era creates new challenges for universities, similarly to many organizations, on how to organize working practices anew. Academic workers need to modify their working practices, including research, teaching, and other tasks, to hybrid practices as both happening offline and online with the help of digital technologies. The aim of the study is to analyse how academic workers are transforming their working practices in the post-pandemic world. Practice-based theories give means to describe how transformation can happen in actual everyday working practices of academics. At the same time, most practice theories, in contrast to activity theory as an approach to studying practices, focus on the habituality of practices or on repeated and routine pre-reflective practices (Miettinen et al., 2012). Development of practices requires reflection (Miettinen et al., 2012) and reflexivity (Shulz et al., 2015) from actors, in addition to routine survival. The data for this paper comes from interviews with academic workers of different roles and career stages from one faculty of humanities and social sciences at a Finnish university, conducted a year after the pandemic. In the preliminary data analysis, we focus on traces habituality and reflectivity in practices of academic work in connection to individual working practices, collaborative work, and organization.

EXTENDED SUMMARY

Background

The COVID-19 pandemic and the followed digital leap have been considered as one of the major crises in academia. While being a major disruption, the pandemic did not create many of the phenomena in the first place but accelerated the already ongoing digital revolution and managerialization. During the pandemic tensions occurred between following routine forms of practices in new circumstances, or transforming and expanding practices (Littlejohn, 2022). The post-pandemic era creates new challenges for universities, as for many organizations, on how to organize working practices anew. Academic workers need to modify their working practices, including research, teaching, and other tasks, to hybrid practices as both happening offline and online with the help of digital technologies. Practice-based theories give means to describe how transformation can happen in actual everyday working practices of academics. At the same time, most practice theories, in contrast to activity theory as an approach to studying practices, focus on the habituality of practices or on repeated and routine pre-reflective practices (Miettinen et al., 2012). Development of

practices requires reflection (Miettinen et al., 2012) and reflexivity (Shulz et al., 2015) from actors, in addition to routine survival.

Aims

The aim of the study is to understand how academic workers are transforming their working practices toward hybrid working practices in the post-pandemic world. Drawing on the activity-theoretical understanding of transformation of human practices with the role of reflexion and reflexivity (Miettinen et al., 2012; Shulz et al., 2015) we will put forward the following research question: How the interplay between reflectivity and habituality appears in academic workers discourse on emerging hybrid work?

Methods

The data for this paper comes from 19 interviews with academic workers of different roles and career stages (professors, researchers, lecturers, doctoral students, and administrative personnel) from one faculty of humanities and social sciences at a Finnish university, conducted a year after the pandemic in April-August 2023. The pandemic restrictions in Finland were generally in power until spring 2022, so we wanted to look at the potential changes after a longer period. The interviews covered the effect of the COVID-19 pandemic on the transformation of academic work, specifically on the challenges of organizing of hybrid work and hybrid teaching, and functionality of digital technologies. The interviews were conducted in Finnish and English, face-to-face and via Zoom (participants were able to choose).

We are conducting data analysis now (the plan is finish it before the conference). Analysis focuses on traces of habituality and reflectivity in practices of academic work in connection to individual working practices, collaborative work, and organization. In the analysis we focus on what kind of practices continued 'habitually' after the pandemic, like that all meetings are by default are done remotely. Second, we looked at what kind of new practice, which require more reflection are being developed. For instance, how we need to organize face-to-face teaching so students will be motivated to come to campus.

Results

Research practices are going through smaller changes, as many of those practices, like remote meetings and use of online documents for writing were a norm before the pandemic. The nature of research work itself is also not so dependent on presence in one space.

Teaching practices are going through bigger changes, especially with demands of students and administration to make all teaching hybrid. In case of teaching, digital tools were not working well, as they are not fluid and require a lot of attention. Pedagogical practices for remote and onsite teaching also seem to be difficult to combine fluently.

In general, although hybrid practices provide more flexibility, they require more cooperation, planning and organization on different levels of individual working practices, collaborative work, and organization and between these levels.

Conclusions

The post-pandemic transformation forced academic workers to reflect also on routine practices and transform them. In turn, the constant pressure to reflect and transform may result in a growing need to stability and continue some practices unchanged. The extra efforts on organization or dealing with poorly working tools and technologies can disturb the balance productive and constructive activities

(Rabardel & Samurçay, 2001), which in practice may mean increase ‘work about work’ in academic work (Zucas & Malcolm, 2022).

Research on the effects of COVID-19 pandemic has focused on individual experiences, identities, stress, and well-being and there is still a need to look at day-to-day practices of academic work (Gourlay et al., 2021). This study also provides a long-term perspective on the role of the pandemic in the digitalization-related transformation of academic work, as there is data from before and during the pandemic, which helps to make sense of the ongoing changes.

How interaction with the participants is planned

The presentation will be a traditional PowerPoint-based paper presentation with questions and comments in the end of the presentation.

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125 Taking Children Seriously: a caring, relational approach to education

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: motives pedagogy agency

SHORT ABSTRACT

Taking Children Seriously: a caring, relational approach to education

The three 12-15 minute presentations draw on cultural-historical research undertaken by the presenters in Denmark, Norway and Australia. Together they address the question: “what kind of learners for what kind of society?”. The studies reveal features of a relational pedagogy which we argue can help the development of the ethical, questioning, and agentic learners required by society (Hedegaard & Edwards, 2023). The papers discuss the need to take seriously children’s emotions and motive orientations and build common knowledge comprising the motives of learner and pedagogue. This common knowledge then mediates the relational unfolding of children’s responsible agency as learners who can take forward their social situations of development.

In the first paper Hedegaard, emphasising attention to emotion when researching children’s actions in their worlds, explains her approach to studying the perspectives of young children and the methodology she has developed to do so. Edwards then takes the focus to a relational pedagogy that complements Hedegaard’s argument. She explains the three relational concepts that underpin this approach and illustrates their use through analyses of teacher-student pedagogic relationships in Norwegian elementary schools. Finally, Fler presents one aspect of her extensive Conceptual PlayWorld research. Drawing on the same relational concepts she discusses what emerged in relation to four-year-old children’s development in a model of co-teaching with industry partners. The symposium is structured so that 40 minutes is given to discussions where participants can connect the ideas underpinning the symposium with their own pedagogic research.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

A caring relational approach to support children’s development of emotional experience and imagination

Children’s relations to their environment are always coloured by their emotions connected to what is important to them, therefore I have argued, together with Anne Edwards, (Hedegaard & Edwards, 2023) for a caring relational approach in education. A caring relational approach to children’s upbringing and education implies that the educators (parents, pedagogues, teachers) must take children’s perspective to see what is important for them. But upbringing and education also means

putting demands on children These demands can be seen as demands that evolve through direct interaction between a child and caregivers where institutional regulations and societal conditions are reflected in caring demands. I have stressed the emotional aspects in children's experiential relation to the world both in preschool and in school. To study children's emotional experience and imagination and the changes from one age period to the next raises the phenomenological problem of how to get insight into another person's experiences. In the paper I will argue that this can only be done through a second person perspective, that involves the researcher's experience. The Interactive Observation Method illustrates this methodological approach. In the presentation I will focus on researching children's development of imagination. Imagination is the central new function that children develop in preschool. Children's imagination will continue to be important also in school but will change with their development of new psychic functions.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

A caring relational approach to support children's development of emotional experience and imagination

Background

Children's relation to their environment is always coloured by their emotions connected to what is important to them, therefore I have argued, together with Anne Edwards, (Hedegaard & Edwards, 2023) for a caring relational approach in education. A caring relational approach to children's upbringing and education implies that the educators (parents, pedagogues, teachers) must take children's perspectives to see what is important for them (i.e., to be aware of a child's intentional orientation and emotional relation to the world). Upbringing and education means putting demands on children to act within the limits that the specific environment creates. These demands can be seen as demands evolved through direct interaction between a child and caregivers but in this interaction, one finds conditions that both are material and cultural, where institutional regulations and societal conditions are reflected in these demands.

The importance of a caring emotional relation may be illustrated with Lisina's (1985) research that is founded in Vygotsky's developmental theory. Her research demonstrates how adults' caring and emotional communicative relations, from the moment the child is born, contribute to the child's development as an agentive person. This communicative relation between a child and caregivers takes different forms in different age periods in a child's life-course.

The role of emotions may, especially in the preschool age, be seen in children's play as the development of imagination to *plan* and *control* their own activities. Finally, through meeting the systematic aspects of written language and maths in school education, children acquire a new and powerful method of translating actions and images into *symbolic systems* that they may use to guide experimentation.

Studying children's emotional relation to the world

I have stressed the emotional aspects in children's experiential relation to the world both in preschool and in school. I find that this aspect has mostly been overlooked in theories of children's cognition in different age periods. The inspiration to formulate categories to analyse this area comes from Vygotsky's (1998) theory of child development, where he argues that the origin of a child's development starts with the child's emotions as a new-born. These affects will, through the mother and other care-persons' care and support while satisfying a child's primary needs, turn into emotional

relations with the carers. Emotion, Vygotsky argues, has to be seen as a function that develops like other functions into higher psychic functions, that characterise children's whole development (for further discussion see Hedegaard & Edwards, 2023 chapter 3). In this analyses children's motives, what matters for children, - what they value - are important.

The Interactive Observation Method

In the presentation I will discuss the problem of researching children's emotional experience through advocating the idea of a caring *second person perspective* that is always mediating both the child's perspective as well as a 'research' perspective. Studying how children's emotional experience and imagination, (i.e., how children experience the environment and themselves) change through age periods and how they create imaginations of future activities may be researched through an interactive phenomenological perspective (a second person perspective). This is the core of the *Interactive Observation Method* that was formulated through a play-group research project (Hedegaard, 2008)⁴. In this approach a relational perspective was formulated about how to research young children's development, where the focus was on the relation between caregivers and children, in institutional activity settings in home, nursery, kindergarten, school etc. The focuses in this method are analyses of a child's intentions, ways of interactions and conflicts in activity setting as basis for interpreting children's motive orientations and social situations of development. The Interactive Observation Method has a double perspective in the sense that it both focus on the interaction of the observed persons and it also incorporates an analytical perspective on the interaction of the child/children and of the observer/researcher. The analytical perspective encompasses the cultural-historical conception of development in analysing the observations.

Data and analyses

Data collected by the Interactive Research Method is used to outline how imagination and generalisation may develop and how their relation changes when moving from play as the leading activity in preschool to school activity where literacy become the leading activity.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Taking Children Seriously in a Relational Pedagogy

In this presentation the concepts of relational expertise, common knowledge and relational agency are introduced as a way of recognising and analysing pedagogic relationships that take forward the unfolding agency of children as learners. The ideas are illustrated with analyses from a Norwegian study of how successful elementary school teachers support the emerging agency of chronically shy and withdrawn children. Interview data with teachers and with shy students reveal the strategies employed in a relational pedagogy that takes seriously the motives of learners.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Taking Children Seriously in a Relational Pedagogy

Background

For the last 30 years I have examined interprofessional collaborations on complex problems. These studies have resulted in the emergence and testing of three inter-related concepts that mark strong and productive collaborations where the agency of participants can unfold. These concepts are

⁴ Earlier named the *Interaction Based Observation Method*

relational expertise, common knowledge and relational agency. Latterly I and others have employed these ideas to reveal some of the intricacies involved in working relationally with learners. This relational pedagogy requires educators to be clear about what matters for them and identify and work with the motives of children to enable their growing agency as learners. This presentation therefore builds on Hedegaard's emphasis on taking the perspective of learners and recognising the emotional aspects of learning and development.

Aim

I outline briefly the three relational concepts and explain, using data from a recent study, how they can be employed to reveal what is involved in a relational pedagogy.

Methods

The analyses to be discussed are part of a larger scale mixed method study recently funded by the Research Council of Norway⁵. The study aimed at identifying the strategies that elementary school teachers used when working with chronically shy students. Chronic shyness and associated withdrawn behaviour can have negative outcomes for students, inhibiting their development as agentic learners. Yet shyness does not on its own reach the threshold for statutory intervention by school psychologists. Much therefore rests on the skills of children's class teachers.

The data presented here come from stimulated recall interviews with eight class teachers deemed by expert colleagues to be particularly successful when working with shy students. These teachers had been observed prior to the interviews. A shy student in each teacher's class was separately interviewed. Both were asked about the strategies the teacher used to engage the child and their experiences of these. Two methods of analysis were employed by different members of the research team. Two people undertook a grounded approach, identifying emergent categories in the pedagogic relationship from the perspectives of both the teacher and the child, while two others employed the relational concepts (Edwards 2010, 2017) to categorise these actions. The emergent concepts and underpinning data, though differently labelled, were compatible with those revealed using the three relational concepts.

The research team pursued this method of analysis because it was clear that all the children had become agentic learners while working with these teachers. This outcome was also evident in the focus group interviews with teachers who had previous success but were not teaching a shy child at the time of the study. All nineteen teachers worked directly with a shy child taking seriously their anxieties and other aspects of their affective relationship with the demands of classroom life. In the presentation I employ an extract from the analyses of data from one child and her teacher to illustrate the points being made.

Results

Relational expertise was evidenced in a teacher's capacity to be clear about their priorities with and for the child, for example that they will take part in class presentations, and in eliciting from the child how they interpreted the demands of these presentations. These motives were recognised by both child and teacher and constituted common knowledge which could be used to mediate the child's progress towards engaging agentially in the flow of classroom life able to propel themselves forward as learners. The unfolding of relational agency was revealed in how a teacher initially gave strong support to the child and gradually withdrew, enabling the child to make decisions and take action.

⁵ Research Council of Norway Project No: 254982

Conclusion

The analyses have revealed the components of a relational pedagogy that can support the unfolding of children's agency as learners able to take forward their own social situations of development. While the intensive pedagogic efforts of teachers with potentially marginalised learners have been at the core of this paper, the approach can be employed at scale with whole classes. This and other topics may arise from the lengthy period of discussion we are planning.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Relational pedagogy in a co-teaching model: Robotics engineers, preschool educators and researchers working relationally on a common problem

Co-teaching brings together preservice and in-service teachers in primary and secondary schools as an inclusive model of practice (Murphy, 2016). But less is known about co-teaching in early childhood childcare settings. We redress this by sharing the outcomes of an educational experiment into co-teaching in a preschool setting, where we theorise a co-teaching model using concepts from Edwards (relational expertise, common knowledge and relational agency), Vygotsky (imagination, play, drama), and El'koninova and Zaporozhets (emotional imagination). Our experiment involved childcare educators, engineers, and university researchers using a STEM-focused intervention of a Conceptual PlayWorld (Fleer, 2019) based on the Elves and the Shoemaker. Data comprised interviews with all the participants, alongside video recordings of practices. The co-teaching model with industry partners created motivating conditions where a relational pedagogy (Hedegaard and Edwards, 2023) emerged. The model supported girls' active engagement in STEM through working relationally across roles and positions, the building of common knowledge in spaces of reason, and resulted in working relationally for social inclusion in and across the centre into the real world of industry. Both relational expertise and emotional imagining were core for realising the new play practices and STEM learning. We concluded that a co-teaching model develops relational pedagogy and motivates teachers and all children into higher forms of STEM play, which in turn gave greater access and promoted opportunities for more active participation in STEM by girls.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Relational pedagogy in a co-teaching model: Robotics engineers, preschool educators and researchers working relationally on a common problem

Background

The concept of co-teaching has been described by Murphy and Carlisle (2008) as shared expertise where expanded learning opportunities arise for students because of the interactions between co-teachers. Murphy (2016) suggests that "The essence of coteaching is sharing expertise; it values the knowledge, qualities and experience that both co-teachers bring to the process" (p. 3). Research into co-teaching has shown that it "promotes more equal roles in the classroom by supporting a less hierarchical model of teaching" (p.3). Yet despite this inclusive model of practice, criticism remains (Milne, Scantlebury, Blonstein and Gleason, 2010; Murphy and Beggs, 2006; Murphy and Carlisle, 2009), and the need for further theorising of the model continues (Murphy and Scantlebury, 2010; Murphy, Scantlebury and Milne, 2015). Specifically, we know very little about if and how a co-teaching model could support educators in childcare centres and industry partners in the teaching of STEM concepts in the context of children's play.

Aims

The dual aim of this presentation is to share the results of an educational experiment (Hedegaard, 2008) into co-teaching in preschool setting with industry partners, and to theorise the new co-teaching practices by drawing on Edwards' concepts of relational expertise, common knowledge and relational agency, and Vygotskian concepts of imagination and play, and the longstanding research into emotional imagination as originally proposed in various forms by El'koninova and Zaporozhets in relation to fairytales. The educational experiment brought together a co-teaching team of childcare educators, engineers, and university researchers to study if and how a co-teaching model could support STEM learning of 3–5-year-olds using a Conceptual PlayWorld of the Elves and the Shoemaker.

Methods

The educational experiment brought together a co-teaching team of childcare educators, engineers, and university researchers to study if and how a co-teaching model could support STEM learning of 3–5-year-olds using a Conceptual PlayWorld of the Elves and the Shoemaker. An educational experiment with its focus on collaborations between researchers and participants, goes beyond solving a problem of practice, and works on a theoretical problem (Hedegaard, 2008). The team included the lead educator Sarah and her colleagues, automation engineer Ash, mechanical engineer Jai, and the Monash University PlayLab team. The intervention of a Conceptual PlayWorld (Fleer, 2019) of the shoemaker and the elves involved the problem formulation of the elves' shoe factory burning down, and where the children solved the problem by designing their own shoe factory in the centre to help the elves. The manufacturing partners in the co-teaching model were engineers who dressed up as elves, zoomed into the centre to ask the children for help, and later visited their shoe factory in character as elves. Digital video recordings of planning sessions between teachers and engineers and the implementation of the new practices were undertaken over a 2-week period, culminating in post interviews of all participants regarding how the demands of the new practices were met (Hedegaard and Edwards, 2023), and if and how a co-teaching model created motivating conditions for the educators and the children in the learning of STEM concepts.

Results

By drawing on Edwards' concepts (relational expertise, common knowledge and relational agency), Vygotskian concepts (imagination, play, drama), and El'koninova and Zaporozhets research on emotional imagination, the results showed how a co-teaching model supported inclusive practices of children's learning of STEM. Importantly, the study showed a unique attribute of the early childhood co-teaching model with industry partners that linked with Hedegaard and Edwards' (2023) development of a caring relational pedagogy. A relational pedagogy enabled co-development of content that was developmentally sensitive and in tune with children aged 3-5 years by the industry partners. A relational pedagogy was also enabling for the educators, because the children were highly motivated by the elves and the drama of the problem scenario, which in turn created higher motivation of the educators for teaching STEM through their play. In addition, the co-teaching model with its emphasis on relational pedagogy supported girls' active engagement in STEM through working relationally across roles and positions, the building of common knowledge in spaces of reasoning, and resulted in working relationally for social inclusion in and across the centre into the real world of industry. However, relational expertise and emotional imagining were core for realising the new play practices and STEM learning.

Conclusions

We concluded that a co-teaching model develops relational pedagogy and motivates teachers and all children into higher forms of STEM play, which in turn gave greater access and promoted opportunities for more active participation in STEM by the girls.

How interaction with the participants is planned. The presentation will last 12-15 minutes with time for Q & A, thereby allowing participants to connect the findings/theorising with their own pedagogic research.

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127 Youth's online activities, meta-cognitive orientations and intellectual styles

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: intellectual styles meta-cognition internet

SHORT ABSTRACT

The purpose of research presented in the paper has been to investigate the relationships between youth's online activities and their intellectual styles. It is based on the data obtained in the representative national survey conducted in Latvia in 2023. The data was collected on 32 various online activities. Four different types of internet users were distinguished by means of factor analysis, namely, information seekers, communication-oriented users, content creators, and gamers, entertainers and socializers. There were identified four types of meta-cognitive orientations towards the internet: (1) 'intellectuals' using the internet critically and consciously for learning; (2) 'internet-reliant' having high trust in the internet as a repository of information, as well as the tendency to use the internet for cognitive off-loading; (3) 'collaborators' practicing multitasking and appreciating cooperation with peers; as well as (4) 'distracted' for whom it is difficult to focus on the main activity when using the internet. Data analysis discovered correlations between types of internet use, meta-cognitive orientations towards its use for learning, and the types of intellectual styles (modes of self-government) described by Sternberg. The results of the research give ground to suppose that the patterns of online activities and meta-cognitive orientations contribute to the formation of cognitive styles of the young people. The survey targeted secondary school and higher education students aged 16–25 (n=2169), and was carried out within the framework of the project "The impact of internet usage patterns on the development of youth's cognitive styles" (Izp-2021/1-0357).

EXTENDED SUMMARY

In the present research project, it has been assumed that, in accordance with the principles of cultural-historical psychology and activity theory, the rise of digital culture, the spread of new media and digital technologies as a new form of *mediation* would have an impact on the psychological aspects of activity and mental processes. The survey included the measurement scales of the frequency and types of online activities of the young people, the attitudes towards the use of the internet in learning and Sternberg's Thinking Styles Inventory (Sternberg, Wegner, & Zhang, 2007), which consists of 65 items comprising 13 different intellectual styles. Sternberg conceptualized thinking styles as a mode of intellectual self-government by the analogy of political government (Sternberg, 1998). His approach has similarities with Vygotsky's conception of higher psychic functions, which, according to Vygotsky's view, are all based on the mastering of one's psychic processes (Vygotskij, 1983). Moreover, Sternberg and Zhang consider that thinking styles are socialized, formed in the process of upbringing, learning and shaped by culture and leading activity

(Sternberg & Zhang, 2005, 2006; Zhang, 2013). This view is also in line with the approaches of cultural-historical activity theory and the developmental learning (Davydov, 1996; 2005).

The young people with more complex intellectual styles (Type I) were found to engage mostly in activities such as information seeking, using the internet for learning purposes, and content creation. Individuals with less complex intellectual styles (Type II) were found to use the internet mostly for entertainment, socialization and communication. Individuals representing flexible or mixed intellectual styles cluster (Type III) tended to engage in content creation and communication activities.

Meta-cognitive orientations towards the internet were measured by a set of 12 statements. It has been argued in the scholarly literature that meta-cognition impacts the intellectual styles (Sadler-Smith, 2011). Vygotsky (1984) clearly indicated that the views about one's cognitive functions through the mechanism of self-consciousness and reflexivity affect the systemic configuration of higher psychic functions. These views, or assumptions, are produced on societal level and are accepted by an individual from the surrounding culture. The purpose of this measurement was to find out which role the young people assign to the internet in the process of knowing and to what extent they rely on the internet as a support for cognitive activity. The respondents were asked to evaluate the statements such as: "It is better not to overload the memory with too much information, one can find the information on the internet when needed"; "Nowadays it is more important to be able to quickly find, evaluate and organize information than to acquire theoretical knowledge"; "I critically evaluate the information I find for studying using web browsers" etc. Four types of meta-cognitive orientations towards the internet were identified through the factor analysis: (1) 'intellectuals'; (2) 'internet-reliant'; (3) collaborators and multitaskers; as well as (4) 'distracted'. Certain correlations between the types of activities and the types of cognitive orientations were established. For instance, the 'intellectuals' tend to use the internet for information and knowledge seeking; the 'internet reliant' positively correlate with gaming; orientations towards collaboration and multitasking positively correlate with communication, creation of digital content and gaming; the 'distracted' positively correlate with communication and information sharing.

For the students of Type I intellectual style it is important to deeply understand the content of the study subject; they tend to evaluate critically the information they find on the internet, especially the higher education students. The young people of Type II intellectual style more than others agree with the opinion that it is better not to overload one's memory with too much information but find it on the internet when necessary. The individuals of Type III style have the tendency to be distracted by other activities when studying on the internet; distraction is less characteristic for Type I. Type III in comparison with other styles are more oriented towards using the internet for cooperation with other students, especially with the secondary school students. In summary, Type I tend to be the 'intellectuals', Type II can be marked as the internet-reliant cognitive off-loaders, and Type III can be referred to the collaborators, multitaskers and the distracted.

While the young people of Type I cognitive style are able to direct and control their online activities, the young people of other types of cognitive styles seem to be influenced by the distracting environment of the internet. There is ground to suppose that the use of digital media and the internet in combination with certain meta-cognitive assumptions reinforce some characteristics of Type II and Type III intellectual styles.

The research project is carried out by a team of sociologists and psychologists from Riga Technical University and the University of Latvia. The author will be open to questions from the audience and discussion of theoretical and empirical aspects of the research.

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140 How classrooms where everyone can learn collaboratively without anxiety can be created?

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Collaboration ground rule learning culture of classroom

SHORT ABSTRACT

The purpose of this study was to clarify how classes can be created in which everyone can learn collaboratively without anxiety. Observations were conducted in one third-grade classroom, once a month for a total of 10 observations. The classroom discourse obtained from the observations was analyzed with a focus on the ground rules (GRs) presented in the discourse, and the results indicated the following. (1) The teacher repeatedly presented the GRs throughout the year in responses to the children's comments and situations. In particular, she communicated the importance of listening to what others said throughout the year. (2) Teacher presented and confirmed GRs not only for pointing out when students were not acting according to the rules, but also when they were acting according to the rules. Especially, she recognized the value of children when they voiced their lack of understanding, and encouraged other children to respond it. (3) The teacher regularly created opportunities for the children to reflect on the classroom situation. In this process, children themselves identified "not feeling safe speaking up" as an issue in their classes, thought about what they should do to solve it, and generated a new GR ("Speak up, believing that peers will listen") in their own words. Thus, it was suggested that over a long period of practice, a classroom in which the teacher can work with children to identify and construct GRs will be created where they can learn safely.

EXTENDED SUMMARY

Background

Many studies have shown the effectiveness of collaborative learning (e.g., Stahl, 2013; Cohen & Lotan, 2014). However, it has also been shown that collaborative learning does not always work (e.g. Barron, 2003). In recent years, it has been pointed out that some learners are anxious or uncomfortable with collaborative learning (e.g. Pang, et al., 2018; Ichiyanagi, 2021). The voices of these children have not been addressed in previous studies enough.

In relation to this, previous studies have pointed out the requirements for collaborative learning to be established (Sugie, 2011; Johnson, Johnson & Holubec, 2002) and the ground rules for thinking together (e.g. Mercer, 2008; Daroukola, et al. 2022). However, these studies have not referred to above voices of children. These studies have not clarified how teachers present requirements or rules in everyday classroom teaching and interaction with learners, nor how they change over time.

Aimes

Therefore, the purpose of this study is to longitudinally clarify how classrooms where everyone can learn collaboratively without anxiety can be created, focusing on ground rules.

Methods

Observations were made in one third-grade class taught by Ms. Takeshita (female, over 20 years of teaching experience, pseudonym), who has been practicing collaborative learning continuously. In this class, a total of 10 observations were conducted once a month between school year. During these observations, video recording was conducted.

From the video, the audible utterances were transcribed. Then, utterances by her presenting the ground rules (GRs) for learning in collaboration with others that should be shared by class members, indicating values, attitudes, and ideas related to the purpose and meaning of discussion, how to relate to others, and thinking during the discussion were coded.

Results

506 teacher's utterances were extracted as utterances presenting GRs not only at the beginning of the year, but throughout the year. Moreover, it was shown that Takeshita-sensei mostly indicates GRs as responses of students or context (97.6%). This suggests that she did not deliver the GRs unilaterally but presented it contextually and confirmed it in response to the children's comments and situations. Takeshita-sensei presented GRs not only at the time of subject study, but also at the morning meeting and the going-home meeting. It is suggested that GRs are presented and shared throughout the whole educational activities according to the situation at hand.

Then, we categorized the GRs according to their contents. The results showed 10 GRs in Takeshita-sensei's utterances. As in the previous study, the following GRs were presented: "value your own ideas," "actively present your ideas," "participate as a subject," and "respect mutual help." In addition, the GRs specific to Takeshita-sensei were presented as "active listening," "responsive speaking," "understanding the meaning," "expressing what you don't understand," "don't leave me behind," and "working carefully." In particular, she communicated the importance of listening to what others said ("active listening") throughout the year.

In addition, she did not only point out when students were not acting according to the rules, but also valued the situation when they were acting according to the rules, and confirmed the GRs. Especially, she recognized the value of children when they voiced their lack of understanding ("expressing what you don't understand"). Then, she also encouraged other children to respond it ("active listening," "responsive speaking.")

Furthermore, Takeshita-sensei regularly created opportunities for the children to reflect on the classroom situation. In this process, children themselves identified "not feeling safe speaking up" as an issue in their classes, thought about what they should do to solve it, and generated a new GR ("Speak up, believing that peers will listen") in their own words.

Conclusions

These results suggest that over a long period of practice, a classroom in which the teacher can work with children to identify and construct GRs will be created where they can learn safely. Especially, it was indicated that the growth of children as listeners lead to the creation of a classroom where children feel free to speak up even if they do not understand and learn collaboratively without anxiety.

How interaction with the participants is planned

We would like to exchange conscious practices to ensure that students feel safety in collaborative learning.

In Japan, this kind of example is called "lesson creation is class creation," and the emphasis is on nurturing children inside and outside the classroom, but what about other countries? Are there any difficulties?

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142 There, Here and in Between – Some Migrated LGBT Young Men's Voices on sexual victimization, honor violence and social inclusion

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Honor Violence Social Inclusion Cultural Socialization internalization, ZPD

SHORT ABSTRACT

The often difficult and problematic life conditions of LGBT youth, with increased challenges of stigmatization, discrimination and abuse, unlike the majority of heterosexual youth, are detailed in other research. This study focuses instead on an unexplored area – honour violence and LGBT youth. The empirical evidence is based on my fourteen semi-structured interviews and a focus group interview with six participants – all young men aged 16–25, with a different ethnic background and sexual orientation than the majority in Sweden. The study particularly highlights these LGBT youth's experiences of having grown up in families with an honour-related violence structure, what forced them to leave the special and complex vulnerability they experienced in the country they fled from and the importance of entering new social practices here in Sweden with other types of norms, values, and requirements. The cultural-historical activity theory provides a constructive framework for understanding people, what they do and the changes that happen to them in the social contexts they participate in. When they participate in various everyday communities of practices, their personality develops by learning to act and to think in a particular way based on cultural and historical requirements and values, while society's is internalized in them, and they are thus socialized. The study shows how the Swedish society can create safer social communities without honour violence from which LGBT youth can enter the society, orient themselves to the future and expand their personal action competences as participants in social practices.

EXTENDED SUMMARY

Background

The challenging and problematic living conditions faced by LGBT youth in Sweden, as opposed to heterosexual youth, have been extensively discussed in previous research (Westerlund et al., 2022). A systematic review of 34 international research studies also highlights the increased challenges of stigma, discrimination, and harassment faced by LGBT youth in society (Wilson & Cariolas, 2020). This paper specifically illuminates the experiences of male LGBT youth who migrated to Sweden from countries where they grew up in families with honor-related violence structures. At the time of the interviews, they had been in Sweden for one to two years, awaiting residency permits. The youth describe their upbringing and the factors that forced them to leave the particular and complex vulnerability they experienced in their home countries – *there*. They also highlight the web of problems and challenges they still face in Sweden – *here*. Finally, they emphasize the importance of

integrating into new communities with different norms, values, and demands in Sweden – *in between*.

Aims

The cultural-historical activity theory provides a constructive framework for understanding humans (Knutagård, 2022). This theory, centered on humans, posits that we encounter both people and environments when engaging in activities (Leontiev, 1986). These activities occur within the framework of broader activity systems, usually in the form of society, its institutions, and, for example, its non-profit associations. The *interpersonal* communication between people becomes *intrapersonal* communication within ourselves (Vygotsky, 1978). Therefore, our self-perception depends on the norms and values communicated between people in the activities we engage in throughout our lives (Nygren, 1999). The migrated LGBT youth describe an honor-related violence structure during their upbringing in their home countries and the fact that they still largely live in environments with violence, power, and counter-power in Sweden (Hammerlin, 2019). Thus, humans and society can be understood as different levels in a mutual relationship within the same entity. This constitutes the central themes of the paper.

Methods

The empirical data is qualitative and primarily based on my nine semi-structured interviews and one focus group interview with six participants—all young men aged 16–25, with different ethnic backgrounds and sexual orientations than the majority in Sweden. The data was mainly collected as part of a larger study on the efforts of the three major cities, Stockholm, Gothenburg, and Malmö, regarding honor-related violence and oppression (Baianstovu et al., 2018). Additionally, five interviews from my book "Sexuality and Social Work" (Knutagård, 2016) are used.

Results

The interviewed LGBT youth recount a strongly traditional and normative family structure, built on honor, shame, and dishonor—especially regarding gender and sexuality, which are permeated by hostility towards homosexuality. The youth consistently describe their upbringing in a society hostile to homosexuality. They are socialized into this societal structure and develop their personalities within it. One interviewee state, "I am just like garbage to them there in Iran. I am nothing." Thus, the interviewees experience an internal contradiction, at worst a conflict, between their perceived homosexuality and the surrounding society's negative attitude towards it. Therefore, they are forced to hide their homosexuality and learn to navigate relationships with a constant sense of fear. This struggle takes place within themselves, in a mutual relationship with the environment. This leads them to feel wrong, stigmatized. The external—*interpersonal*—stigmatizing dialogue becomes internal—an *intrapersonal* one. A constant repeated dialogue that can be likened to *self-stigma* or rather as *self-dishonor*—taking a shame-laden dishonor and making it one's own. This is something the youth claim they constantly carry with them and that exists regardless of whether they are exposed to the disapproval of the outside world or not. Today, there are non-profit associations in civil society for LGBT individuals in Sweden, providing opportunities for the participants in my study to access them, something they lacked in their home country. The same youth says, "When I come here to the association and meet other homosexuals who have experienced the same thing as me, I slowly understand and feel slowly that I am not wrong. Because there are other people just like me." Through their participation in communities of practice, they can develop their personalities, address their inner conflict, and thus integrate into Swedish society.

Conclusions

In a new context and with different norms regarding homosexuality than what the youth's families express, the interviewed individuals experience a sense of freedom and security. A healing of internal and external suffering begins slowly. They gain new linguistic tools and action competencies to be themselves in accordance with the Universal Declaration of Human Rights.

How interaction with the participants is planned

Interaction with the participants is planned after the 20-minute presentation, with a 10-minute discussion.

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143 The start of the international cooperation regarding activity theory.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Other CHAT-related topic

Keywords: History of activity-theory Sociology Mapping History and development of activity-theory

SHORT ABSTRACT

We examine and describe the first international congress in activity-theory (Berlin in 1986), and how it acts as nexus point to understand the spread and development of activity-theory from 1986-2024. This case highlights some of the conflicts concerning the conditions and limitations of adapting and developing activity-theory as a discipline in various academic institutions. We specifically focus on the spread and usage of activity-theory in Scandinavia. Our approach, methodology and mapping are inspired by sociology of scientific knowledge, specifically Bourdieu (1988) and Foucault (1972) and highlights the conditions of possibility in which activity-theory are embedded in and specifically how the ideological foundation of activity-theory influences the trajectory of this discipline.

EXTENDED SUMMARY

Background

This article and presentation investigate the event concerning the 1. Internationaler Kongress zur Tätigkeitstheori in Berlin (W), October 1986., who were the major presenters, which countries were represented and how was this theory presented for an international audience. We see this event as a historical nexus point where we start our tracing of the outline of the development and spread of international activity-theory, and the conditions of possibility concerning this historical process. This historical development is of critical importance if we are to understand the contemporary conditions of activity-theory as a theoretical and practical discipline in various institutions, and we here use Danish higher education as a specific case to illuminate these conditions in 2024. Our approach is inspired by an approach found in sociology of scientific knowledge, see for instance (Shapin, 1995).

Aims

We aim to openly present our preliminary findings regarding the historical case of 1. Internationaler Kongress in 1986 and outline our mapping of the spread of activity-theory since 1986-2023. By presenting these findings in ISCAR-Rotterdam we hope to receive further insights, specifically regarding other national contexts and their historical development and spread of activity as a discipline and scientific lens and practice.

Methods

Our mapping method is inspired by Pierre Bourdieu sociology of knowledge and way of outlining the influence of various agents, see Bourdieu (1988) for an example of such an approach in French academia, or (Bang, 2013) for an example of such an agential perspective concerning the Solvay Conference on Physics in 1927.

Results

Our preliminary findings show the importance of various agents in terms of spreading activity-theory in the various national context. We also see the influence of Soviet-psychologists and how they influenced the spread of activity-theory. There similarly a prevalent early ideological emphasis in activity-theory, which gradually decline in the historical development.

How interaction with participants is planned

We have planned a series of questions to engage the audience, both to get different national perspectives regarding the spread and historical development of activity-theory and to stimulate discussion.

The questions are:

- Which institutional and historical conditions made activity-theory initially flourish and which have later hindered its growth as a discipline?
- How does academic capital assist in spreading theoretical perspectives (here activity-theory) and how does ideology relate to academic capital?
- In general, how do research environments and scientific agents assist or hinder the spread of theoretical perspectives?

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149 Challenges and contributions of second-career teachers entering the activity system of the school

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Second-career teacher Perceptions of colleagues in school Schoolcontext

SHORT ABSTRACT

To address teacher shortages, second-career teachers are recruited to change career from their previous job into education. We studied the challenges and contributions perceived by colleagues in the school when working with these second-career teachers. We used the lens of Activity Theory, interpreting the perceived challenges and contributions in terms of the tools, rules, community and division of labour in the school. Semi-open questionnaires (n = 53) and interviews (n = 26) with direct colleagues (mentors and subject peers), school-based teacher educators, and management staff were conducted.

The results show that colleagues perceived positive contributions from second-career teachers to the activity system (AS) of the school as a learning environment for students (AS1). SCTs provide 1) a substantive contribution with their knowledge; 2) a cultural contribution with their positivity, diversity, and refreshing perspectives; and 3) an organizational contribution by increasing the number of teachers in school.

However, colleagues also perceive challenges within the activity system of the school as a learning environment for student teachers (AS2), related to adequately guiding SCTs. Additional challenges for colleagues concern balancing their time between the two activity systems and dilemmas about treating SCTs as students (AS2) or experts (AS1).

Our findings may help explain the ambivalence of colleagues toward SCTs entering school.

EXTENDED SUMMARY

Background

To address teacher shortages, professionals from other sectors than the educational sector are recruited to make a transition to education; they are referred to as second-career teachers (SCTs). To address the specific needs of these students, alternative certification programs have been implemented. Previous research on SCTs' experiences reveals that these students are motivated to learn the teaching profession, but they also encounter challenges when making this career change (Ballado, 2022; Tigchelaar et al., 2010; Williams, 2013). SCTs appear to experience tensions related to their new positions as a starter; their ideals related to the teaching profession; their needs regarding their learning route; and the combination of work, study, and family life (Tigchelaar, 2010; Williams, 2013; Van Heijst et al., under review). A substantial number of SCTs drop out before or soon after they finish the programme (García & Weiss, 2019; Dutch Ministry of Education, 2020).

The social environment of the school has been found to play a crucial role in SCTs' decision to continue or discontinue their training (Coppe et al., 2022).

Despite the apparently crucial role of colleagues in school, little is known about the perspectives of colleagues who work with SCTs. Acquiring an understanding of the challenges and contributions that they experience when SCTs enter school may help to better equipping colleagues in school to support SCTs.

We used the lens of the Cultural Historical Activity Theory (CHAT) (Engeström, 2015) to understand the perceived challenges and contributions of SCTs to the school as an activity system. How does their entering the school challenge or contribute to the school's object, tools, rules, community, and division of labour. How do they, as boundary crossers, inform and influence the activity system they enter (Akkerman & Bakker, 2011; Tsui & Law, 2007)?

Aim of the study

It is probable that the arrival of SCTs in schools affects the school's activity system. However, little is known about how this is experienced by actors in school who work with SCTs. Understanding their perspectives may provide insight in what SCTs' mentors and other colleagues in school need to be able to better guide this specific group of students. This study therefore aims to gain insight into the experiences of the colleagues (=subjects) in school including direct colleagues, school-based teacher educators (SBTEs), and management staff who work with SCTs. The following research questions guided our study:

What contributions do direct colleagues, SBTEs, and management staff experience when SCTs join school? What challenges do direct colleagues, SBTEs, and management staff perceive when SCTs join school? We approach these questions through the lens of the Cultural Historical Activity Theory (Engeström, 2015)

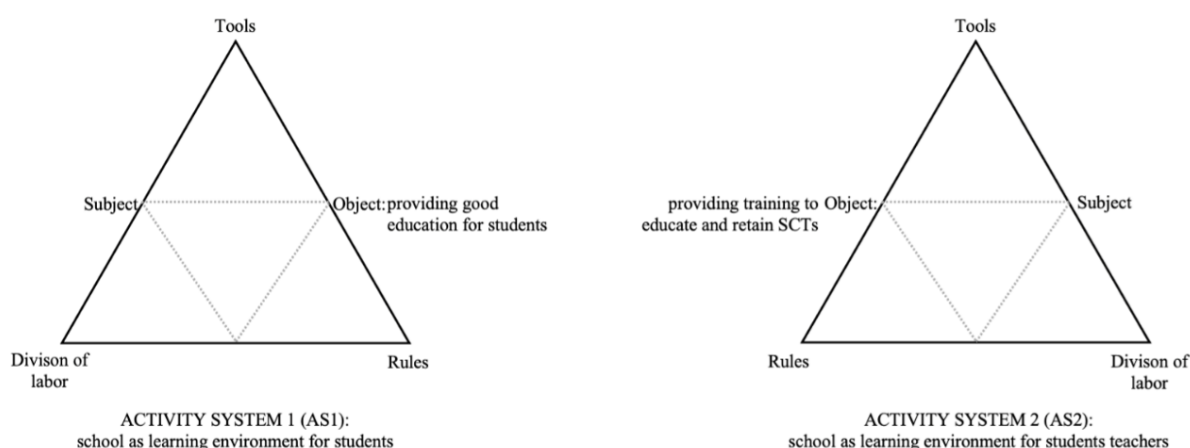
Method

We used a qualitative study to explore and examine the experiences of SCTs' colleagues. We utilized a sequential design incorporating various sources of data (Flick, 2018): semi-open questionnaires (n = 53), followed by semi-structured interviews (n = 26) with direct colleagues (mentors and subject peers), school-based teacher educators, and management staff.

Results

Our analysis revealed that, when SCTs join a school, they actually enter two activity systems; one with the object of providing education to students (AS1) and another with the object of training student teachers (AS2). These systems are depicted in Figure 1.

Figure 1
Activity Systems in school in which SCTs participate when entering education



Colleagues perceived positive contributions from SCTs to the activity system (AS) of the school as a learning environment for students (AS1). SCTs provide 1) a substantive contribution with their knowledge; 2) a cultural contribution with their positivity, diversity, and refreshing perspectives; and 3) an organizational contribution by increasing the number of teachers in school.

However, colleagues also perceive challenges within the activity system of the school as a learning environment for student teachers (AS2). Providing guidance tailored to SCTs' diversity in needs, seniority, demanding schedules and ideals, constitutes a challenge. Additional challenges for colleagues concern balancing their time between the two activity systems and dilemmas about treating SCTs as students (AS2) or experts (AS1).

Conclusion

Our findings elucidate an ambivalent stance among colleagues regarding SCTs entering the school. Supervising and coaching SCTs appears to be challenging and time-consuming due to their unique requirements; they have specific needs, seniority, busy lives, and beliefs and images about the teacher profession. However, colleagues also acknowledge the immediate positive contributions of SCTs to the school as a learning environment for students. It is crucial that colleagues learn how to supervise and coach SCTs adequately and harness their potential so that they may feel less ambivalence toward working with this student group. Increased knowledge and competencies of colleagues in school for adequately guiding SCTs will reduce their dropout risk.

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150 Contradictions and expansive learning related to multisite digital support at Community Workshops

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Community Workshops contradictions expansive learning

SHORT ABSTRACT

Digital support refers to guidance on the independent use of digital services and smart devices provided by various actors in society. Some citizens are being excluded from society due to a lack of digital devices and skills. Community Workshops enable building cooperation among regional actors to support the digital inclusion of people in vulnerable positions. The research questions were: what kind of contradictions related to multisite digital support were identified, how did contradictions develop at Community Workshops, and what kind of solutions were found? We utilized the tools of the cultural-historical activity theory to figure out the contradictions related to digital support activities with the aid of the activity system model. In efforts to resolve contradictions, mirror data motivated participants to define contradictions embedded in activities and resolve them with the help of various tools. This process of double stimulation facilitated the manifestation of expansive learning actions. Expansive learning was manifested in participants' talk as questioning and analysing current digital support practices, envisioning change, and looking for solutions to existing problems. The analysis of the discussion data of the Community Workshops showed that contradictions in digital support activities are particularly related to incomplete and contradictory rules and practices, which prevent the receipt of comprehensive digital support and obscure the division of labour among digital support providers. Clarification of the rules related to digital support, inclusion of smart devices in guaranteed minimum income, networking of local providers of digital support, and agreement on the division of labour were suggested as solutions.

EXTENDED SUMMARY

The research is based on the project of Empowering People towards Socially Inclusive Society (2022-24). The aim of the research was to develop multisite digital support in a local municipality. In Finland, for public service organisations, providing support is mandatory according to law, whereas for other organisations, such as NGOs, it is on voluntary basis. The state wants to enhance collaboration between actors to ensure that all citizens get help in the use of digital services. The problem is however that the provision of digital support is scattered, and the roles and responsibilities of the organisations are blurred.

We created a series of five Community Workshops with real-life experiments as a method of co-creation (Lund & Juujärvi 2023). Organisations working with digital support and actors interested in co-creation of digital support were invited to participate in the workshops. They were willing to develop the digital inclusion of the people in vulnerable position and actors' collaboration. The method has its roots in the Change Laboratory method, which has been used to solve wicked problems of society and today, in particular, to promote the social, economic and political inclusion of vulnerable people (Virkkunen & Newnham 2013).

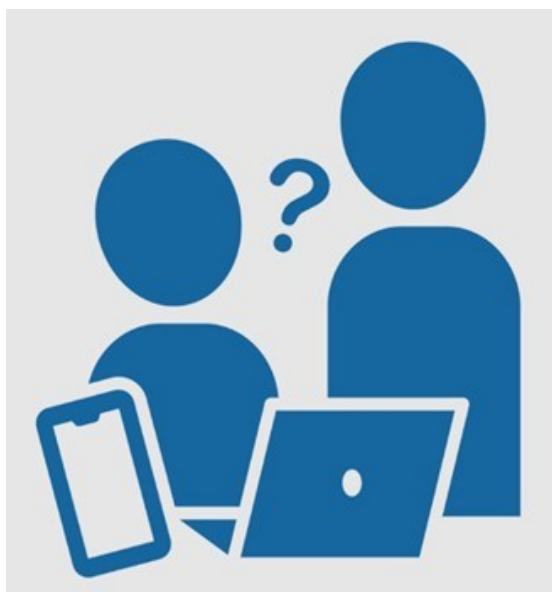


Figure 1: Community Workshop process

The Community workshops connect many learning sites and actors across different sectors and levels such as national, urban, non-governmental and grassroots level to collaborate and combine their resources to solve the contradictions and to enact their activities (Sannino 2020). The method of Community Workshops helps to deepen the understanding of the problem area, promote change and produce effective and durable solutions. It is a method of intervention in which the participants reflect on and resolve contradictions that have emerged in their activities. At the same time, it supports participants' learning and the development of their agency (Sannino, Engeström & Lemos 2016).

The strength of the Community Workshops lies in the transformation of individual actions into a collective activity through the change process. Participants' interest in the tensions and challenges in the activity emerges by using the principle of double stimulation, in which the researcher regulates the activity with two stimuli (Sannino 2022). First, the mirror data stimulate contradictions and expansive learning actions to emerge. The mirror data acts as the first stimulus that draw the participants' attention to issues requiring development and motivate them to resolve them and makes participants collaborate. The second stimulus is given to the participants as an instrument for analysing the contradiction.

In the intervention, the researchers have an important role. They elicit and maintain a collective expansive learning process that consists of well-planned stimulating assignments learning tasks, instructions, organization of the working groups and data collection. Learning is understood as



participation in a change that is manifested in social interaction with others. The learners are supported to solve contradictions. Expansive learning actions refer to questioning a prevailing practice, practical analysis, modelling of a new solution, examining a new model, implementing the model, reflecting on the process and consolidating the new practice (Engeström 2015). Expansive learning involves the development in participants' agency through expansive learning actions from the individual manifestations of the needs to collective change efforts. Transformative agency emerged when resolving contradictions together and initiating a change towards new possibilities. The method of Community Workshops is about developing new solutions that can be substituted for prevailing mindsets and practices. The outcome is a new solution that can be implemented in practice. This is achieved through analysing central development challenges together and envisioning a new direction of development. The participants' discussions during the Community Workshop process turned individuals from acting alone into a co-creating groups working on a collective activity. This triggered and sustained a development process that will also continue after the project. The development process produced new information of the provision of digital support for vulnerable people, the providers' roles and the factors affecting them.

In Community Workshops the participants modelled new practices for digital inclusion of vulnerable people. They worked on three experiments 1) they affected the Social Assistance act by writing a statement for the government claiming that digital devices should be included in social benefits, 2) they planned and created the visual symbol for digital support for the use of provider organisations to help all people regardless of their language skills easily recognise where they can get support and assistance in digital issues, and 3) they worked on the definition of digital language and terms understandable for all. The Community workshops were used as a goal-oriented guidance tool of the change process and to support the introduction of new practices and methods.

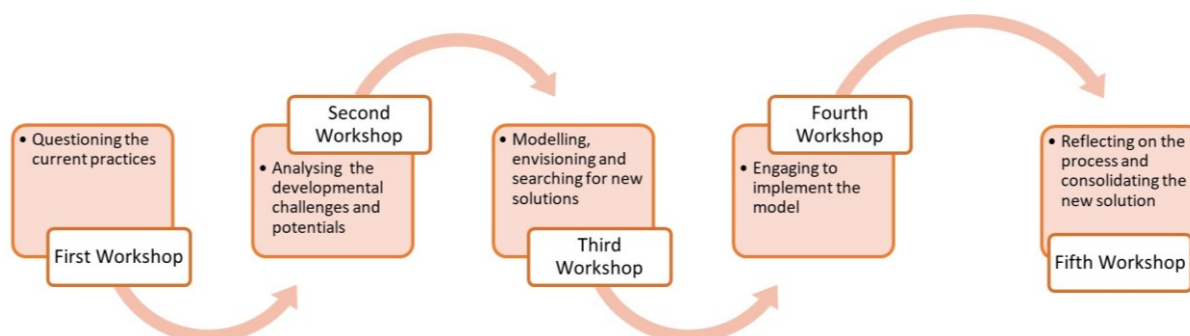


Figure 2: The symbol of digital support

The interaction with activating questions: How do you receive digital support? How is digital support organized in your surroundings? How do you plan intervention for multiple actors from different levels?

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157 Integrating STEM into Playworld: An Exploration of Children's Concept Formation on Fermentation

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Children's STEM Learning Play Concept Formation

SHORT ABSTRACT

Although children's learning in STEM has raised attention in early childhood research, there have not been many studies on early childhood STEM education focusing on children's concept formation. While most of the studies examining concept formation employ the constructivist approach, this study is framed by cultural-historical theory and aims to explore the concept formation development for preschool children during Playworld as an activity setting for STEM learning. Data was gathered through observation of 3 teachers interacting with 12 children (3.5–5.5 years; mean age of 4.6 years), in a group activity, generating 20.2 hours of digital observations of play practices. Drawn upon the concept of play, everyday and scientific concept, and concept formation from cultural-historical theory as the analytical tools for the data analysis, this study reveals how children's concept formation develops, specifically through teacher-directed concept interpretation, developing personal concept interpretation, and emerging scientific concept. Regarding how children develop the concept formation, it is found that Playworld as the activity setting assist children's learning and scientific thinking development, specifically on fermentation, by creating imaginary scientific situations that presents scientific problem situations using imagination. The findings demonstrate a connection between imagination on STEM, play and learning in the implementation of Playworld as the play pedagogy to promote scientific thinking development in play-based learning practices.

EXTENDED SUMMARY

Science, Technology, Engineering, and Math (STEM) has become trends in education field, including in early childhood education. Research shows that there are a rapid evolving and vibrant field of STEM education (1). Even there is a considerable body of research supports the importance of building the foundation of STEM learning from the early years, it correlates with the significant influence in preparing students for later STEM success (2).

Various goals of STEM education for student development have been proposed through curriculum and its policy, including a recent urgent call in governments' policies worldwide for promoting STEM education (4). For instance, in Hong Kong, the development of STEM in education proposed in the 2015, 2016, and 2017 Policy Addresses include the following: The Education Bureau will renew and enrich the curricula and learning activities of Science, Technology and Mathematics, and enhance the training of teachers, thereby allowing primary and secondary pupils to fully unleash their potential in

innovation (5). Meanwhile in Indonesia, STEAM become one of the characteristic in the newest curriculum (6)(7).

Teachers implemented and developed STEM education through integrating it to different learning methods, namely problem-based learning, project-based learning, and inquiry-based learning (9). Through integrating STEM to children's learning, children develop their autonomy to investigate their own scientific interpretation (10). Yet, imagination in play is a key in children's learning. While play has not been comprehensively investigated and implemented as an evidence-based model of teaching science for preschoolers (11), the lack of early childhood educators' attitudes to teach STEM subjects such as science and mathematics was also found (3).

This paper discusses the findings from a case study of 12 children and 3 teachers. The focus of the research was on how teachers support children's concept formation development and how imaginative play called Playworld promotes STEM learning in play-based settings. Since there has not been much research done on the nature of children's play and teachers' play pedagogy in relation to STEM in the Indonesian context, using cultural-historical theory to guide this study will allow for a greater understanding of how imaginary play is implemented to promote STEM learning and support the development of children's concept formation on STEM.

Using the cultural-historical concept, particularly concept formation, everyday concept, and scientific concept as the analytical tools for data analysis, this study reveals how children's concept formation on STEM develops, including teacher-directed concept interpretation, the development of personal concept interpretation, and the emergence of scientific concepts. In examining the mechanisms through which children navigate concept formation, it becomes evident that Playworld, as an activity setting, plays a pivotal role in fostering children's learning and the development of scientific thinking. Notably, the study underscores the significance of incorporating imaginary scientific scenarios within the Playworld as a pedagogical approach, thereby presenting scientific problem situations that harness the power of children's imagination to cultivate scientific thinking. The outcomes of this research establish the dialectical relationship between play, STEM learning and children's development through imagination.

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158 Changing the everyday lives of toddlers, pre-schoolers and school children in educational settings

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: human rights STEM girls inequality

SHORT ABSTRACT

This symposium brings together researchers from Australia, Greece and the UK. The three papers draw on cultural-historical research projects undertaken to address the central question of how to change the conditions of children and students who have traditionally been excluded from educational settings and/or specific areas of learning, such as girls in STEM, and how inclusion must also capture teacher access to professional learning. The studies collectively bring forward issues of human rights, and innovations in educational practices. The studies show multiple conceptions of inclusion, where democratization and resilience are the focus, resulting in insights into children's right to learn; teachers' right to high-quality professional development, and a step change in girls' access and participation in STEM education.

The symposium begins with broad discussion of inclusion in relation to the child's right to an education in the context of school exclusion through a UK Economic and Research Council funded study undertaken by Ian Thompson. This is followed by an Australian Research Council funded study of children from birth to five years engaged in STEM learning, where the results showed how girls just turning 3 years of age were actively excluded from STEM learning because of social policing between children. The final paper by Glykeria Fragkiadaki and Iro Zachariadi adds to child rights and access through the concept of science literacy as a means of inclusiveness, democratization, and resilience. Children's right to learn science concepts is featured as citizens in child-inclusive societies.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Excluded Lives: The Political Economies of School Exclusion

Dr Ian Thompson

This paper reviews current concerns about formal and informal disciplinary school exclusion in England. Permanent and temporary school exclusions rates in England are much higher than in the rest of the United Kingdom and disproportionately affect students with special needs, from care backgrounds, living in poverty, and from some ethnic backgrounds. This paper argues that looking the issue of school exclusion is another way of looking at issues of inclusion and diversity in schools and raises issue for the rights of children and young people who are marginalised in education and society. In England conflicting policies around educational attainment and inclusion have led to perverse incentives to not meet the needs of some young people by excluding them from school.

The paper illustrates this argument by reporting on some of the findings from the current ESRC funded project *The Political Economies of School Exclusion Across the UK (2019-2024)* led by the Excluded Lives Research team at the University of Oxford. This paper will use a child's rights lens to provide insight into the contested nature of the concepts of inclusion and exclusion.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

There is widespread public and political unrest in England about the variety of ways in which young people who may be seen as a threat to school attainment profiles, and who are being excised from the school system through formal or informal exclusion (Daniels, Porter and Thompson, 2023; McCluskey et al., 2019). This paper draws on some of the findings from the current ESRC funded project *The Political Economies of School Exclusion Across the UK (2019-2024)* led by the Excluded Lives Research team at the University of Oxford. The paper argues that the disproportionate exclusion in England of young people who live in poverty, have mental health issues, are care experienced, with special educational needs or from particular ethnic groups have both cultural and historical origins (Thompson, Tawell and Daniels, 2021). Disciplinary school exclusion has negative consequences in terms of academic achievement, well-being, mental health, and future prospects (Madia et al., 2022; Obsuth et al., 2023). In the *Excluded Lives* team, we have shown that policy developments around inclusion and exclusion in schools are often driven by the interplay of a complex set of incentives encapsulated in sometimes contradictory policies that are motivated and operationalised by different stakeholder groups. These can unintentionally lead to perverse incentives for schools that lead to exclusion when the policies are recontextualised in different local settings and institutions - eg the devolved parliaments in Scotland and Wales have continued to attempt to give priority to inclusion in education whereas these tensions in England have intensified (Daniels, Thompson and Tawell, 2019).

Aims ▪ The main aim of this research project has been to develop a home international multi-disciplinary understanding of the different landscapes of political economies and the experiences and consequences of school exclusion across the United Kingdom. In education, policy discourse has tended to find individual reasons for exclusion rather than develop an understanding of exclusion in the wider context of education, social policy and the law. In contrast, this research has assumed that school exclusion cannot be treated as separate from the general welfare and education systems (Daniels, Emery and Thompson, 2023). With regards to disciplinary school exclusion the education systems are markedly different across the four UK jurisdictions, and this research has sought to understand the ways in which the different cultures and understandings of inclusion have influenced policy and practice. This paper is concerned with problematising questions of children's rights and understanding the motives that drive school professionals in practices of permanent and fixed period exclusion from school. The paper also aims to raise a concern about the moral status of the act of school exclusion. At the root of this problem lies the question of whose rights are more important or acceptable?

Methods

The Excluded Lives project explored the political economies of school exclusion across the UK through a series of work packages in three broad themes of the landscapes of exclusion, the experiences of exclusion, and the costs of exclusion. Quantitative and qualitative methods included documentary policy analysis, surveys of both young people and of parents/carers in 30 core schools across the 4

jurisdictions, as well as interviews with young people and parents/carers (sometimes together) and focus groups of young people. Theoretically, the analysis draws on Vygotskian non-dualist cultural historical conceptions of mind within society (Vygotsky, 1987).

Results

Exclusion from school involves a physical change of environment and this movement almost always involves changes in the situation of development where different motives drive educational activity sometimes to the point that it is not recognisably education.

Those young people who have been ‘moved’ have been deemed to have transgressed in one situation: they have offended the moral order of the institution and are punished through disciplinary exclusion. In this process, the voices of the young people involved in the exclusionary process, and by extension of their parents or carers, are rarely heard. Despite differences in rates of exclusion across the UK there were similar experiences across the jurisdictions on perceptions of fairness and a lack of understanding of the process of school exclusion. The analysis of the findings has identified three overarching and interacting themes:

- Rights, fairness and not being listened to;
- Needs not being met;
- Communication and relationships.

Conclusions

The exclusion of a child or young person from school can be viewed as an act of punishment (Parsons, 2003) for real or perceived actions of an individual or a system response to trying to repair or maintain the local social order of the school (Graham & Thrift, 2007). This act raises questions of agency and transformation and the motives that drive them that cannot be answered by divorcing the motives of actors from the social situation in which they operate.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Motive and orientation to STEM: Girls’ competence and confidence in STEM stalled at 3 years

Laureate Professor Marilyn Flear

Researchers have grappled with how to design educational programs that support the place of girls in STEM. Mostly the problem has been addressed through setting up supplementary programs based on assumptions of “fixing up the child” so they “catch up”. Yet the systemic problem has maintained. More needs to be known about when and why girls begin to identify that STEM is not for them. In our educational experiment (Hedegaard, 2008) between researchers and teachers of children aged 1-5yrs participating in STEM learning across multiple childcare centres, we examined the central theoretical problem of girls’ motive orientation to STEM. The study design included an intervention of a Conceptual PlayWorld (Flear, 2019). How girls meet the recurrent demands of the social practices in the centres will be discussed in the context of the theme of the Congress. Theorised through the concepts of ideal and real form of development (Vygotsky, 1994), digital data were gathered from across five childcare centres. Findings show that before 3 years, all children demonstrated a motive orientation to STEM under the conditions of a Conceptual PlayWorld. Girls’ access and participation became increasingly policed between children. Teacher qualifications impacted on if or how the policing was addressed. We concluded that despite years of active intervention and policy concerns for girls and women’s participation in STEM, little appears to have changed.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:**Motive and orientation to STEM: Girls' competence and confidence in STEM stalled at 3 years***Laureate Professor Marilyn Fleer***Background**

For over 2 decades researchers have grappled with how to design educational programs that support girls in STEM. Sociological theories have dominated research. Mostly this research has theorised the problem in relation to introducing supplementary programs to enhance achievement (Patrick, et al., 2008). Many programs are based on the assumption of 'fixing up the child', so that the child can catch up to other children. Whilst other studies seek to make visible the unconscious bias by theorising interactions in relation to different kinds of microaggressions (Stephenson, et al., 2021a). Yet despite these efforts, disparities in STEM continue to be observed in early childhood, with some arguing that this becomes more evident later in childhood, presenting itself as negative self-assessments and attitudes (Morgan et al., 2016; Watts, et al., 2014). That is, lower self- concept, lower interest, and gender stereotypes are reported with "lower STEM achievements and stereotyped career wishes" (Feierabend et al., 2023: 1). Additionally, research has explained the interactions in relation to a lack of role-models, and an accumulation of a lack of expertise and a resultant lack of confidence in STEM (Hallström, et al., 2015). However, the systemic problem appears to have been maintained over time, suggesting more needs to be known about when and why girls begin to identify that STEM is not for them (Fleer, 2019; Stephenson, et al., 2021b).

Aims

To address the need for gender equity and equal access to STEM education in early childhood, we undertook a cultural-historical study of children's participation in STEM for children under 3 years of age. The aim of this presentation is to illustrate the developmental conditions and the difficulties of changing STEM outcomes for girls and theorising the problem through cultural-historical concepts. To achieve this aim, we set up an educational experiment of teachers and researchers collaborating on an intervention of a Conceptual PlayWorld that promoted STEM learning in early childhood. Our study involved children aged one to five years participating in STEM learning across multiple childcare centres with varying developmental conditions. By theorising the problem of girls and STEM from a cultural-historical perspective, rather than a sociological perspective, we analysed the different developmental practices and through this were able to show how girls' motive orientation to STEM changed negatively through social policing by other children, or positively through interventions by the educators. How girls meet the recurrent demands of the social practices in the centres will be discussed in the context of the theme of the Congress.

Methods

The study design is an educational experiment (Hedegaard, 2008) with an intervention of a Conceptual PlayWorld (Fleer, 2019). An educational experiment with its focus on collaborations between researchers and participants, goes beyond solving a problem of practice, and works on a theoretical problem (Hedegaard, 2008). Digital data included: 1) Initial professional development of the intervention; 2) Digital recordings of ongoing planning and reflections on site as part of the educational experiment between researchers and teachers; 3) teacher-child interactions and child-child interactions across ten weeks over 5 different early childhood centres, where data were gathered by setting up 2 video cameras in each centre (one following children and one capturing the overall context). Theorised through the concepts of ideal and real form of development of

development, social situation of development, and crisis (Vygotsky, 1994), data were analysed in relation to Hedegaard's (2014) dialectical concepts of motives and demands to determine how children enter into, contribute and shape the activity settings within each of the five centres.

Results

Analysis of the data found that before the age of 3 years, all children showed a motive orientation to STEM under the conditions of a Conceptual PlayWorld. However, at 3, girls' access and participation in STEM became increasingly policed between children. The level of teacher qualifications impacted on if or how the policing was addressed.

Conclusions ▪ We concluded that despite years of active intervention and policy concerns for girls and women's participation in STEM, little appears to have changed. Attention to practices of children prior to age of 3 is needed.

How interaction with the participants is planned.

A discussant will make reflective comments followed by Q&A.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Scientific literacy as a means of inclusiveness, democratization, and resilience

Dr Glykeria Fragkiadaki, Iro Zachariadi & Eleni Stavropoulou

The newly launched OECD PISA 2025 Science Framework mirrors an international need to support scientific literacy as a means of navigation through complex global challenges and resilience in times of crisis. Forming STEM (science, technology, engineering, and mathematics) concepts, developing scientific skills, and connecting STEM to everyday life are critical for a sustainable future for all. What is well understood is that scientific literacy is a right of all young learners not just for becoming active future citizens but, for being current citizens of STEM in child-inclusive societies. However, early childhood (ec) teachers have also the right to understand STEM and meet the demand of performing to high standards in ec STEM education as well as have the right to accessible, continuous, and high-quality professional development. Yet, research has perennially shown that ec teachers feel excluded from STEM understanding and vulnerable to current and future challenges in ec STEM education. Conceptualizing scientific literacy as a means of inclusiveness, democratization, and resilience, this presentation shares some insight into how ec teachers experience and position themselves in STEM. The study is part of a larger research project that focuses on enhancing young learners' scientific literacy through play. Empirical data were generated as part of an educational experiment in preschool settings. The preliminary analysis centers around the dialectic interrelations between societal demands, institutional practices, and ec teachers' motives and intentions. The study concludes by discussing aspects that can lead to societal change as part of addressing the global teaching crisis.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

The highly demanding conditions of the pandemic and parallel crises such as climate change and the ecological crisis or the new AI (Artificial intelligence) realities brought special attention to the concepts of the democratization of STEM and specifically to the democratization of STEM education. Most of the studies conducted in the field of democratization of STEM education focus on the student's perspective and mainly suggest intervening early to make STEM equally accessible to all

students to avoid disparities and prevent social inequalities (Clements & Sarama, 2011; Morgan, Farkas, Hillemeier & Maczuga, 2016). However, less is known and discussed about the teachers' scientific literacy and their needs for STEM learning and understanding. What is well-known from the literature is that teachers face a range of ongoing challenges when teaching STEM in early childhood and primary educational settings (Garbett, 2003; Park et al., 2017; Stephenson, Fleer, Fragkiadaki, & Rai, 2021; Yıldırım, 2020). This problem has been highlighted in the literature from diverse perspectives. Yet, it is not deeply theorized as an issue of inclusiveness and democracy.

Aims

In the context of the theme of the Congress, this presentation seeks to give an insight into scientific literacy as a means of inclusiveness, democratization, and resilience. The presentation aims to unpack how early childhood teachers experience access to STEM and how scientific literacy is built and promoted by early childhood teachers as an institutional practice.

Methods

The study design was set up as an educational experiment (Hedegaard, 2008). The overarching theoretical problem the educational experiment sought to address was related to the dialectical interrelation between play and learning in STEM and the democratization of STEM through play in the early years. The empirical data presented here were generated during focus group interviews with the participation of in-service early childhood teachers and the research team. The data were digitally recorded and analyzed at three different levels, as proposed by the dialectical-interactive method (Hedegaard, 2012). The cultural-historical concepts of motives, intentions, demands, and conflicts were central to the data analysis process. The study presented here is part of the PlayProofS research project (Play-proofing Science: enhancing young learners' scientific literacy through play) implemented in the framework of H.F.R.I call "Basic research Financing (Horizontal support of all Sciences)" under the National Recovery and Resilience Plan "Greece 2.0" funded by the European Union –NextGenerationEU.

Results

The findings showcase a system of microaggressions, tensions, gaps, and marginalizations in early childhood teachers' experience in STEM. Critical aspects such as play-based pedagogies for the transition towards an inclusive STEM education are discussed.

Conclusions

The study highlights that democratizing STEM education is a systemic process that should include both young learners in STEM and early childhood teachers. The study concludes by discussing aspects that can lead to societal change as part of addressing the global teaching crisis.

How interaction with the participants is planned.

Through enhancing dialectical interrelations between the three presentations and collectively crafting a set of take-away messages from the symposium.

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165 Cultural-historical research methodology in action: research across cultures and ages Part 1

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Presentation: Symposium (90 minutes)

Theme: Creative ways to do research

Keywords: cultural-historical theory research methodology experimental-genetic method

SHORT ABSTRACT

The main purpose of the symposium is to present a contemporary cultural-historical research methodology that improves the experimental-genetic method developed by Vygotsky (Vygotsky, 1997) and his successors. The symposium will show how the principles and requirements of the research methodology are used to investigate processes of development across diverse cultures and ages (children and adults).

Three aspects of cultural-historical research methodology (theoretical framework, data collection and data analysis) will be discussed – 1) the selection of analytical tools (theoretical concepts) as a theoretical framework for particular research and genetic-analytical model (Veresov, 2019, Filippi et al., 2023); 2) principles of organisation and research design (Veresov, 2014, 2022) 3) genetic-analytical model and the matrix of data analysis (Filipi et al., 2023). It will be shown how these analytical means might help to formulate the research questions and how they were applied to frame the specific concrete research programs across diverse cultures and ages. The first part of the symposium is designed from three presentations. The first is about the main aspects and traits of cultural-historical research methodology (Presenter 1); then the research on the development of child's agency in multicultural pre-school settings (Presenter 2) and finally the research on the process of role adjustment in the process of the transition of bicultural children to school.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Cultural-historical research methodology: advancing experimental-genetic method for research across cultures and ages

Nikolai Veresov, Monash University, Australia

The cultural-historical research methodology (Veresov, 2014, 2022) is a recently developed methodological approach that advances the experimental-genetic method (Vygotsky, 1997) and includes three main aspects: 1) designing a theoretical framework where the concepts of cultural-historical theory are used as a means of analysis and allow framing of the research questions; 2) creating a research design based on the selection of the relevant principles for conducting an experimental study and 3) analysing the collected data on the basis of the general analytical-genetic model (Veresov, 2014, 2022) and the matrix of cultural-historical analysis (Filipi et al., 2023). The

advantage of this methodology is that it allows all three main stages of a specific experimental study - theoretical framework and research question, data collection and data analysis - to be structured in a unified logic. In this presentation I will introduce the first and second aspects in terms of how they can be realised in research through cultures in preschool settings. The following presentations in this symposium will show how the concept of cultural-historical theory (the cultural forms of behaviour) was used as an analytical tool to study the process of development of agency in early childhood within multicultural context (Presenter 2) and how one of the principles (principle of drama) was used to experimentally investigate the process of development processes in the transition of bicultural children to primary school (Presenter 3).

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Cultural-historical research methodology: advancing experimental-genetic method for research across cultures

Nikolai Veresov, Monash University, Australia

Keywords: experimental-genetic method, cultural-historical genetic research methodology, research design

Rapid global social changes and cultural diversity make it necessary to improve research methods and their application. Psychological development across the lifespan obeys general laws, but its trajectory is culturally determined and takes place in specific diverse cultural contexts. The question on the agenda is whether Vygotsky's experimental-genetic method developed 100 years ago is still valid in the contemporary conditions of the new digital and multicultural environment. How can the experimental-genetic method be improved in the situation of radical changes in the social and cultural conditions across cultures and ages in the 21st century? We believe that cultural-historical research methodology (Veresov, 2019; Filipi et al, 2023) could be the answer to these challenges. This new methodological approach advances the experimental-genetic method (Vygotsky, 1997) and includes three main aspects: 1) designing a theoretical framework for the research where the concepts of cultural-historical theory are used as a means of analysis and allow framing of the research questions; 2) creating a research design linked to the research questions and based on the selection of the relevant principles for conducting an experimental study and 3) analysing the collected data on the basis of the general analytical-genetic model (Veresov, 2019, 2022) and the matrix of cultural-historical analysis (Filipi et al., 2023). Thus, this methodology allows all three main stages of a specific experimental study - theoretical framework and research question, data collection and data analysis - to be structured in a unified logic. In this presentation I will introduce the first and second aspects in terms of how they can be realised in research through cultures in preschool settings.

Creating a theoretical framework is the first step in building the research project. The researcher selects several theoretical concepts that become research tools and allow the researcher to formulate a research question. Since all concepts of cultural-historical theory reflect certain important aspects of the dialectics of development (for example, zone of proximal development, social situation of development, etc.) it makes it possible to formulate a research question/s also focused on the study of the process of development. This is in line with the requirement of the experimental-genetic method to study processes, not things (Vygotsky, 1997). The following presentation (Presenter 2) in this symposium will show how the concept of cultural-historical theory

(the cultural forms of behaviour) was used as an analytical tool to study the process of development of agency in early childhood within a multicultural context.

Creating a research design and data collection is the second step of cultural-historical research methodology. For this purpose, a system of general principles for organising and conducting an experimental study has been developed. These include several principles (Veresov, 2014, 2022) – buds of development, drama, the principle of cultural tools, the principle of interaction of ideal and present forms and the principle of sustainable results. Experimental conditions and settings are created on the basis of these principles, and as each of them relates to a theoretical concept, the possibility of integrity and conceptual unity of the theoretical framework, research question research design and data collection is created. The following presentation of this part of the symposium (Presenter 3) will show how one of the principles (principle of drama) was used to experimentally investigate the process of development processes in the transition of bicultural children to primary school.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Cultural development and the developmental trajectory of child agency

Queena Lee, Monash University, Australia

Given the significance of child agency the existing literature focuses on how agency shapes and is shaped by environment while very few studies how agency develops in the environment (Sannino, 2022; Varpanen, 2019). This research explores how teaching practice supports the development of child agency in Australian early childhood settings. Children's agentic behaviour being framed by the concept, cultural form of behaviour (Vygotsky, 1998), makes agency tangible and its development studiable, following the law of cultural development and sociogenesis (Vygotsky, 1994, 1998, 1999). Another concept, social situation of development, problematises the teaching practices that particularly supports children's agency development. These two concepts constitute a theoretical framework that uncovers how child agency develops not only 'in' but 'from' the environment. Three principles of the experimental-genetic method, buds of development, cultural tools and sustainable results, (Veresov, 2014) guide the researcher to observe, capture and trace the qualitative changes in four-to-five-year-old children's agentic behaviours.

This study identifies a dialectical developmental trajectory of child agency by proposing four agentic stages, *pre-agentic*, *emerging agentic*, *partially functional agentic* and *fully functional agentic*, to highlight the qualitative changes occurring throughout the process. The dynamic nature distinguishes agency development from a linear developmental model; rather, its developmental trajectory continues sustainably across different scenarios. These findings contribute to the application of the cultural-historical genetic-analytical model (Veresov, 2019) and bring new knowledge to the fields of teaching, research and policy reform in early childhood education.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Cultural development and the developmental trajectory of child agency

Queena Lee, Monash University, Australia

Keywords: Child agency, agentic behaviour, agency development, cultural development

The existing literature on agency focuses on how children as social agents shape and are shaped by the environment. This research uses a metaphor of Möbius strip to capture that endless, mutually

influencing relationship between agency and environment, with a gap identified that very few research explain how child agency develops within the environment (Sannino, 2022; Varpanen, 2019). Therefore, this research aims at exploring how teaching practices support the development of child agency in Australian early childhood settings. The presentation focuses on the developmental trajectory of agency.

This study adopts the cultural-historical research methodology (Veresov, 2019) with cultural-historical theory framing the research analysis and experimental-genetic method guiding the data collection. As the manifestation of their agency, Children's agentic behaviour is conceptualised with the concept of cultural form of behaviour based on the three distinct features, task, tool and operation (Vygotsky, 1998). Consequently, agency becomes tangible and studiable following the law of cultural development (Vygotsky, 1994, 1998, 1999) and the law of sociogenesis (Vygotsky, 1998). Another concept, social situation of development (Vygotsky, 1998), is used to conceptualise the teaching practices, as the social environment in this study, that particularly support the developmental process of child agency. Therefore, these two concepts constitute a theoretical framework that unravels the Möbius strip to study how agency develops from and in the environment.

Following the experimental-genetic method to use a dialectical approach, restoring a study subject into a process beginning with its initial process appears fundamental (Vygotsky, 1997). Accordingly, the research design includes 2360 minutes of on-site observation about the teacher-child interactions in the authentic early childhood settings in Australia, 313 minutes interviews and 293 minutes of cultural-historical workshops. 5 university-degree early childhood teachers and 12 focus children aged four-to-five participated in the research. The principles of buds of development, cultural tools and sustainable results (Veresov, 2014) guides the researcher to capture and trace the qualitative changes in children's agentic behaviours during on-site observations.

As children's agentic behaviour is essentially a cultural behaviour, this research proposes four agentic stages to highlight the qualitative changes appearing throughout the developmental trajectory of agency: *pre-agentic*, *emerging agentic*, *partially functional agentic* and *fully functional agentic*. Child agency, therefore, can be redefined as *a child's ability to voluntarily master one's individual behaviour intentionally*. The pre-agentic stage refers to a prehistoric episode when children are in an unoccupied or disengaged state where a task has not been undertaken, as the presence of task brings intentionality and purposefulness into children's behaviour (Australian Government Department of Education [AGDE], 2022; Bandura, 2001; Rainio, 2008). This stage is not included in the Vygotsky's (1994) experiment of cultural behaviour. Rather, it is a type of natural form of behaviour (Vygotsky, 1984, 1998). When children actively undertake a task independently or willingly accept a task from others' suggestion, their agentic behaviour is transitioning to the next stage: emerging agentic behaviour, aligned with the first two stages of cultural development, "natural psychology" (Vygotsky, 1994, p.64) and "naive psychology" (p.65). At this stage, children's lower psychological functions or unproficient mastery of tools hinders their successful task accomplishment.

When children grasp the technique and tricks to master the tools to successfully accomplish the task (Vygotsky, 1994), they transition to the next stage – partially functional agentic, aligned with the "external sign and external operation" (Vygotsky, 1987, p.115). Lastly, once children internalise the tool structure and methods, they progress to the fourth stage – fully functional agentic, where children employ the internal psychological tools, as the central components to the higher

psychological functions, to solve a task, in accordance with the fourth stage of cultural development, “complete ingrowing” (Vygotsky, 1994, p.66).

Overall, the development of agency follows the four stages dialectically. The dialectics lie in the coexistence of the four stages and the sustainability of development. Children’s initial agentic stage in one scenario depends on their funds of knowledge (Moll et al., 2006; Moll et al., 2013). This study observes a leapfrogging-like phenomenon, seemingly bypassing one or two intermediary stages, which is actually caused by children’s quick grasp of external/internal tools (Vygotsky, 1994). The developmental process is fastened rather than skipped. This finding in turn underscores the importance of using a genetic approach to study child agency. Furthermore, once reaching the fully functional agentic stage, agency does not cease to progress but continues to develop across different tasks, which can usually be observed in children’s transfer of newly emerged learning into other contexts (AGDE, 2022). In conclusion, this study enriches the application of the genetic-analytical model (Veresov, 2019) and brings new knowledge to the fields of policy reform, research and practice in the contexts of early childhood education.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Children’s role adjustment crises during the transition to primary school

Junqian Ma, Nanjing Normal University, China

The prevailing view is that the crises encountered by children during transitional periods can detrimentally affect their learning and development (Fink et al, 2019). From a cultural-historical perspective, significant achievement or “qualitative leap” in child development is unlikely without such crises (Veresov, 2021). This presentation, adopting the cultural-historical genetic-analytical model and concepts of “crises”, “drama”, “social situation of development”, and “perezhivanie” as the theoretical framework, and employing “role adjustment” as the unit of analysis, explores how these crises relate to child development. Specifically, it examines the role adjustment of two second-generation Chinese Australian children during their transition to primary school. The study finds that the nature of a child’s response to crises, shaped by their individual ‘perezhivanie’ within his/her social situation of development, can lead to either developmental potential or dangers.

The findings overcome the over-pessimistic view of children’s crises among empirical studies and enrich the cultural-historical theory and provide implications for educational practices. Prematurely introducing academic tasks in preschool may reduce children’s learning engagement and limit achievement. A smooth school adjustment does not necessarily predict positive future development; challenges and crises during this period can also unveil hidden potentials. Lastly, the same environmental changes can have varied impacts on children, contingent upon their unique social situation of development. This raises questions the efficacy of universal approaches aimed at improving continuity or narrowing the preschool-primary school gap without considering individual children’s needs.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Children's role adjustment crises during the transition to primary school

Junqian Ma, Nanjing Normal University, China

Keywords: role adjustment, crises, transition to primary school

The prevailing view is that the crises encountered by children during transitional periods can detrimentally affect their learning and development (Fink et al, 2019). However, from a cultural-historical perspective, significant achievement or “qualitative leap” in child development is unlikely without such crises (Rubtsova, 2012; Veresov, 2006, 2021). Such contradictory points inspire us to explore what crises mean for child development during the transition to primary school.

This study uses “role adjustment” as the unit of analysis, and adopts the cultural-historical genetic-analytical model developed by Veresov (2019, 2023). This model builds upon Vygotsky's concepts of the interplay between children and their environment, providing a practical methodology for studying children's development in complex, dynamic environments. The cultural-historical genetic-analytical model aligns with certain aspects of Bronfenbrenner's ecological systems theory, but it focuses more on the intricacies of children's development and their interactions with the environment, addressing some limitations of Bronfenbrenner's model. This model is applied to the current study to examine the dynamic changes in children's social situation of development during transitional periods and the emergence of role adjustment crises through children's *perezhivanie* in response to these changes. Through a case study of two second-generation Chinese Australian children, it finds that the crises a child encounters in his/her role adjustment could provide both potential and dangers for his/her development, depending on how the crises are managed within the child's social situation of development through his/her prism of *perezhivanie*. This finding overcomes the over-pessimistic view on children's crises among empirical studies, and meanwhile enriches the cultural-historical concept of crises. On the one hand, consistent with the cultural-historical theory, this paper agrees that qualitative leap in development normally takes place in periods of crises because crises are usually marked by painful experiences (Vygotsky, 1998). On the other hand, it further argues that the emergence of certain crises only signifies the potential for but does not guarantee the qualitative leap. It is because to get rid of the painful experiences, the individual might not always choose to solve the contradictions when the contradictions are not fully recognized and when other options have a more immediate effect. In this sense, the qualitative leap in development could hardly be achieved and negative influences might even occur.

The findings also provide implications for educational practices. Firstly, pulling academic tasks down to preschool might not be wise as it may decrease children's learning activeness and children can hardly gain great achievement when most primary school tasks are unchallenging (consistent with Broström, 2017; Dýrfjörð, et al., 2024; Gunnarsdottir, 2014). Secondly, the smooth adjustment does not always imply better development in the future because certain dangers might hide under the ‘smooth surface’; difficult school adjustment accompanied by crises does not always imply a dark future because certain potential might be hidden under the ‘turbulent surface.’ Therefore, more attention needs to be paid to how to identify, utilize, and amplify children's potential and how to identify and avoid the dangers or even transform the dangers into potentials. Finally, the same environmental change can be damaging for one child but can be developmental for another child, depending on the child's particular social situation of development. This questions the advocates for

improving the continuity or narrowing the gap between preschool and primary school environment without considering individual child's social situation of development.

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166 Cultural-historical research methodology in action: research across cultures and ages Part 2

Nikolai Veresov,¹ Sonour_Esmaeili,¹ Samran Daneshfar,¹

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: culturally diverse learning environment speech development, drama and crisis in development, agency

SHORT ABSTRACT

Cultural-historical research methodology in action: research across cultures and ages Part 2

The main purpose of the symposium is to present a contemporary cultural-historical research methodology that improves the experimental-genetic method developed by Vygotsky (Vygotsky, 1997) and his successors. The symposium will show how the principles and requirements of the research methodology are used to investigate processes of development across diverse cultures and ages (children and adults).

Three aspects of cultural-historical research methodology (theoretical framework, data collection and data analysis) will be discussed – 1) the selection of analytical tools (theoretical concepts) as a theoretical framework for particular research and genetic-analytical model (Veresov, 2019, Filippi et al., 2023); 2) principles of organisation and research design (Veresov, 2014, 2022) 3) genetic-analytical model and the matrix of data analysis (Filipi et al., 2023). It will be shown how these analytical means might help to formulate the research questions and how they were applied to frame the specific concrete research programs across diverse cultures and ages. The second part of the symposium includes three presentations. Presentation 1 will discuss the genetic-analytical model as a tool for designing the theoretical framework and formulating the research questions. Presentation 2 is about how the theoretical framework was used in studying the intellectual development of University culturally diverse students and Presentation 3 is on the cultural-historical study of the development of private speech in bi-lingual adult students studying English as a second language.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Cultural-historical research methodology: instruments for data collection and data analysis

Nikolai Veresov, Monash University, Australia

This presentation continues the discussion of the main aspects of the cultural-historical research methodology. The focus of this presentation is on 1) a general genetic-analytical model (Veresov, 2019), which allows to investigate the process of development in diverse socio-cultural contexts and 2) a matrix of cultural-historical analysis (Filipi et al., 2023), which can be a research tool of analysing the data disclosing the hidden dimensions of the process of development to explain the observable phenomenon.

The advantage of the genetic-analytical model is that being not descriptive, but the analytical one 1) it allows the process of development to be unfold in those components that are hidden from direct observation and recording and to be explained by exploring the causal relations that generated the observable phenomena and 2) it allows us to trace how the sociocultural environment becomes an actual source of psychological development.

The matrix of cultural-historical analysis makes possible a “step-by-step” analysis of a given social situation in all its important structural and dynamic components (social and individual planes of development, inter-and intra-psychological forms of psychological functions, transition within ZPD, transition from collective to individual forms of behaviour and activity, internalisation of the external cultural signs and operations).

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Cultural-historical research methodology: instruments for data collection and data analysis

Nikolai Veresov, Monash University, Australia

Keywords: cultural-historical research methodology, genetic-analytical model of data collection, cultural-historical matrix of data analysis

This presentation continues the discussion of the main aspects of the cultural-historical research methodology. The focus of this presentation is on two main parts of this methodological approach: 1) a general genetic-analytical model, which allows to investigate the process of development in diverse socio-cultural contexts and 2) a matrix of cultural-historical analysis, which can be a research tool of analysing the data obtained in terms of explaining them through concepts of development in cultural-historical perspective. The general genetic-analytical model built on Vygotsky's approach (Vygotsky, 2019) allows distinguishing the key concepts of cultural-historical theory that can be used as tools for analysing experimental data. This general analytical model is built from several elements:

- the social environment as objectively existing wide sociocultural context, independent of the individual;
- the social situation as a part of the social environment, an ongoing event the individual is involved in, a situation some moments of which are being refracted through the individual's perezhivanie;
- the social situation of development which arises (or do not arise) within the particular social situation depending on which aspects of the social situation are refracted through the individual's perezhivanie;
- perezhivanie as an indication of the individual refraction of certain aspects of the social situation the individual is an active participant;
- developmental outcome as a change in the course of development of an individual as a result of the social situation of development

The advantages of this model are that being not descriptive, but the analytical one 1) it allows the process of development to be unfold in those components that are hidden from direct observation and recording and to be explained by exploring the causal relations that generated the observable phenomena and 2) it allows us to trace how the sociocultural environment becomes an actual source of psychological development. In other words, it allows such kind of data collection when the process of development becomes visible, observable and analysable.

The second analytical tool based on this model is the matrix of cultural-historical analysis (Veresov, 2023). It is a research tool, an instruction guide of its kind, that allows the researcher to turn the lens on development (Veresov, 2014, 2022). The matrix makes possible a “step-by-step” analysis of a given social situation in all its important structural and dynamic components (social and individual planes of development, inter-and intra-psychological forms of psychological functions, transition within ZPD, transition from collective to individual forms of behaviour and activity, internalisation of the external cultural signs and operations). This presentation will be followed by two examples of how the genetic-analytical model and the matrix of cultural-historical analysis informed research on the development of private speech (Presentation 2) and thinking in culturally diverse adults (Presentation 3).

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Enhancing intellectual development of higher education students through social situations of development in the online learning environment

Sonour Esmaeli, Monash University, Australia

Higher education has embraced online teaching and learning for nearly two decades (Scherer et al., 2021), allowing learners to engage with peers and instructors from diverse cultural backgrounds. However, students and educators from various cultural backgrounds may not share the values and ideas used to develop online courses (Tapanes et al., 2009). Consequently, different learners may approach tasks in various ways, emphasising the need for course designs that are not one-size-fits-all (Wang, 2007). Establishing a culturally responsive learning environment becomes imperative to ensure equity in online education. Importantly, the focus of higher education should extend beyond mere learning; a teacher’s role is not only to transfer knowledge to learners but also to include strategies that encourage intellectual development. The present study aims to explore a culturally responsive online learning environment to support learners’ intellectual development in higher education. The cultural-historical theory was the theoretical framework, and the cultural-historical analytical matrix (Filippi et al., 2023) was utilised to analyse the data. This presentation will focus on how the cultural-historical analytical matrix was employed for data analysis. The matrix provided a step-by-step analysis of the emerging social situation, encompassing all structural and dynamic components and serving as a valuable tool for using concepts analytically.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Enhancing Intellectual Development of Higher Education Students Through the Social Situation of Development in the Online Learning Environment

Sonour Esmaeli, Monash University, Australia

Keywords: Social situation of development, culturally diverse online learning environment, intellectual development

Higher education has embraced online teaching and learning for nearly two decades (Scherer et al., 2021), allowing learners to engage with peers and instructors from diverse countries and cultural backgrounds. However, students and educators from various cultural backgrounds may not share the values and ideas used to develop online courses (Tapanes et al., 2009). Consequently, different learners may approach tasks in various ways, emphasising the need for course designs that are not one-size-fits-all (Wang, 2007). While many online learning environments strive for cultural neutrality, it is crucial to acknowledge that true cultural neutrality is unattainable (Starr-Glass, 2019). Despite the

perceived equal learning opportunities in online education, there is a belief that students from diverse backgrounds quickly adapt to online learning (Kumi-Yeboah et al., 2020).

Establishing a culturally responsive learning environment becomes imperative to ensure equity in online education (Woodley et al., 2017). Importantly, the focus of higher education should extend beyond mere learning; a teacher's role is not only to transfer knowledge to learners but also to include strategies that encourage intellectual development. In line with this, the present study aims to explore a culturally responsive online learning environment to support learners' intellectual development in higher education.

Employing a qualitative research approach, the study collected data through 58 hours of observations of recorded Zoom classes and interviews with three teachers and three students at an Australian university. Cultural-historical theory served as the theoretical framework, utilising social situations of development, dramatic collisions, and perezhivanie as analytical tools.

The study employed the cultural-historical analytical matrix (Filippi et al., 2023), consisting of two key components: the social situation and developmental outcomes. Uniqueness in the social situation is determined by identifying structure and dynamics. The last component is developmental outcomes, signifying observed changes in individuals' development.

The research question revolves around the social situation of development created by teachers to support the intellectual development of culturally diverse online learners. The collected data was in the form of examples derived from observing online classes. This presentation will focus on how the cultural-historical analytical matrix was utilised to analyse the data.

The first component of the matrix is the social situation composed of structure and dynamics. The structure comprises pre-history, participants, tasks, and cultural tools. In any given example, these components were identified. The pre-history was determined by identifying the immediate tasks that strongly influenced how a particular social situation developed. For instance, in most examples, students were required to read articles before class, allowing the obtained knowledge to lead to the emergence of different social situations. Then, the initial stage was determined, signifying the commencement of a social situation.

The second component of the social situation is dynamic. To identify the dynamic, each example was divided into different parts based on external and psychological changes. External changes were manifested by identifying those who took the leadership position, moments of dramatic collisions, and any turning points in the tasks. Mostly, teachers took the leadership position in the main session while introducing the tasks; then, it was taken over by students in the BORs. Psychological changes were analysed through analytical tools, including the social and individual plane of development, inter and intra-psychological forms of development, social situation of development, and perezhivanie. When students were assigned to the BORs, a micro-social situation, an inter-psychological form of thinking, was created because students were encouraged to think and discuss together to complete the given tasks. As students' cultural and historical backgrounds were different, they refracted the task differently using their unique perezhivaniya and provided different responses. When students joined the main session, teachers shared students' responses, and a system of interaction emerged between students and teachers, leading to the emergence of other social planes of development. These created social situations paved the way for the emergence of the social situations of development.

The last component of this matrix was the developmental outcome. It should be noted that not all changes manifested individuals' development; rather, the focus was on identifying those dialectical moments that promoted individuals' development, including contradiction and a transition to a new qualitative level. Sometimes, students were able to perform intellectual activities at the end of the session that they were unable to do in the beginning, demonstrating a change in students' thinking. The matrix offered a step-by-step analysis of the social situation that emerged, encompassing all structural and dynamic components, which served as a valuable tool for using concepts analytically.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

The private speech of adult multilingual English learners: A cultural-historical approach

Samran Daneshfar, Monash University, Australia, University of Zanjan, Iran

Research in second language acquisition explores methods for acquiring a new language, improving proficiency, and enhancing communication skills. Achieving the ability to think in a language is considered the pinnacle of language mastery. Private speech, an individual's out-loud self-talk during activities, may play a crucial role in facilitating the use of a new language for intramental purposes. This study focuses on the private speech of bilinguals learning English as a third language, examining adult multilingual English learners during problem-solving tasks within Vygotsky's cultural-historical theory. The cultural-historical framework allows the study of private speech as a higher psychological function mediated by language, positioning it between social speech and inner speech. Employing a developmental/genetical approach, the research investigates private speech as a dialectical unity of explosions/utterances and pauses/silences. Fifteen adult multilingual English learners with Kurdish and Persian backgrounds participated in problem-solving tasks, eliciting private speech. Interviews revealed the social-communicative aspects of private speech and the manifestation of inner forms of speech during pauses. The study underscores the importance of the interrelationships between explosions and pauses in the problem-solving process. Overall, the research provides valuable insights into the role of private speech in the development of multilingual English learners' skills and emphasizes the significance of adopting a developmental approach in understanding the dialectical unity of private speech, social speech, and inner speech in the language learning context.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

The Private Speech of Adult Multilingual English Learners: A cultural-historical Perspective

Samran Daneshfar, Monash University, Australia, University of Zanjan, Iran

Keywords: Private speech, higher psychological functions, cultural-historical research methodology

Research in second language education has examined a variety of methods for learning a new language regarding improving learners' proficiency and enhancing their communication skills. It is argued the development of a new language starts from the interaction of the learner with others (Lantolf et al., 2018) which is rooted in Vygotsky's cultural-historical perspective on human psychological development. Proficiency in a new language could be supported by the ability to think in that language, and this thinking capability could become an important aspect of learning a new language. In addition, thinking in a language is regarded as the highest level of language development. However, even adept learners may not inherently acquire this ability. Private speech (PS), an individual's verbalized self-talk during an activity, whether in isolation or the presence of others, might play a crucial role in facilitating the utilization of a new language for

instrumental purposes. The present study investigates the private speech of bilingual adult students studying English as their third language.

Cultural-historical theory (CHT) framed this study from two important theoretical perspectives. First, private speech is theorised as a higher psychological function (HPF) characterised by three general features of all HPFs: social by their origin, mediated (through cultural signs) by their construction, and voluntary by their way of functioning (Luria, 1980). Secondly, private speech holds an intermediary position within the process of speech development from social speech to inner speech/verbal thinking (Vygotsky, 1987). The second perspective means that before the internalisation of speech, it passes from the intermediary stage of PS.

Following the cultural-historical framework, this study undertakes a developmental/genetical approach by investigating private speech not as a standalone out loud phenomenon but in a dialectical unity of a series of explosions/utterances, followed by specific pauses/silences (Vygotsky & Luria, 1929). This developmental/genetical method of analysis highlights the intermediary position of private speech in a developmental process from social speech to inner speech. This results in a dialectical understanding of the study of private speech proposing that during the process of multilingual English learners' private speech, elements of social speech might manifest. In addition, the existence of inner forms of speech could be investigated from specific pauses.

This research undertakes a cultural-historical research methodology (Veresov, 2014) for investigating the private speech of adult multilingual English learners while doing problem-solving tasks. The method following a cultural-historical framework included private speech as its theoretical concept and experimental principles (as formulated and unpacked by Flear and Veresov, 2018); Veresov (2010a, 2010b, 2014)) of *buds of development*, *drama/intellectual dilemma*, and *cultural tools of development*. The research specifically explores the overall form, place, and regulatory role of multilingual English learners' private speech during problem-solving tasks. The study involved 15 adult participants who were multilingual English learners with backgrounds in Kurdish and Persian. A series of problem-solving tasks in English, varying in level of difficulty, were employed to elicit private speech from the participants. In addition to the tasks, immediate interviews, and video-stimulated recall interviews (within 24 hours) were conducted.

Regarding the intermediary position of private speech during the process of speech development and its dialectical unity with social and inner forms of speech, findings highlighted the existence of different manifestations of both these forms in multilingual English learners PS. Social aspects of speech were found in the form of social-communicative speech including self-directed questions in response to the challenges faced, addressing the self as the other, and othering the self. Moreover, the findings highlighted the manifestation of inner forms of speech during pauses. These second findings included examples such as 1) going deep into the mind, 2) analysing the tasks, and 3) remembering. Finally, interviews revealed that participants consistently emphasized the significance of the interrelationships between explosions and pauses in the problem-solving process.

This study provides insights into the context of English language learning by highlighting the significance of private speech as a beneficial mechanism in fostering the skills of multilingual English learners. It also underscores the importance of employing a developmental approach in examining private speech, allowing researchers to gain a deeper understanding of the dialectical relationship between private speech, social speech, and inner speech.

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168 How is children’s agency enacted during play? -The play sequence in a children’s after-school club

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Presentation: Poster presentation (presented in person at the congress)

Theme: Promoting inclusiveness in social practices

Keywords: agency sociomaterial approach resilience

SHORT ABSTRACT

Adopting the sociomaterial approach (Fenwick, Edwards, & Sawchuck, 2012) as its theoretical framework, this study examines children’s play activities in a children’s after-school club (ASC). We focus on a case in which a girl named Maki, who was initially considered vulnerable, came to be regarded as a positive presence. We observed how her agency was enacted in play and how it related to her sense of resilience (Masten, 2001; Ungar, 2018).

The research site was a private ASC. Data were collected over 3 years of participant observations and semi-structured interviews with staff. During the study period, we attended the club once per month, staying for nearly 4 hours from the pre-meeting to closing.

Maki’s agency (for example, her expressed desire to “ride the giant swing” and “make pottery plates”) was based on existing attributes, such as her own knowledge and internet search skills and the knowledge and skills of the staff; it was also based on the physicality that she experienced during play (e.g., vestibular sensations experienced on the zip line and climbing rope, and touch sensations experienced during sand play) and in relation to various materials in the ASC that had no specific use. Moreover, this agency was infinitely reasserted—for example, materials from prior projects (e.g., clay soil dug up to build something) were reused in subsequent agency formation (e.g., the expressed desire to make a pottery plate).

EXTENDED SUMMARY

Purpose

The need to provide a safe space in which children may be accommodated after school is a salient social issue in Japan, particularly for children in adverse environments, such as children from low-income backgrounds and children who are victims of abuse. Hirose and Moro’s (2021) ethnographic research concerning children who live in poverty revealed that many children essentially drift or wander around their neighborhoods, seeking out places in which they can pass the time after school. The authors suggested that few established after-school programs or activities are available to these children.

Children’s after-school clubs (ASCs), facilities for elementary school students whose parents are not at home due to work or other reasons, can be beneficial for children experiencing adversity. In Japan, ASCs are typically regarded as places in which children can spend their time autonomously, unfettered by the strict rules and pressure to learn associated with school and unburdened by

adverse family environment factors; in these places, children can freely engage in and immerse themselves in play.

In this paper, adopting the sociomaterial approach (Fenwick, Edwards & Sawchuck, 2012) as a theoretical framework, we describe how children in adverse environments can enact their agency during play in ASCs. We focus on a case in which a girl named Maki, who was initially considered vulnerable, came to be regarded as a positive presence. We observed how she enacted her agency during play and how this related to her sense of resilience (Masten, 2001; Ungar, 2018).

Method

The study site was a private ASC. Data were collected over 3 years of participant observations and semi-structured interviews with staff. During the study period, we attended the club once per month, staying for nearly 4 hours from the pre-meeting to closing. The club is typically attended by approximately 20 elementary school-aged children and is staffed by a team of four.

Result and Discussion

The ASC's staff do not implement programs or influence the children with respect to the type of play in which they should engage, with the exception that they encourage children to play outdoors or engage in crafting while at the club. Mr. Z, the ASC's director, reported that he abandoned most programs when he began his work. Instead, he intentionally placed various items with unspecified functions (e.g., scraps of wood, crushed cardboard boxes, and plastic garbage bags) throughout the facility as potential catalysts for the children's play. Only when children were already attracted to the "objects" did he advise how they might make their ongoing play more engaging. Some items became playthings for the children as Mr. Z had intended; other items attracted their interest in an unexpected manner. Moreover, children occasionally used items that Mr. Z had not anticipated would serve as potential playthings.

The implementation of such an approach requires practitioners to be tolerant of uncertainty, considering the difficulty in predicting how children's play might unfold. What impact might such an environment have on a child who grew up in an adversarial environment and was perceived as vulnerable?

One of the children, Maki, was extremely nervous and struggled with emotional regulation, which was a particular source of concern for Mr. Z. However, after joining the ASC, Maki actively participated in outdoor activities and exhibited healthier behavior. Such behavior may be considered a sign of her enhanced "resilience." Maki occasionally told the ASC's staff what she wanted to do—for example, "I want to ride on the giant swing" or "I wish I could bake a plate!"

Maki's agency was based on existing attributes, such as her knowledge and internet search skills and the knowledge and skills of the staff; it was also derived from the physicality that she experienced during play (e.g., vestibular sensations experienced on the zip line and climbing rope, and touch sensations experienced during sand play) and in relation to various materials in the ASC that had no specific use. Moreover, this agency was infinitely reasserted—for example, materials from prior projects (e.g., clay soil dug up to build something) were reused for subsequent agency formation (e.g., the expressed desire to make a pottery plate).

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171 The meaning of meaningful education: mapping the literature from a CHAT perspective

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Meaningful education Literature review CHAT perspective

SHORT ABSTRACT

Researchers generally understand meaningful education to connect the new contents, ideas and skills that are taught in school on the one hand to students' out-of-school lives on the other. In considering the experience of meaningfulness as a possible solution to the problem of low school engagement among adolescents, we study the following research question in this literature review: What insights does the literature provide on how experiences of meaningfulness can be facilitated in the classroom and for whom are these experiences meaningful? We do so from a CHAT perspective as this helps us to further understand why what is meaningful to one student, may not be meaningful to another. A systematic literature review is performed. Through a directed content analysis, 155 publications were examined to identify what connections were made between school and out-of-school phenomena, how, and for whom these were meaningful. Four overarching classroom strategies to facilitate experiences of meaningfulness among students were identified: referencing, traveling, imagining and distributing meaning. Also, a CHAT-based analysis of the challenges that each of these strategies are accompanied by are discussed. We conclude that the four overarching strategies should be alternated in teaching practices. Also, we noted that only few studies on meaningful education examined the engagement of individual students, let alone while taking into account the situated nature of students' participation in school. An implication for future research is to study this more thoroughly.

EXTENDED SUMMARY

Background

Meaningful education has repeatedly been suggested as a solution to the widespread problem of low school engagement among adolescents (OECD, 2016). Researchers generally understand meaningful education to connect the new contents, ideas and skills that are taught in school on the one hand to students' out-of-school lives on the other (e.g., Sharkey et al., 2016). Yet, what is meaningful to one student, may not be meaningful to another, because meaningfulness concerns relevance and relatedness. CHAT research helps to understand this by pointing out that each student brings their own set of experiences, goals, norms and values to class that a connection may or may not be made to (Akkerman et al., 2021). In that sense, classrooms are inherently diverse (Gutiérrez et al., 1999), leaving both scholars and teachers struggling to identify how experiences of meaningfulness can be fostered in school, when and for whom (e.g., Mortimer et al., 2010).

Aims

This review aims to examine the following research question from a CHAT perspective: What insights does the literature provide on how experiences of meaningfulness can be facilitated in the classroom and for whom are these experiences meaningful? Ultimately, we hope to expand CHAT’s theoretical insights into meaningful education while providing teachers with guidelines in selecting strategies to foster experiences of meaningfulness in their classrooms.

Methods

To find relevant studies, search strings on the population of adolescent students in formal education, learning experiences and school engagement -considered an indicator of whether or not adolescents experience their education as meaningful- were combined. Literature was searched for in four relevant databases, initially yielding 12.242 unique results. The articles were assessed based on the inclusion criteria that can be found in Table 1, and citation tracking and expert consultation were performed.

Table 1

Inclusion criteria

	Included
Research focus	Studies that are concerned with the school, learning, classroom or academic (dis-)engagement of adolescents
Role of education	Studies that are concerned with intended learning experiences that aimed to connect students’ school and out-of-school lives
Setting	Studies that are performed in the context of formal secondary education
Quality of publication	Publications that are peer-reviewed and included a methods section
Publication date	Publications that are published between January 1, 2000 and May 6, 2021
Language	Publications that were published in English
Accessibility	Studies that were accessible via the online or offline library of the authors’ university

Table 1: Inclusion criteria

This led to a final selection of 155 articles. A directed content analysis was performed (Hsieh & Shannon, 2005) to identify what connections were made between school and out-of-school phenomena, how, and for whom these were meaningful. Four overarching strategies and accompanying challenges were identified.



Results

Referencing

Teachers implementing this strategy make a connection –a reference– to what students are presumably already familiar with or interested in (e.g., Grover et al., 2019). They do so by connecting the learning content to students’ out-of-school lives (e.g., Grover et al., 2019); or by integrating phenomena that are usually only associated with students’ out-of-school lives into the classroom (e.g., by means of gamification; also see, e.g., Jones et al., 2019). Yet, the students may not identify with the out-of-school phenomenon a connection is made to, which was found not to foster experiences of meaningfulness. In this sense, the referencing strategy can be prone to fail and appears to require knowing one’s students quite well.

Traveling

In this strategy, teachers create learning experiences in such a way that they are not confined to the classroom so that meaning can travel from school to out-of-school contexts and back again. This is for example done by the inclusion of out-of-school actors in the learning experience (e.g., Merga, 2020; Sharkey et al., 2016). However, the norms, values and goals of some the intended out-of-school actors (e.g., parents) may not align with this strategy, thereby presenting a possible challenge when wanting to implement this strategy. Also, some students may prefer to have their school and out-of-school lives remain separate realms.

Imagining

This strategy is characterized by having students imagine the meaning of what they learn in relation to out-of-school situations by having them try out an authentic role that is usually only associated with (future) out-of-school lives (e.g., a scientist, a farmer), for example by means of inquiry-based or project based learning (Navarrete, 2013; Tobias, 2015). Yet, especially with respect to inquiry-based learning, when students find out that they do not identify with the idea of becoming a researcher, another round of inquiry-based learning will no longer facilitate their experience of meaningfulness.

Distributing

In this strategy, students are expected to co-construct the learning experience with the teacher by integrating important aspects from their out-of-school lives into the development of the learning content or activity. This is for example facilitated by flipping the classroom or having relatively unstructured discussions on the learning content (e.g., Albright, 2002; Kong, 2015). Yet, how to facilitate experiences of meaningfulness in this way for students who prefer their school and out-of-school lives to remain separate realms, remains a challenge.

Conclusions

The review suggests that no learning experience is likely to be meaningful to everyone and four strategies to facilitate experiences of meaningfulness should therefore be alternated. Additionally, only few studies on meaningful education examined the engagement of individual students from a situated perspective. An implication for future (CHAT) research is to study this more thoroughly.

Interaction with participants

Participants are invited to ask questions and share personal experiences to identify any blind spots we may have.

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178 Theory and intervention for inclusion: young dialogues between CHAT and other traditions

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: vulnerabilization inclusive education developmental potentialities

SHORT ABSTRACT

The symposium is aimed at representing the fresh perspective of younger multicultural in training researchers, from MA to PhD, about the potentialities of CHAT in dialogue with other theoretical and empirical traditions. The contributions span across North and South America, Europe and Middle East discussing how CHAT can be used to new understandings of typical problems of development and school inclusion: social inclusion of vulnerable students; inclusion of migrant students; inclusion of foster children; and inclusion of children with selective mutism. Each paper is combining a fundamental concept of CHAT with a different theoretical perspective. The paper "Education, Art and Social Inclusion: Psychology's role in educational contexts" discusses the link between theory and intervention with vulnerable Brazilian students based on the dialogue between Vygotsky's theory of imagination and Martin-Barò's psychology of liberation. The second paper "Inclusion of Syrian students in need of special support in Norwegian schools" combines CHAT and intersectionality theory to discuss the ambivalences of the inclusive practices of migrant children. The paper "Exploring the Intersection of Vygotsky's Sociocultural Theory, Attachment Theory, and the Development of Foster Children" advances an argument made by van der Veer and van IJzendoorn (1988) by assessing the multifaceted cognitive and emotional developmental vulnerabilities of foster children through a CHAT-attachment theory fusion framework. Finally, the paper "The Importance of Analysing Selective Mutism Through the Prism of Perezhivanie" focuses on a phenomenon that is currently framed by a hegemonic medical model and interprets it using the concept of perezhivanie to imagine more effective interventions.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Education, Art and Social Inclusion: Psychology's role in educational contexts

The current and future challenges related to inclusion are diverse, particularly in the Brazilian context, where social inequality has reached even higher levels post-COVID-19. Situated within the subtheme of promoting inclusiveness in social practices, this work aims to discuss and reflect on the contributions of research-intervention-art in addressing the poverty experienced by students from the outskirts of large cities in Brazil. The methodology employed in the study was research-intervention-art (Souza, 2021), whose theoretical and methodological foundations are grounded in Cultural-Historical Psychology, especially drawing from the contributions of Vygotsky. Meetings were

conducted with approximately 60 students from the 2nd and 3rd years of evening high school at a public state school located on the outskirts of a city in the interior of the State of São Paulo. During these sessions, music, paintings, and photographs were utilized to stimulate discussions led by school psychologists, facilitating the expansion of meanings for the participants. The records of these encounters were documented through field diaries produced by psychologist-researchers after each session. The results indicated that these meetings fostered new meanings about the life conditions of the students, enabling them to envision alternative approaches to addressing the challenges experienced in their daily lives and concerning the future.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Education, Art and Social Inclusion: Psychology's role in educational contexts

The current and future challenges related to inclusion are diverse, particularly in the Brazilian context, which has prompted efforts within educational settings in Brazil, aimed primarily at overcoming social inequalities (Arretche, 2015). Consequently, this work falls within the subtheme of promoting inclusiveness in social practices (Souza, 2022). The central objective of this study is to discuss and reflect on the contributions of research-intervention-art in addressing inequality in educational contexts. We seek to understand how this research approach contributes to the creation of spaces for adolescents to reflect on their current lives and future prospects.

The research group PROSPED (Processos de Constituição do sujeito em Práticas Educativas), to which this work is linked, has been conducting research in school contexts for 17 years, particularly in public schools, involving all school stakeholders, including students, teachers, administrators, families, and the school community. The research setting for this study has been the group's field of operation since 2016. The school serves approximately 1,500 students, aged between 10 and 18, operating in three periods: morning, afternoon, and evening. It is noteworthy that our research group's involvement spans all three periods of operation.

The methodology adopted in the study is research-intervention-art (Souza, 2021), grounded in Cultural-Historical Psychology, particularly drawing from the contributions of L. S. Vygotsky, as outlined in the book "Psychology of Art" (1925/1999). Although our engagement aims to encompass the entire school, for this presentation, we focus on a segment of our work with adolescents aged 16 to 18, in the final stage of Basic Education. Meetings were conducted with approximately 60 students over a period of 1.5 years, during evening classes at a public state school on the outskirts of a city in the interior of São Paulo. Artistic materials, such as music, paintings, and photographs, were employed during these sessions to mediate discussions with the students.

Initially, the objective of the meetings with the students was to create spaces for reflection on the future, particularly regarding their post-Basic Education plans. However, it was observed that the adolescents were eager to express their concerns about changes in the school curriculum that were directly impacting their daily organization at school. Following this realization, it was proposed that the students compose a letter addressed to certain government entities, indicating their dissatisfaction with the recently implemented reforms. It is noteworthy that the students' primary complaint was that the changes further deepened inequalities, particularly regarding access to quality education. The results indicated that the creation of spaces through research-intervention-art significantly expanded the awareness of the adolescents. They began to better comprehend the

various forms of inequality that permeate their lives, allowing for a more critical analysis of the reality in which they live.

However, we conclude that overcoming inequality requires more than reflection and awareness on the part of those affected by it; it necessitates concerted efforts to provide concrete conditions for individuals to develop, enabling them to take control of their narratives and broaden pathways or possibilities (Tateo, 2019). In this regard, we advocate that a more just and inclusive society can only be achieved through collaborative actions involving the collective of the school community, including policies aimed at promoting the development of adolescents.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Inclusion of Syrian students in need of special support in Norwegian schools

Among immigrants who move to Norway, there is a considerable number of children in need of special support due to a variety of special needs. However, research on their social and educational experiences in Norwegian compulsory education is scarce. This study explored the experiences of Syrian students in need of special support in Norwegian schools. The study was based on qualitative study with five Syrian families (children and parents). We conducted a thematic analysis using Vygotsky's Cultural-Historical Theory, intersectionality theory and the social constructionism perspective as the analytical framework to identify the themes. The study showed that children are having positive experiences at school when comparing them to their experiences in Syria, but poor peer relations. Syrian children and their families in Norway reported having varied emotions of both gratitude for not having to hide the special need of their children, as well as uncertainty about what to do or how to seek help. The origins of these conflicting feelings seemed to be related to language barriers, contradictory cultural traditions, a lack of understanding of the Norwegian child welfare system, and a lack of transparency about some of the issues they experience owing to a fear of being misunderstood by the child protection services.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Inclusion of Syrian students in need of special support in Norwegian schools

The educational and social inclusion of immigrant children with special needs is not only impacted by the special needs themselves or lack of knowledge about the host country, but by the implications of the deficit perspective of diversity that categorizes them as different, disadvantaged, and vulnerable (Gogolin, 2011; Nicol et al, 2013; Rieber and Carton, 1993). One of the immediate everyday implications of this deficit perspective, is for example, planning educational activities that do not meet students' actual levels and thus fail to foster their critical thinking or motivate them to reach their full potential (Nortvedt & Wiese, 2020). "Immaturity of children is a biological fact but the ways in which this immaturity is understood and made meaningful is a fact of culture" (James and Prout, 1997, p.7). In the context of this project, it is relevant to use the same expression to talk about children with special needs, this project acknowledges the idea that having a special need is a biological fact but the way we respond to this need is socially and culturally constructed; so, the culture could serve to either being nourishing or constraining. This is in line with Vygotsky's ideas about primary disability and secondary disability. Vygotsky explains that while primary disability has biological origins, secondary disability is due to social factors (Vygotsky, 1993). This means that children's position in society could lead to secondary disabilities. Therefore, changing the negative

social behavior towards children with special needs should be a primary goal of the inclusive education policies. Vygotsky's cultural-historical theory stands in contrast to developmental psychology theories as it gives a special attention to the vital role of social interactions and the social tools (e.g language) in child development (Vygotsky, 1993; Daniels, 2009). It emphasizes the significance of cultural diversity and individuals' differences and so provides a relevant and important foundation for understanding and implementing inclusive education. In this paper, we want to highlight that having special needs could be compensated by culturally sensitive inclusive education strategies and by creating possibilities for various types of participation that focuses on children's qualities and how to strengthen those qualities.

By having the right to participate and acknowledging children's agency as guiding principles we reject the deficit perspective in interaction with children and families of immigrant backgrounds. Also, exploring children's perceptions and combining them with parents' perspectives can provide a deeper understanding of their experiences and generate suggestions for developing teaching and support services to improve inclusion of immigrant students.

Vygotsky's cultural historical theory together with social constructionism and intersectionality, allow us to provide a comprehensive analysis to children's experiences, and we see that it is necessary to understand how cultural and historical factors shape the educational experiences and inclusive practices in schools, and how different concepts and phenomena such as children's participation, disability, and agency change contextually.

There are many important contributions of this study; contributions of this study; it advances knowledge on a topic that is almost neglected; it advocates for children's participation by involving children as primary sources of data , it can inform the development of inclusive education frameworks at the European level, it advocates for children's participation in research by involving children as primary sources of data and combining children's and parents' views to get a thorough insight into children's experiences. Moreover, it provides an understanding of how various institutional and cultural factors impact the lives of immigrant children and calls for open and transparent cross-cultural collaboration and dialogue among children, parents, and teachers. The current study acknowledges the different services that are offered to immigrant children in need of special support which are appreciated by children and parents who participated in this study. However, it raises an important concern as it shows that until mastering the Norwegian language, accessing these services is difficult and related information is unclear. The question that raises here, which indeed needs further investigation, is to what extent/in which way we can call it as a successful inclusion when mastering the language is a prerequisite, yet unrealistic, when the service receivers are newcomers or in need of special support?

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Exploring the Intersection of Vygotsky's Sociocultural Theory, Attachment Theory, and the Development of Foster Children

While Vygotsky's theories on the social nature of development are highly regarded and deeply compelling, they tend to focus on cognitive development rather than emotional development. As a result, many researchers have sought to find a compelling theoretical complement for cultural-historical activity theory that can account for emotional development and create a holistic picture of all forms of development within a child. This theory would be an

invaluable resource when evaluating the complex needs of children with severe environmental disruptions such as abuse and neglect. Attachment theory is a compelling candidate for such a merger, as it primarily focuses on affective development and early relationships. This article directly places Vygotsky's beliefs on emotions and emotional development into dialogue with attachment theory through the discussion of studies of the emotional development of foster children, a population whose environment makes them uniquely vulnerable to developmental delay. Once this has been completed, this paper applies the fusion of CHAT and attachment theory to foster children and discusses Vygotsky as a theoretical lens for understanding their particular developmental vulnerabilities. Implications for treatment are discussed, and future studies are proposed that explicitly assess the validity of the fusion framework.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Exploring the Intersection of Vygotsky's Sociocultural Theory, Attachment Theory, and the Development of Foster Children

Vygotsky placed equal importance on healthy development of both emotional and cognitive functioning, but spent less time on the role of “non-cognitive adult-child interactions” (van der Veer & van IJzendoorn, 1988). From the few writings we have, we can establish that Vygotsky viewed emotions as inherently sociocultural (Cong-Lem, 2021). Vygotsky's developing child learns to name their emotions and recognize them in others, which helps them engage in joint activity with others. The relationship between emotions and cognition is so close that disruption in one causes disruption in the other. If the two are imbalanced, the result will be pathological in nature; when properly balanced, emotional intelligence and skills have actually been shown to correlate strongly with grades and academic achievements (MacCann et al., 2020). Van der Veer and van IJzendoorn looked to attachment theory to understand the emotional shifts underpinning Vygotskian development. Secure attachments require sensitivity from the adult, defined as the adult's ability to react appropriately and efficiently to their child's behavior (van der Veer & van IJzendoorn, 1988). Sensitivity allows the infant to see the adult as a “safe base” from which they can explore. In other words, affective interactions in early childhood lay the initial groundwork for later cognitive work. As the child begins exploring the environment, adult-child interactions will become more cognitive in nature, and emotional interactions begin to serve a supportive role to rational thought (van der Veer & van IJzendoorn, 1988). A new, cognitively-focused sensitivity is now required of the adult: to appropriately facilitate the ZPD for a child, the adult must be able to react in an appropriate, timely way to the behavior of the child. Secure-attachment mothers responded consistently to their child's questions during a problem-solving task (van der Veer & van IJzendoorn, 1988). Insecurely attached mothers, however, were less likely to give advice or to persist in providing advice, demonstrating the earlier claim that affective insensitivity often pairs with cognitive insensitivity, and insecure attachment early in life results in a less supportive and less effective learning environment. The close ties between cognitive and emotional development therefore double the child's vulnerability to developmental delays in an unstable home.

An arena for application of the CHAT-attachment fusion is the foster care system. Approximately 40% of preschool-aged foster care children show symptoms of developmental and mental health disorders, while 62% show disorganized or insecure attachment (Vasileva & Petermann, 2018). Attachment theory suggests these high rates of disorganized attachment should coincide with stunted

emotional development. A 2005 study proved exactly that: foster children were significantly poorer at recognizing and understanding emotions than their non-foster counterparts (Pears & Fisher, 2005). Furthermore, these children demonstrated poorer theory of mind, a key component of social relationships and healthy play (Pears & Fisher, 2005). In “Problem of the Environment,” Vygotsky unintentionally describes the developmental plight of foster children. For some portion of their childhood, foster children have been in an environment without an “appropriate ideal form” of emotional understanding and intelligence, meaning the neglected or abused child will be primarily exposed to other children at a similarly primitive stage of emotional development (Vygotsky, 1934/1994). A 2020 study by West et al. suggests, however, that once the ideal emotional form does appear in the environment, it can redirect development towards the healthiest possible outcome. Younger children typically formed a secure attachment more quickly than their older counterparts (West et al. 2020). The younger children have spent less time in a dysfunctional environment than their older peers. They will likely have more primitive language and emotional skills, making them less likely to fully understand the dysfunctions of that environment or to have held responsibilities or duties within said environment. West et al. (2020) also found that having fewer foster kids in the home increased the odds of a secure attachment. I propose two reasons for this. Firstly, given that foster children are more likely to attribute hostile intent to neutral interactions (Pears & Fisher, 2005), the decreased parental time per child may be more easily interpreted as a signal to avoid engaging with the adult. Secondly, the presence of similar rudimentary “forms” might prompt the child to turn to their peers instead of the new parental figure, as these children would likely be speaking a similar emotional “language” (Vygotsky, 1934/1994). Age-appropriate learning materials in the home positively related to secure attachment (West et al., 2020). CHAT-attachment fusion suggests that the materials indicate sensitivity from foster parents, who would need to be aware of the child’s current state in order to gauge appropriateness. Foster parents might be more likely to provide said materials after affective trust has been established. These materials provide common ground for foster parents and children to perform joint tasks, allowing scaffolding to occur while trust is built.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

The Importance of Analysing Selective Mutism Through the Prism of Perezhivanie

Selective mutism is defined in the DSM-5 as “a psychiatric disorder of childhood characterised by consistent failure to speak in specific situations despite speaking in others” (American Psychiatric Association, 2013). This failure to speak often occurs in schools, a setting in which speaking is not only encouraged but essential to an individual’s academic and social development. This condition, therefore, has significant short-term and long-term impacts on said development. Selective mutism is a rather complex condition with a wide range of influencing factors and etiological explanations. Despite this, the body of research on selective mutism is limited, particularly regarding its treatment and intervention plans. Many of these treatment plans focus on the observable features or signs of selective mutism, however, fail to acknowledge biological, social and environmental details of the individual. Therefore, this article aims to consider how the concept of perezhivanie can be applied to selective mutism to lead to more effective intervention. Through a literature review the current research context is established before using Cultural-Historical Activity Theory (and defectology) to examine the importance of an individuals’ experiences and the etiology of their selective mutism in its treatment. This led to the conclusion that selective mutism cannot be studied in isolation from the

individual experiencing it, but rather that their perezhivanie should be central to the development of a treatment plan.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

The Importance of Analysing Selective Mutism Through the Prism of Perezhivanie

In schools, “language is used in distinctive ways, becoming the essential medium for mastering tasks that are difficult if not impossible to learn by observation” (Cole & Packer, 2016, p.37), thus, the inability to speak within this context has a profoundly negative impact on an individual’s academic (and social) development in this setting (Cohan, et al., 2006). Moreover, studies on the long-term effects of selective mutism (SM) have found that “early detection and treatment are needed to prevent symptoms persisting and other psychiatric disorders from developing” (Koskela, et al., 2023, p.12). The limited amount of research on SM as well as the complexity of its etiology impacting the generalisability of treatment plans has made it difficult to implement effective treatments. These factors suggest that a better understanding of the individuality of SM and its treatment is needed leading to the following research question: How can the concept of perezhivanie be used to understand the complexity of SM as a condition and thus improve its treatment?

SM is a relatively rare speech condition of which etiology has been debated since it was first identified in the late 19th century (Cohan, et al., 2006). It has been defined by the American Psychiatric Association (2013) as “a psychiatric disorder of childhood characterised by consistent failure to speak in specific situations despite speaking in others”.

The etiology of SM is uncertain and has been debated within literature. It is, however, agreed that it is heavily influenced by sociocultural factors (Slobodin, 2023). Cohan, et al. (2006) conducted a literature review in the field of SM and outline the most commonly presumed causes as: genetic factors (e.g., family history of social phobia or depression), psychological factors (e.g., anxiety and oppositionality), developmental factors (e.g., developmental immaturity and speech abnormalities), and social and environmental factors (e.g., trauma, family instability).

As the understanding of SM has developed, the treatment approach has also been adapted. Some lean towards pharmacological interventions, however, regarding therapy, there has been an increased use of cognitive behaviour therapy rather than psychodynamic techniques, as well as the implementation of social skills training, parent child interaction therapy and intensive group treatments, in more recent years (Boneff-Peng, et al., 2023).

Due to the limited research in this field, children with SM are often treated with individualised education plans based on criteria aimed at individuals with Speech/Language Impairment, Other Health Impairment, and Emotional Disturbance/Disability (Boneff-Peng, et al., 2023). While there may be commonalities between SM and these conditions, they are not one and the same and thus, require different treatment. Moreover, Hipolito, et al.’s (2023) meta-analysis demonstrated that while treatment plans assessed a wide range of speaking behaviours (symptoms of SM), their analysis of social, biological, and environmental factors is rather limited. Of the 25 studies, only seven included the age of onset of their participants, nine included the duration of SM prior to treatment, seven included whether participants were bi- or multilingual, and 19 included comorbidities.

This highlights the issue that most studies on SM focus on the observable features and symptoms of the condition in their description of the sample (the individuals with SM) and do not include details about the individuals’ etiology of the condition (Hipolito, et al., 2023). However, according to

cogenetic system theory, the condition must be examined considering the events and developmental history which has led to those current expressions.

Due to SM being primarily socio-culturally influenced, according to perezhivanie, not a single experience of SM is like another; each is entirely unique. Thus, the specific situation or environmental aspect(s) which causes an individual to develop SM cannot be studied in isolation from the child themselves. This also relates closely to the concept of 'defectology' used in Soviet psychology to understand the multifaceted relationship of biological, psychological and social factors in influencing developmental deviations and psychological disorders (such as SM) (Van der Veer & Valsiner, 1991). Influenced by the work of Vygotsky, this approach emphasises the importance of a holistic approach to understanding and treating such conditions.

CHAT and the concepts of perezhivanie and defectology suggest that we cannot blindly administer general SM treatments or interventions to any individual, simply because it has proven effective on others. Rather, we must refract the potential intervention through the prism of the child's perezhivanie and ask ourselves whether it addresses the etiological factors of this specific situation. Many SM studies to date fail to acknowledge these essential details and thus, are not considering perezhivanie in their treatments (Boneff-Peng, et al., 2023; Hipolito, et al., 2023). While the etiology may be difficult to determine, essential details such as SES, immigrant background, multilingualism, comorbidities, etc. can certainly be identified, creating a deeper understanding of the individual condition and therefore must be included within future studies on SM.

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179 Individual-collective voice & progressive action: barriers & possible solutions to activist research

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SHORT ABSTRACT

In this paper, we argue for co-production of strategies to mitigate the needs of the minoritized oppressed communities through community-based consultations. We do so by drawing attention to how oppressive histories, structures and discourses in England have created and reproduced classed, racialized divisions and identities pertaining to schooling, but also generally in society which are manifest in current ways of thinking about social justice research and activity. The approach for documenting the perceptions of the participants drew on previously developed methodologies exploring how narratives and identities (Black and Williams, 2013) inform decision-making, and took an intersectional approach to address how inequalities were understood, in particular highlighting relevant intersections of ethnicity, gender, social class and disability (Choudry, et al., 2017 and Burman, 2020). Narratives emerging from two projects are used to illustrate the commonalities which exist within multi-faceted and nuanced experiences of working-class alienation in the North of England. The findings demonstrate how contradictions between positions vs being positioned, identifications/identities, collective subjectivities and collective action mediate progressive actions and are key to activist research. This work has direct methodological implications for how *we, as researchers*, are positioned in relation to the communities that we are researching with and the kinds of data such collaborations generate.

EXTENDED SUMMARY

Introduction

In this paper, we (the authors) draw on the synergies and differences between two primarily education-based research projects that centre around theorization of identities, collective subjectivities and progressive action in community-based activist research on issues around social justice and equity for oppressed minorities within the North of England. In the first project (led by SC), members of the Rochdale Pakistani communities, a highly economically deprived area, co-produced with the project team a research- & evidence-based *call to action* document, detailing strategies to mitigate their needs concerning schooling and health during the pandemic (Choudry et al., 2021). The second project (led by EH) aimed to explore how classed inequalities shape the extent to which disadvantaged parents are able to navigate the home-school relationship in a deprived, predominantly White-working class neighbourhood close to Rochdale. In both projects, the lead researchers positioned themselves as part of the communities that were being investigated, but also

at times experienced *othering* (Bakhtin, 1981). Thus, we present here a theoretical analysis of the data across both projects to identify the similarities, barriers and solutions to collaborative activist research where community members act as lead researchers using Cultural Historical Activity Theory as a framework.

The projects have provoked us to think again about the concept of “we”, in regards to (i) the communities whose voices we, as researchers, seek to document, (ii) our research teams and our positions and positionality regarding this research, and (iii) the collective subject/voice of the “call to action” (Engeström, 1995) document we created as an output from our work with the Rochdale Pakistani communities. We seek to understand the impact of arbitrary power relations on, i.e. positioning and being positioned (drawing on Bourdieu, 1990) on e.g. world-making (Bakhtin, 1981), transformation and agency (Stetsenko, 2019).

Whose voices are we documenting?

In both projects, there was a clear positioning of the interviewees in relation to their identities (Vygotsky, 1962; Leontiev, 1981): there seems to be a contradiction between what we *call* ourselves, how we act and what we do (Cole, 1996). For example, at times SC was part of *them* (the Pakistani communities she was consulting with) and other times *they* were not even part of a singular collective identity: “... who is *us* or *our* community? [responding to SC’s question about who they are talking about when they say *us*]... like-minded people who think like I do and do not conform. That may include members from the same family, but not necessarily as there is a class divide” (Adnan, male, Rochdale project). Hence, there seems to be a denial of *the collective subject* - while maybe not of the *collective identity*, i.e., there is a *we* that is not identical to this community nor any subsection of it, but includes a wider voice that speaks like *us*.

Progressive action

In another exchange, SC was questioned about the attitudes/understandings of the other two (Rochdale) project team members: “Are they White, if you don’t mind me asking?...What do *they* think about our stories?” (Adnan, male, Rochdale project). This then led SC to be seen to become a sort of interlocutor between *them* and *us* leading to ambivalence about her positioning vs position within the community and the ‘other’ In response, SC then referred to *our* activity in support of oppressed groups - a move to suggest *we* can contemplate as a new collective subject in action around *their/our* concerns as a way to navigate any emerging dissonance within and between individual identities of members of communities.

These findings were substantiated with P2 where EH, also a parent governor for the school and community she was researching, navigated dissonance and barriers she experienced in terms of her positioning by the parent communities as a researcher through a collective subject in action around *our needs* which offers the potential for collective action that can lead to transformative change (Engeström, 2015, Engeström and Sannino, 2017).

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183 Learning Educational Psychology: teaching, theoretical knowledge and professional practice

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Change laboratory CHAT Educational Psychologists

SHORT ABSTRACT

Research with a team of educational psychology academics from a psychology faculty at a private university in Chile, aimed at fostering their collective work and encouraging the emergence of innovative and experiential solutions in classrooms. This contributes to the development of scientific knowledge about university teaching through the Change Laboratory (LC), based on Activity Theory (TA) (Engestrom, 1996). It is argued that processes of transformation towards innovation and experience in teaching and learning are best promoted through collective/collaborative work among educators. Collaboration in university teaching aids integration and innovation in areas such as curriculum and teaching methodologies (Páges, Cornet, and Pardo, 2014). The LC is a theoretical and methodological tool that facilitates transformations and generates impactful scientific knowledge through a link between theory and praxis. The research aims to answer the question: How are collective transformations oriented towards change in teaching and learning processes in higher education developed to increase innovation, flexibility, and learning experiences? The results include the interaction of three activity systems: the training of psychologists, psychology as a discipline, and the professional demands of the educational system, where tensions are identified that allow progress and decision-making in educational development among teachers.

EXTENDED SUMMARY

Today, there is a need for educational processes that do not segregate the bio-psychosocial dimensions, that understand intersubjectivity (Fandiño, 2011). This is where the university should be a space where solutions are generated in all spheres of society through interdisciplinary and transdisciplinary approaches, rather than just being an intellectual space. Furthermore, globalization and the technological revolution have led to a rethinking of higher education (Escalona, 2008). Curricular flexibility should be used as a tool to provide quality education in a changing world. According Pedroza (2004), educational flexibility refers to "[the] process [...] aimed at facilitating the mobility of academic actors, accelerating communication flows, connecting knowledge with action, and democratizing the regulation of academic work" (p.10). This flexible approach includes permanent updating, greater freedom for students to choose their training path and for teachers to use desired teaching techniques, reduced rigidity, increased horizontal and vertical content communication, greater collaboration between the university and external institutions and between faculties, enriching the connection with real work (Escalona, 2008).

The imperative for change in contemporary and future education, both in higher education and the contributions of future educational psychologists, demands a fundamental rethinking of education and teaching methodologies. The Theory of Historical-Cultural Activity (THCA) proposes an intervention and research device called the Change Laboratory (LC), which is a formative intervention with the potential to impact social practices while conducting rigorous analyses of the transformation process. This methodological approach understands the relationship between researchers and participants within a dialogue and complementarity framework (Sannino et al., 2016). Formative interventions do not have predefined outcomes but are aimed at generating solutions based on systemic contradictions (Engeström, 2009). Virkkunen & Newnham (2013) developed the Change Laboratory [LC], which, since its initial application in 1995, has been used in multiple contexts (Sannino et al., 2016; Pereira et al., 2019). An LC is conducted when a system experiences moments of uncertainty and contradictions that demand new modes of future activity (Sannino & Engeström, 2017).

The purpose of the LC is not only to create changes in activity, in this case, in collaborative teaching for the development of innovation, flexibility, and learning experiences, but it also builds knowledge and a deeper understanding of the nature and causes of barriers to innovation, flexibility, and experience. A successful LC leads to a reconceptualization of activity to build solutions that make it more efficient and effective. In consideration, the LC with educational psychologists from the psychology faculty will generate changes in the teaching practices of the area, but it will also generate knowledge about collective change in university teaching practices for the learning of students in general.

This qualitative research, grounded in the framework of Historical-Cultural Activity Theory, engages undergraduate educational psychology academics at a private university in Chile. This CL consisted of 10 sessions over the course of a years 2023 and 2024 (8 sessions in 2023 and 2 follow-up sessions in 2024). The research aims to answer the question: How does a Change Laboratory contribute to the development of collective actions among teachers aimed at change in teaching and learning processes in higher education? This qualitative research, grounded in the framework of Historical-Cultural Activity Theory, engages undergraduate educational psychology academics at a private university in Chile.

The Change Laboratory was conducted with a voluntary team of academics from the educational psychology area of the psychology faculty. An open call was made to invite the participants. A convenience sample of 8 to 10 people was generated.

Before starting the fieldwork for this research, formal institutional authorization was requested from the dean of the Faculty of Psychology and each participant signed an informed consent. The Change Laboratory meetings were held between May and August 2023, using the Zoom platform, allowing academics from various locations to participate. Mirror data were collected before and between sessions, serving as inputs for reflection during the laboratory sessions.

We are currently in the final analysis of the results, which will be ready in May 2024. For now, the results of this study reveal a complex interplay among three interconnected systems of activity within the context of educational psychology: the system responsible for training future psychologists, the system representing the discipline of psychology itself, and the demands emanating from the professional education system. Through this research, tensions within these systems have been identified, and it is within these tensions that opportunities for progress and formative decision-

making among educators emerge. This dynamic interaction sheds light on the intricate relationships that shape the landscape of educational psychology, ultimately contributing valuable insights to the ongoing development of teaching and learning practices within this field.

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184 CHAT as a Way to Overcome Theory-Practice Conundrum in Teacher Education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: excessive teacher entitlement theory-practice conundrum CHAT

SHORT ABSTRACT

This presentation frames the theory-practice conundrum in teacher education using the nascent concept of “excessive teacher entitlement” to capture the *seeming* teacher disinclination to think theoretically and recognize the need to change for creating more equitable educational ecologies in a rapidly evolving multicultural world. The term ‘seeming’ is important here. It suggests that “excessive teacher entitlement” is not a purely personality characteristic, an interiorized deficiency in teachers. This paper uses a CHAT framework firstly, to eschew the largely prevailing deficit view of teachers by tracing the sources of “excessive teacher entitlement” to its socio-cultural and historical sources and secondly, to bring their agentic side to the fore. This transformative possibility is explained through the illustrative case of a small group of teachers whose self-realisation about their excessive self-entitlement, together with a re-evaluation of their past ideas about the “object” of teaching activity, led to a reconstruction of it “expansively” (Engeström, 1987/2015) making them engage in an effort to realize it in forms of action. The principle of “double simulation” is used to analyse this formative initiative with teachers and students set in India and unpack teachers’ transformative efforts in resolving a problem situation they faced in the shift to online teaching during the pandemic. The study has developed a conceptual model of teacher learning capturing its underlying dynamics thus establishing a link between theory and practice based on teachers’ authentic experience in ways that make sense to them.

EXTENDED SUMMARY

Background and purpose

Pre- and in-service teachers tend to be unreflective about the theory behind their practice (Guðjónsdóttir, 2021). This exacerbates theory-practice dualism in teacher education and has a devastating consequence on the development of teachers’ transformative agency. Teachers seem to surrender their autonomy by dissociating themselves from being producers of knowledge as intentional agents working to effect change in practical situations for the flourishing of their diverse students. The notion of “excessive teacher entitlement” has been used to characterize this commonly observed disposition of *avoidance* among teachers that tells on the development of their agency to grow and be progressively adaptive to changing needs (Author & Craig, 2021). The naming of the phenomenon is not meant to slap a deficit view of teachers as excessively entitled, but to make it accessible for investigation and gain a deeper understanding of what produces teacher inertia in a situation that calls for flexibility to serve the differentiated needs of students.

Using CHAT as a framework, this study unearths the historical antecedents of excessive teacher entitlement to provide a comprehensive understanding of the phenomenon in its sociocultural embeddedness. Moreover, CHAT with its transformative orientation provides a framework within which formative initiatives to help teachers exercise their agency can be designed. This possibility is explained through an illustrative case of a small group of teachers whose self-realisation about their excessive self-entitlement, together with a re-evaluation of their past ideas about the “object” of teaching activity, led to a reconstruction of it “expansively” (Engeström, 1987/2015).

Methods

CHAT’s object of social transformation emerging from the self-reflection of its participants (Engeström, & Pyörälä, 2021) centralises the “formative (or constitutive)” dimension of human development (Stetsenko, 2019). It is relevant to this study which is about fostering teachers’ transformative agency through self-realization to overcome excessive entitlement.

The participants of the online formative initiative that my professional colleague and I guided were 6 teachers who solicited our help to address the challenge of teaching English as second language through distant mode to their rural based students during the pandemic school closure. The control they exerted in the physical space of the classroom seemed to elude them in their efforts to engage students remotely. Although we had no readymade answer to the teacher’s problem, we were willing to explore new possibilities with them by affording expanded learning opportunities. We included a batch of 14 grade 6 and 7 students to make the joint learning authentic. We met every Saturday for an hour and teachers stayed on for another hour for discussion. The data from the sessions between January 2021 and February 2022 were audio recorded and transcribed. Through a reflexive iterative process (Srivastava & Hopwood, 2009) the salient themes were identified to respond to the questions posed for investigation:

What dynamics underlie the transformations in teachers and in their activity from their experience of a new approach to their activity in the cultural space of the formative initiative?

What implications does the dynamics of teachers’ expansive transformation have for how they can be supported to become conscious of their excessive entitlement and agentively transform themselves and their situation?

Double stimulation (Sannino, 2015) is used as a unit of analysis to capture the movement created in the dialectic between the problem situation teachers faced and their agentive use of resources (Lund & Vestøl, 2020). The focus of my analysis is on identifying the salient features of the dynamics underlying teachers’ transformative agency as they navigated through the “collective ZPD” (Mahn & John-Steiner, 2002) created by the opposition between their old activity, on one hand, and the new model of activity they experienced in the formative initiative, on the other.

Results and conclusion

The resources we provided teachers in the form of a new model of teaching activity generated disturbances and conflicts confronting their conventionally confirmed ways of teaching. What moved them out of this impasse was the dialectical interplay we helped them establish between their volitional action and the use of resources (Lund & Vestøl, 2020; Author, 2021). Students’ positive response to the new model of teaching made it ‘internally persuasive’ (Bakhtin, 1981) for teachers, stirring their interest and motivating them to pursue it as a new possibility reflectively by theorising their practice. Parallel to this, the historical analysis we undertook made them reflect on who they were as teachers and what their values were and how their historically developing situation in school

helped or inhibited the realisation of the values they held. It made them determined in their ongoing commitment to place students' interests above the self-serving interests of the neoliberalist school system.

The study provides a conceptual model of teacher learning capturing its underlying dynamics thus establishing a link between theory and practice based on teachers' authentic experience in ways that make sense to them.

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193 Analysing multi-professional knowledge creation in socio-materially mediated workshops

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting interaction in social practices

Keywords: Cultural-historical activity theory (CHAT) Knowledge creation Productive interactions

SHORT ABSTRACT

Digitalisation and the reform of health and social services in Finland have changed the ways of organising and providing services and caused a pressure to the competence development. Experts are expected to develop new multidisciplinary working practices. Production of new knowledge is needed for the development of both professional practices and education and training in collaboration between these sectors. Universities of Applied Sciences (UASs) in Finland have adopted knowledge creation approaches to respond to the need.

This presentation focuses on two sub-studies of knowledge creation exercises in multi-professional workshops of health and social sector experts. The studies aimed to find out, whether the ideas for the expansion of the future object of activity emerge in the workshops, in face-to-face as well as online settings. The methods of analysis applied the cultural-historical activity theory (CHAT) combined with the insights from the knowledge creation approach including the productive interactions mediated by a shared knowledge artefact.

The results brought out that workshops can be productive in bringing together multi-professional experts and offering them a place for knowledge creation exercise. This requires building on research-based activities and the socio-material mediation by knowledge artefacts and good facilitation. CHAT offers a framework to contextualise the development activity in a specific setting and to reveal the contradictions and dimensions of expansion produced by the participants of the workshops.

EXTENDED SUMMARY

The Finnish health and social care sector has faced fundamental changes challenging learning and competence development of the field. Digitalisation and multi-professional expertise are examples of new knowledge needs that transform pedagogical practices in vocationally oriented education and training. The increasingly academic orientation has further strengthened education with research, development and innovation (RDI) activities. (Saar et al., 2018). These trends can be seen e. g. in development activities set up inviting experts from different fields to solve demanding questions. This was the starting point of the development projects by the Finnish university of applied science (UAS), in which the knowledge creation workshops gathered teachers, students and experts from health and social sector work to discuss current issues of the future of integrated health and social services (Juvonen et al., 2022) and the impact of continuous learning programmes (Juvonen & Toiviainen, 2024). Two sub-studies were carried out to explore, whether the participants' discussion expanded

the object of activity presented in the small group tasks and with the help of knowledge artefacts for maintaining new knowledge practices.

The first sub-study (Juvonen et al., 2022) analysed a face-to-face discussion of a knowledge creation exercise, in which the participants formed their understanding of the future service in question. The study answered the research questions: What kind of future activity for the health and social care services do professionals envision? What are the expansive and contradictory connections of the future service activity produced in the knowledge creation exercise? The analysis applied the conceptual model of an activity system (Engeström, 2015), which enabled one to view the developmental contradictions and expansive transformations in and between the elements of activity. The study focused on the emerging expansive and contradictory connections, which professionals produced in their workshop discussion.

The second sub-study (Juvonen & Toiviainen, 2024) analysed online discussions in three small groups. The speaking turns (Damsa, 2014). The following research question was answered: to what extent and how do different types of productive interaction emerge in an online discussion on the impact of professional specialisation education programmes?

The results indicate that multi-professional knowledge creation exercises can be productive in terms of materialising the expansive ideas as well as contradictions of future integrated services, which was the object of the first knowledge creation workshop. Interpreted in the framework of activity system the results brought out that the health and social care experts are oriented towards the future challenges and able to develop collaborative practices across the boundaries of expertise. Participants defined two types of subjects as the users of services, those of active and vulnerable citizens, whose needs differ. This gave rise to contradictory and expansive connections between envisioned elements of activity. In spite of digitalisation's potential in health and social services, its use was questioned in serving clients with different needs and in building a community for professionals. Presently existing contradictions of the service and care activities will have to be resolved in order to tackle the future challenges.

The second sub-study revealed that online knowledge creation exercise differs from face-to-face implementation in highlighting the facilitator's role and the knowledge artefact mediation as crucial for productive interaction. Damsa's (2014) framework of the types of productive interactions was applied in studying the interaction to construct the shared object. The object in the second exercise was defined as the impact of the work-life professional specialisation education programmes. The types of productive interaction were identified, especially the generative collaborative actions that developed the participants' epistemic agency for creating solutions to improve the future impact of the education programmes.

In sum, participative and artefactual processes supported the socio-materially mediated small group dialogue for creating expansive knowledge in face-to-face and online workshops. The cultural-historical activity theory anchored the analysis to the expansions and contradictions evolving in the object of the workshop development activity. These sub-studies are embedded in a specific cultural-historical context, the future of the health and social care work and education in Finland but may offer analytic ideas for other contexts.

The presentation describes the findings of two sub-studies and invites the audience to discuss the suitability of the theoretical framework in various research contexts.

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196 Towards inclusive activity through the re-production of space in a supported housing unit

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: space activity transformation

SHORT ABSTRACT

Most previous literature deals with regulation and control whereas little is known about clients' experiences and feelings about spaces that would encourage and stimulate them in homelessness studies (Huffman, 2018). Physical surroundings can have a significant effect on experiencing oneself as a worthy member of society (McLane and Pable, 2020). Space and spatial arrangements can have both supporting and limiting implications for the lives of previously homeless (Rivlin and Moore, 2001). The aim is to explore how space and spatial arrangements support the development of inclusive activity in supported housing units. Lefebvre's (2015/1991) spatial dialectics and cultural-historical activity theory are applied to explore the re-production of space and the development of activity in a Finnish supported housing unit. For the purpose, the data of the semi-structured interviews with managers and employees are analyzed. The findings present a story of the questioning the reception space, contradictory re-production of the new "lobby" space, and the initiatives of more inclusive activity and the new object of "humane service".

EXTENDED SUMMARY

Background

The context of the study is a supported housing unit owned by a prominent NGO that provides homes for 90 previously homeless young clients. The unit offers a good example on the role of space in the development of activity. Finnish Housing First principles (Y Foundation, 2018) such as empowering residents and integrating them into a community and society guided the activity of the unit but were not necessarily adopted entirely. The managers initiated the process of re-producing the reception space to a living-room space by themselves resulting to the development of new activity in a Change Laboratory organized by RESET/CRADLE group (Sannino 2020).

Methodology and methods

The methodology addresses the early phase of an expansive learning process during which single participants begin to question the prevailing activity and some initiatives are made to solve the contradictory situation (Engeström, 2015/1987). Lefebvre's (2015/1991) spatial dialectics is applied to explore the socially constituting quality of space in social relations. Social space is understood as a "materialization of 'social being'" realized on different levels of society, social action, and communities (ibid., 101-102).

Eighteen semi-structured interviews were carried out with managers and employees by three members of the research group before the Change Laboratory, 2018-2019. The themes of the spatial

change process and the community and external collaboration were selected for the analysis in video or audio recordings lasting from 40 to 140 minutes. Extended logs were created by transcribing parts of the data and 72 excerpts were selected for the analysis. Leander's (2002) application of Lefebvre's three-partial methodology of the physical (perceived) space in daily activities (first space), conceived representations of space (second space), and employees' experiences of space as a third space (the dialectic of the first and the second space) were adopted to the qualitative analysis. Dilemmas, conflicts, critical conflicts, and double binds were analyzed as manifestations of contradictions (Engeström and Sannino, 2011) and the generation of inclusive activity was analyzed as initiatives in the employees' and residents' daily activities in the third phase of the analysis (Haapasaari et al., 2018).

Findings

Firstly, the questioning of the "reception space" is depicted. The physical space involved a small office, separated by a glass window from a large entrance hall. In the interviews, employees called it "glass box", "aquarium", or "info". One critical conflict expressed by an employee crystallized the need for transforming the reception. It represented an impossible and humiliating spatial setting for residents to get services standing by the door or by the counter that almost required "*a client to kneel down to talk to an employee.*" (EX7).

Secondly, the contradictory re-production of the new "lobby" describes employees' positive and negative experiences after moving there. The lobby was perceived an "open space" furnished in a living room style to support an equal relationship between the employees and residents. One employee told: "*It is a different thing to be encountered behind the glass booth than openly in the same space*" (EX16). However, another employee criticized the new lobby: "*Before there was a glass between the clients and us, but now we are in this open space (...) if someone attacks us*" (EX24). Some employees experienced a paralyzing critical conflict in the new space as one interviewee disclosed: "*Employees were very helpless, asking "where do I sit", "what do I do, "where are the [office] tables?"*" (EX19).

Thirdly, initiatives for more inclusive activity and new object of "humane service" emerged during daily chores such as coffee-making and cleaning. However, others experienced this as a dilemma because it was more exhausting to them, and it made residents to demand more services. But feelings of "common good and a community began to gain ground. Some residents engaged into doing odd jobs and work try-outs, and the collaboration increased with inhabitants in the neighborhood. Employees gave new meanings to their work such as "fellow travelling" or "walking on the side".

Conclusions

Physical space and its arrangements remain often unnoticed, and their implications are difficult to see until they are somehow distracted (Kreiner, 2010). The space itself and some of its material artefacts such as the door and the counter played an important mediating role when questioned. This led to the re-production of space and transformation of activity. During the process, residents became subjects of their lives instead of being service objects and new ways of participation were initiated in the community and its surroundings.

The research was conducted by following ethical guidelines. Informed consent was obtained from voluntarily participating managers and employees to collect and use the data for research purposes.

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197 Promoting Socioemotional Development: Insights from Technical and Vocational High Schools Leadership

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Socioemotional development Technical and Vocational High Schools Leadership

SHORT ABSTRACT

In this research, our primary goal is understanding the best leadership practices in Technical and Vocational High Schools (TVHS) that promote the development of socioemotional skills and/or well-being in order to offer support to educational leaders, policymakers, and researchers in effectively addressing the ongoing challenges within TVHS.

Regarding our methodology, we initially identified commendable practices through an open call and subsequently subjected six of them to a rigorous blind review process. These practices were examined as individual case studies within the framework of Engeström's (2015) model of Activity Theory. Subsequently, an integrated analysis was performed to identify crucial elements pertinent to the continuous enhancement of leadership within TVHS.

The outcomes of our study reveal that these practices not only enhance academic learning but also nurture the social and emotional competencies of students. They achieve this by promoting collaboration, enhancing interpersonal relationships, and cultivating an environment where active listening and reflection are fundamental. Concurrently, these practices establish avenues for active participation and constructive dialogue, offer emotional support during challenging periods, and advocate for the inclusive education of all students. These approaches significantly improve the overall school environment and contribute to the well-being of the entire educational community.

EXTENDED SUMMARY

In educational institutions, particularly those serving vulnerable populations like Technical and Vocational High Schools (TVHS), leadership is critically important. Given the significance of leadership in this environment and recognizing the advantages of systematizing best practices, it becomes imperative to comprehend the leadership strategies implemented in TVHS. This knowledge paves the way for the potential systematization and dissemination of these practices (Leithwood et al., 2006; Leithwood et al., 2008).

Amid the post-pandemic landscape, a central challenge in education is socioemotional development and well-being. Therefore, the following research question arises: How do best leadership practices manifest themselves in Technical and Vocational High Schools that contribute to socioemotional development and/or the well-being of their communities?

In this study, we center our investigation around the concepts of the second generation of Activity Theory (Engestrom and Sanninno, 2010). When an activity becomes institutionalized, it gains strength

and durability. Thus, we understand that these practices are not isolated or individual phenomena but rather systematic activities that have evolved over time, occurring within collective and relational contexts. This perspective enables us to grasp the origins, sustenance, and historical transformations of these practices.

The primary objective of this research was to gain insights into effective leadership practices in TVHS that promote socioemotional skills and/or well-being. To achieve this, we employed a research design that allowed us to identify connections across time and among the various components involved in these practices, rather than addressing each component in isolation. Embracing a dialectical perspective, we examined both the conditions of these practices and the relationships among their components, facilitating the conceptualization of practice as an integrated whole.

This study is characterized by its qualitative and exploratory nature, grounded in a dialectical epistemology. In the selection of paradigmatic cases, we adopted an intentional sampling approach, common in research focusing on values, rituals, or meanings (Hernández, Fernández, and Baptista, 2010). The methodological approach we adopted in this research was inspired by the sociohistorical method proposed by Vygotsky. From this standpoint, human practices materialize in objects and evolve through a dialectical relationship between activity and the object. Consequently, the principal task in generating knowledge lies in identifying the connections between practices or activities that give rise to fundamental objects and their surrounding conditions (Hedegaard and Fleer, 2008).

We selected six paradigmatic cases, identified by the individuals involved as related to socioemotional development and/or well-being. These cases were chosen to delve deeply into the relationships characterizing the emergence, development, and consolidation of effective leadership practices in TVHS. In this type of case study, it's essential to emphasize the unique features of each case, as opposed to selecting a wide array of cases, as advocated by Stake (1995).

The case selection process involved an active search for practices, commencing with an open call to all TVHS communities to which we had access (representing 60% of the national enrollment). This selection process incorporated the use of an application form completed by each TVHS, along with an evaluation instrument reviewed by a committee for each case. Thus, it is established that "the sample is intentional based on thematic and conceptual interests, and cases can be selected based on various criteria" (Neiman and Quantara, 2006, p. 220).

In the analysis of these practices, we considered the work with effective leadership practices in TVHS as the unit of analysis, based on the structural model of Activity Theory and its constituent elements (subject, object, material mediators, rules, community, and social organization) developed by Yrjo Engestrom (1987) and later enriched by various researchers worldwide. This approach was adopted to maintain consistency with the sociocultural perspective, wherein the unit of analysis is not an isolated element but rather preserves the characteristics of the whole, in line with Vygotsky's idea that the unit is a vital and irreducible part of the whole, and that psychology should identify these units where the characteristics of the whole are present, thus enabling the understanding of not only the specific case but also the comprehension of the broader system.

Practices are inherently situated, signifying that their effectiveness and applicability may vary depending on the specific context in which they are implemented. Leaders and educators aiming to adapt these ideas to their educational environments should engage in careful translation and interpretation, considering the uniqueness of their community, available resources, and specific student needs. There is no one-size-fits-all approach suitable for all situations, emphasizing the

importance for leaders to demonstrate flexibility and creativity in applying these learnings to their specific contexts.

Among the key elements found crucial in effective practices for developing socioemotional skills and well-being are the cultivation of student leadership competencies, the transformation of students into change agents, improved academic outcomes, acquisition of cultural signs and symbols, increased motivation, engagement, and responsibility, attainment of prior work experience, and the recognition of trajectories and higher education.

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200 Exploring the (re)production of inequality in the institutional everyday life of children

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Dealing with inequality

Keywords: Children's institutional everyday life Participation Situated inequality

SHORT ABSTRACT

This presentation is based on an ongoing PhD project focusing on the concept of “*situated inequality*” (Højholt, 2016; Højholt & Røn-Larsen, 2021a, 2021b). Rather than understanding inequality solely as something predefined, the project examines, with roots within a cultural historical tradition, how children's (unequal) opportunities for participating are shaped and changed as a part of their institutional everyday lives through their interactions with each other and the professionals. The aim of this presentation is to open up for an discussion on how inequality, investigated as unequal possibilities of participation, can impact children's everyday life and also how the institutional conditions are a part of (re)producing inequality locally (McDermott, 1996; Mehan et al., 1986). This is an important part of getting more *situated* knowledge about how such dynamics of inequality can be prevented by working with expanding children's opportunities of participation across the different social practices, where they live their everyday life. We need to look insight the institutional arrangements, where inequality have a variety of meanings for children in their shared everyday life – It calls for opening “*the black box of inequality*” (Højholt & Røn-Larsen, 2021a, p. 605). This presentation takes its starting point in the projects empirical work consisting of qualitative data from participant observations and situated interviews combined with quantitative analyzes of statistical data on institutional conditions from diverging municipalities. With this combination the project seeks to explore *the institutional inequality*, conceptualized as the institutional conditions that promote and prevent inequality as they unfold in situated practices.

EXTENDED SUMMARY

Background

Previous Danish research indicate that children from marginalized family backgrounds more often break the pattern of reproducing social inequality rather than reproducing it, and at the same time around 50% of the young people in vulnerable and marginalized positions cannot be predicted based on risk factors related to their family background (Benjaminsen et al., 2015; Ejrnæs, 2003; Ejrnæs et al., 2005). Data published by the Ministry of Children and Education in Denmark points towards many local differences in the academic performance of schools in light of students' socioeconomic backgrounds (The Danish Ministry of Children and Education, 2022). When the 'same' background has very different implications for children's everyday life in school, it calls for a further exploration of the production and reproduction of inequality *situated* in the institutional everyday life of children. Therefore, it is necessary to be curious about what happens in these institutional arrangements,

where inequality have a variety of meanings for children in their concrete, lived everyday life. To gain insight into what happens in children's shared life, we need to open "*the black box of inequality*" (Højholt & Røn-Larsen, 2021a, p. 605).

Aims

This proposal for a poster presentation is based on an ongoing PhD project focusing on the concept of "*situated inequality*" (Højholt, 2016; Højholt & Røn-Larsen, 2021a, 2021a). Rather than understanding inequality solely as something predefined and deterministic, the project examines, with roots within a cultural historical tradition, how children's (unequal) opportunities for participating in school and leisure time are shaped and changed as a part of their everyday lives through their interactions with each other and the professionals. The aim for this poster presentation therefore is to open up for an discussion on how inequality, investigated as unequal possibilities of participation, can have an impact on children's everyday life and also how the institutional conditions is a part of producing and reproducing inequality locally (McDermott, 1996; Mehan et al., 1986). This is an important part of getting more knowledge about how these dynamics of inequality can be prevented from developing by working with expanding children's opportunities of participation across the different social practices, where they live their everyday life.

Methods

The project is methodologically embedded in a Danish tradition of practice research (Højholt, 2023). Therefore, the research is organized with 'local research communities' where collaboration with different types of professionals is established.

The empirical work of the project consists of participant observations and situated interviews with children from 6th grade and the professionals around them (e.g. teachers, pedagogues, school psychologists, school leaders etc.) at 2 different schools and youth club in Denmark. The fieldwork takes places in 3-4 different school classes in a period of about 2 years. By conducting participant observations, the project will have a focus on children's participation in and across school and leisure time to unfold how they, in different ways, have unequal conditions for participating in both social and learning communities (Højholt & Mardahl-Hansen, 2021).

This presentation takes its starting point in the projects empirical work consisting of qualitative data from participant observations and situated interviews combined with quantitative analyzes of statistical data on institutional conditions from diverging municipalities e.g. from local schools, classes and municipalities. With this combination the project seeks to explore *the institutional inequality*, conceptualized as the institutional conditions that promote and prevent inequality as they unfold in situated practice.

How interaction with the participants is planned

The two-minute presentation is an invitation to dialogue and discussion on how to understand and conceptualize situated processes of (re)producing inequality.

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209 Preschool children's institutional transitions and motive development in Mainland China

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Bringing together theory and practice

Keywords: Transition Motive development Cultural-historical wholeness approach

SHORT ABSTRACT

Transition to school is a crucial period in a child's life that is always marked by many changes, and it has received a lot of attention from both teachers and parents in educational studies. A good experience of transition to school is associated with children's academic and social performances and their later school success (Belsky & MacKinnon, 1994; Dockett & Perry, 2004). Despite numerous transition studies that have focused on either horizontal transitions (e.g., the everyday transition from home to preschool) or vertical transitions (e.g., preschool to primary school) (Kousholt, 2019), there are relatively few studies investigating the interconnections between horizontal transitions and vertical transitions of children from the perspective of whole person development in Chinese context. Thus, this study seeks to investigate the motive development of children during their transition from kindergarten (i.e., children aged 3-6 years) to primary school (i.e., children above 6 years) in mainland China. In this study, Vygotsky's cultural-historical concepts of motives and demands, play, the social situation of development, cultural age periods, and crises are used to analyze children's motive development over the transition period. Digital video observation, field notes, photographs, and semi-structured interviews with children, teachers and families are collected to capture children's intentional actions in different activity settings and across the institutions. We argue that understanding the process of how children's motives develop in relation to play and learning could help adults create conditions for children's transition into primary school.

EXTENDED SUMMARY

Background

While the transition to school could be a time associated with excitement, it can also be a period that presents potential academic and social challenges to children due to the significant differences and discontinuities between the physical environment, institutional demands, teachers' expectations, and teaching methods (Broström, 2002; Dockett & Perry, 2021; Petriwskyj, 2014). Therefore, how to better support young children's transition is a practical educational challenge. In China, the Ministry of Education (2021) published *the Guidelines on Vigorous Promotion of the Scientific Connection Between Preschools and Primary Schools* in recent years, aiming to increase the alignment in curriculum and teaching practices between these two institutions. Preschool teachers are required to help children develop basic living, social, and study skills for stepping into formal schooling, while primary school teachers are required to slow down their teaching schedules during the first grade to

help children adapt to primary school education. Thus, this indicates that a systematic change is taking place in China to enhance collaboration between institutions to facilitate children's transitions.

Aims

This study aims to investigate the motive development of preschool children during their transition from preschool to primary school in mainland China. To achieve this research purpose, it leads the following questions to guide this research: how children are currently engaged in activities (e.g., their leading activities and motives), and the process of how children's motives get develop in transitions. By taking a wholistic view for understanding children's learning and development, this study could contribute to a better understanding of how adults, such as teachers and parents, can create conditions for children's motive orientating to the school.

Methods

Hedegaard's wholeness model (2012) of children's learning and development is employed for understanding children's developmental potentialities, which are comprised of three interrelated analytic perspectives: societal, institutional, and individual perspectives. This research is conducted in Shijiazhuang, the capital city of Hebei Province, in the northern part of China. The research sites for data collection involve both preschool and primary school settings and home settings. Participating children include two boys and two girls aged 5 to 6 years old. The data collection is divided into three time periods: the first period is during preschool when the focused children are followed in both kindergarten and the home settings; the second period is during the summer holiday when the home setting becomes the main site; the third period is when the focused children enter primary school. Video observation, field notes, photographs, and semi-structured interviews are used to collect data. Particularly, the video observation is used to capture the actions and dynamic movement of focused children and the dialogue between focused children and people around them, with over 60 hours of visual data collected across different institutions. The 15 hours of interview data is collected from focused children, parents, and teachers.

Results

The results suggest that play has an important role in bridging children's transition from preschool to primary school. During transitions, rather than perceiving the 'play as the leading activity' directly replaced by 'learning as the leading activity', children's play motives can still exist and develop. Children's perspectives need to be taken by adults as even in the same activity setting, they might develop different motive orientations, such as interpreting an activity as for fun or as a chance to learn something new. In addition, not only children experience transitions, but also families may experience the transitions in their daily practices. Families' role in monitoring children's learning after school is being further lifted due to the reduction of off-campus tutoring with the promulgated double reduction policy. Thus, along with the change of demands and motives of the preschool, this also poses new demands in the home context.

Conclusions

This study contributes to our knowledge of children's transition into formal schooling from a wholistic perspective. The contradictions between new demands and the child's motives during institutional transition or even transition between different activities within that institution, can be seen as developmental potential for children's learning and development. Children are influenced by the activities, but at the same time, they are active agents with personal interests and motives that can influence other people and social situations. By capturing the dynamic process of children's motive

development in transition, the analysis can further inform the pedagogical decisions of adults for supporting children's transition. Further research could also be conducted in China to understand children's transition by focusing on families' perspectives.

How interaction with the participants is planned

Poll questions will be used for a short interaction before the presentation as an icebreaker and after the presentation to provide opportunities for the audience to ask questions related to the presentation. The interactive polling slides with the QR code will be provided for audiences to scan and engage in live polling.

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211 Reconceptualise L2 motivation by using the concepts of perezhivanie and subjectivity

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: perezhivanie L2 motivation subjectivity

SHORT ABSTRACT

Since the 1990s, research on second language (L2) motivation has become increasingly popular and incorporated constructs from cognitive and education psychology. The most popular and influential model is Dörnyei's L2 Motivation Self System (L2MSS) (2009) which conceptualises motivation as a psychological trait that drives a person to make choices, take actions and effort to achieve a goal. However, there are three gaps in the current L2 motivation research: the lack of research on the role of L2 learning experiences in L2MSS; the need to focus on emotions in L2 motivation; and the need to reveal the process of how L2 motivation changes. This paper proposes that Vygotsky's cultural-historical theory (CHT) perspective, particularly the concepts of perezhivanie and subjectivity form a unit of analysis for understanding the dynamics of person-environment dialectics and intellectual-emotive process in which individuals experience the world and become motivated to act (Poehner, 2022, p. 19). The concepts of perezhivanie and subjectivity can provide a novel conceptualization for the role of L2 learning experiences and emotion in L2 motivation from a developmental view. Following that, we propose some methodological implications based on the qualitative epistemology methodology. Some empirical data from the pilot study are presented and its implications are suggested for researching L2 motivation from a CHT perspective.

EXTENDED SUMMARY

Background

The most popular and influential model on second language (L2) motivation is Dörnyei's L2 Motivation Self System (L2MSS) (2009) which conceptualises motivation as a psychological trait that "moves a person to make certain choices, to engage in action, to expend effort and persist in action" (Dörnyei & Ushioda, 2011, p. 3). However, the current L2 motivation research requires further investigation into three issues: (1) the lack of research on the role of L2 learning experiences in L2MSS; (2) the need to focus on emotions in L2 motivation; and (3) the need to reveal the process of how L2 motivation changes. This paper proposes that Vygotsky's cultural-historical theory (CHT) offers a novel approach to understanding L2 motivation (Kim, 2021; Poehner, 2022). Specifically, the concepts of perezhivanie and subjectivity provide a new perspective on how L2 learning experiences and emotions shape L2 motivation within a developmental context.

Aims

This paper proposes a new framework for conceptualizing L2 motivation using the concept *perezhivanie* and the theory of subjectivity. The paper proposes a qualitative epistemological methodology and its implications for researching L2 motivation.

First, *perezhivanie* refers to ‘how a child becomes aware of, interprets, [and] emotionally relates to a certain event’ (Vygotsky, 1994, p.341). *Perezhivanie* provides a framework to analyse an individual’s construal of the current and previous experience and how these experiences motivate their actions in a certain situation (Poehner 2022). Second, *perezhivanie* analyses a person’s emotional experiences in a concrete social situation and how it turns into the social situation of development (SSD) (Veresov, 2017). Third, Vygotsky’s theory provides a dialectical rather than deterministic view of the relationship between a person and the environment (Poehner, 2022). The concept of refraction indicates that the environment itself cannot shape development, but only the components that are refracted via a person’s *perezhivanie* can shape the development (Vygotsky, 1994).

Perezhivanie reveals a subjective experience of an objective event (Poehner, 2022). Drawing on *perezhivanie*, Gonzalez Rey’s theory of subjectivity provides a new way to think about emotions and their role in subjective configurations and motivation (MacCallum & Morcom, 2023). Subjectivity is defined as “the integration of emotions and symbolical processes, forming new qualitative units: subjective senses...” (Gonzalez Rey, 2019, p. 28). Subjectivity is a motivational system in which different psychological functions become subjective via subjective configuration (Fleer et al., 2017). Regarding the first issue, when a learner makes subjective meaning of their L2 learning experience, they acquire a subjective sense of these factors of the environment and may develop subjective resources to make changes to their relations or experiences (González Rey & Martínez, 2017). Second, emotions are not only a response to external demand but also how a person feels about, recognises and positions themselves in a specific social space and relation (Fleer et al., 2017). Third, subjectivity supports a deeper analysis of *perezhivanie* as a subjective refracting prism (Fleer et al., 2017). The dialectics of the social become the individual lie in how the components of the social environment are refracted by the subjective *perezhivanie* (Vygotsky 1998).

Methods

Based on the conceptualization, we propose two types of research methods. One is the constructive interpretive method for exploring the formation of L2 motivation by analysing their *perezhivanie* and subjectivity, via dialogue and retrospective interviews and narrative journals in multimodal texts. Based on the findings collected from the constructive interpretive methods, the other is the intervention to promote learners’ *perezhivanie* and L2 motivation (Rubstova & Daniels, 2016). The study collected data from 25 Year 9 and Year 10 students of a girls’ high school in Sydney. The data was collected through retrospective focus group interviews, which focused on their L2 motivation development, critical events, emotional experiences, interpretations, and future plans for learning L2. We conducted a thematic analysis following the coding scheme for analysing *perezhivanie* and subjectivity (piloted in Yang & Markauskaite, 2022, 2023).

Results

The findings revealed that participants’ sense making of their L2 learning experience plays an important role in the primary motivation. The environmental factors refracted in their *perezhivanie* included the important others, such as their teachers, parents, and the local community. In addition, extracurricular activities, such as L2-related excursions and competitions played an important role

during their L2 experience. L2 learners' positive interpretations of their L2 learning experience and situation enhanced their L2 motivation. The concepts of refraction and subjective sense provide a novel perspective on analysing how the participants made subjective meaning of certain elements from these experiences and then took actions in their L2 learning.

Conclusions

Perezhivanie and subjectivity provide an innovative perspective to analyse L2 learning experience, in particular, how an L2 learner internalizes and make subjective meaning of these environmental factors. Based on the preliminary findings, a future study will conduct the intervention to promote learners' perezhivanie and L2 motivation.

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212 Distributed agency between preservice teachers and ChatGPT – a formative intervention

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Formative intervention ChatGPT distributed agency

SHORT ABSTRACT

The rapid development of Generative Artificial Intelligence (GenAI) has caused fears that the rise of AI ‘agency’ will threaten human agency. In particular, in the context of ChatGPT, users have little control over the responses generated by ChatGPT, only over the writing and revising of their prompts. Therefore it is necessary to investigate human-AI cooperation in terms of the negotiation of agency between human and AI. This study aims to explore the development of preservice teachers’ agency during their interaction with ChatGPT and the distribution of agency between them and ChatGPT. The participants are preservice teachers enrolled in an Australian university. This study adopts a formative intervention design within Cultural Historical Activity Theory underpinned by double stimulation, in which participants are presented with a first stimulus which provokes a conflict of motives and a second that provides a developmental pathway to resolve the conflict. Here, the first stimulus is an AI literacy scale. The second stimuli, to enhance participants’ agency, include iterative group discussion and evaluation of the prompts and responses from ChatGPT. Data were collected from surveys, video-recorded interactions between the participants and ChatGPT, and their revisions of the ChatGPT-generated tasks and interviews. This paper proposes a dialogical analysis of the interaction between the participants and ChatGPT to reveal the development and distribution of ‘agency’ between the participants and ChatGPT. This design goes beyond the AI-centered view and aims to make changes to the participants’ practice by enhancing their agency.

EXTENDED SUMMARY

Background

Generative Artificial Intelligence (GenAI), such as ChatGPT, can accomplish a wide range of tasks faster and better than humans (Markauskaite et al., 2022), leading to questions of how best to integrate it into teaching and learning. While some believe that we need to embrace it, others have expressed concerns regarding its potential to pose challenges and disruption to education (Dwivedi et al. 2023). Common concerns are that it may deskill learners and raise ethical issues. Moreover, teachers' insufficient familiarity with GenAI has been identified as a significant challenge in effectively integrating it into the classroom (Adiguzel et al., 2023). To address these concerns, it is important to ensure that teachers are equipped with the knowledge and skills necessary for the appropriate use of GenAI in their teaching (Eke, 2023) and understand its impact on human intelligence and well-being (Markauskaite et al., 2022).

As GenAI advances, it can customise and create content for the users, which means that it can exert its own 'agency' over humans (Sundar, 2020), as a source of communication with human users (Sundar & Liao, 2023). There is a fear that the rise of GenAI will threaten human agency, even as it is claimed to enhance human agency (Sundar, 2020), especially in the context of ChatGPT as users have little control over the responses generated by ChatGPT, only the writing and revising of their prompts (Sundar & Liao, 2023). Therefore it is urgent to research human-AI collaboration in terms of the negotiation of agency between humans and ChatGPT, including the types and degrees of agency (Sundar, 2020).

Aims

This study aims to explore the development of preservice teachers' agency during their interaction with ChatGPT and the development and distribution of agency between the participants and ChatGPT. The research questions are:

- How does the participant's agency develop during the group interaction with ChatGPT?
- How do participants negotiate and distribute agency between themselves and ChatGPT?

Methods

To explore the development and distribution of human-ChatGPT agency, this study adopts a formative intervention design within the Cultural Historical Activity Theory (CHAT) that is underpinned by the epistemological principle of double stimulation (Sannino, 2015a). From the CHAT perspective, human agency refers to intentions and wilful actions, from taking initiatives to making transformation (Engeström & Sannino 2020). Originating in Vygotsky's (1987) work, double stimulation is a structured method to "actively promote the transition from the current state of affairs to a new (not yet existing) one" in which the subject is provided with a problem first and then "active guidance towards the construction of a new means to the end of a solution to the problem" (Van der Veer & Valsiner, 1991, p.169).

Sannino (2015b) has re-modelled the double stimulation as a process of fostering agency with some key elements. The first element is a conflict of motives which is activated by creating a challenging or conflicting problem, which is called the first stimuli (Hopwood, 2022; Sannino, 2015b). In this study, the first stimulus is to use a questionnaire (piloted by Yang, 2022) to raise their awareness of the need and issues of integrating ChatGPT into their pedagogical design.

The second key element is the second stimuli that offer resources that the person can use for analysing and solving the problem (Hopwood, 2022) so that they can break away from the conflict of motives (Sannino, 2015b). Agency is fostered when they cope with the problematic situation by using the second stimuli (Virkkunen & Ristimäki, 2012). In other words, the process of motive formation, sense-making and decision-making depends on the use of second stimuli (Sannino, 2015b). This study provides a series of second stimuli for enhancing learners' agency, including the designed tasks, iterative revising prompts, evaluating responses from ChatGPT, group discussion and reflection (see Figure 1). The data were collected from survey responses, video-recorded interactions between the participants and ChatGPT, their revisions of the ChatGPT-generated tasks and interviews.

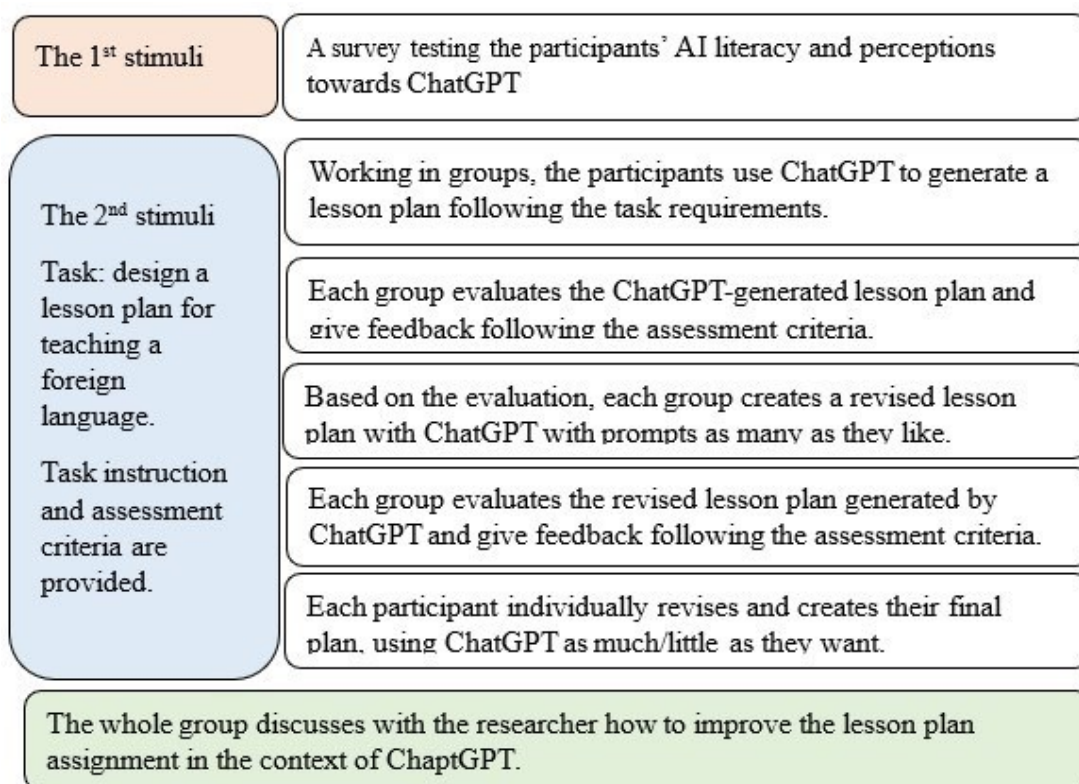


Figure 1 The formative intervention design

The study's design expands on the methodology used in the author's previously published research (Yang, 2021, 2022). Specifically, the piloted methods of dialogical analysis, sample work analysis (lesson plans), and coding schemes for expressions of agency have been utilized by Yang (2021, 2022).

Results and Conclusion

Preliminary findings indicate that double stimulation design and collaborative discussions enhance preservice teachers' agency in forming ideas based on the responses from ChatGPT. At the same time, their agency is exemplified via revising the prompts to interact with ChatGPT and forming new objects for learning. Because this is such a recent and rapidly changing topic of research, the findings are being developed between now and the presentation.

How interaction with the participants is planned

The presenters will create a short Mentimeter survey to interact with the audience on their perception of ChatGPT.

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214 An approach to teachers' identity construction in high school education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: teachers subjectivity meaning construction high school education

SHORT ABSTRACT

This work aimed to clarify the relationship among culture, identity, and narrative processes through analyzing the experiences of high school education professors.

Method

Ten teachers were interviewed in different modalities of high school employing an interpretative qualitative research approach and the narrative as a valuable resource for dialogue and reflections about experiences and teachers' practice, within the cultural context educational institutions offer in Mexico. The idea of narrative was pointed out by Bruner (1988) when he analyzed two different kinds of thinking: paradigmatic and syntagmatic, since personal psychology is found in the cultural context, and it is organized around meaning-construction processes connecting men with historical and social dimensions that allow us to understand each other.

Results

The approach and experiences shared by the participants permitted us to obtain some reflections upon human, affective, and cognitive dimensions into the range of teacher's actions, beliefs, intentions, educational practices with young students, their reality reading, trajectory, and feelings with the people that surround them, which we think it gave as a result, certain knowledge and understanding of how teachers' identity develops in the frame of the academic context's subjectivity.

EXTENDED SUMMARY

Three paradigms were established in social sciences from the hermeneutic turn and one of them is the Interpretative qualitative paradigm. Under this approach emerge different schools looking for reality comprehensions, like phenomenology, hermeneutics, and symbolic interactionism among others (Sánchez, 2013). This interpretative focus is employed for language analysis and word meaning, appearing methods as the narrative. Bruner (1988) introduced the idea of narrative when he talked about two different kinds of thinking: paradigmatic and syntagmatic and popular psychology, since it is immersed into the culture and organized around the meaning-construction process connecting men and women with social and cultural context and with other human beings. In this work we looked to clarify the relationship among identity, culture, and narrative. Identity narratives are cultural products inseparable from social and geographical forces that comprise what some authors call identity funds (Brito, Subero, and Esteban-Guitart 2018), and in this research, we are trying to understand them, with the belief that life experiences when they are told, may serve to other people by considering important aspects in our lives that seldom we pay attention to them and

when we think about these vital experiences we give new meanings to such events and learn from our trajectories to understand our identity.

The **aim** of this work was to clarify the relationship among culture, identity, and narrative processes through the analysis of experiences of high school education professors and the meaning they give to the experiences they had through their trajectory and how this led them to elect their career.

Method

Ten teachers were interviewed in different modalities of high school (eight women and two men), employing an interpretative qualitative research approach and the narrative as a resource for dialogue and reflections about experiences and teachers' practice, within the cultural context educational institutions offer in our country. In it we included the meaning of being a teacher, relations with their students and some experiences narrated so we can understand how they built their teacher's identity.

Results

Stories professors told about the most significant influences to elect teaching as a profession differ among men and women. Female teachers mentioned that they wanted to be teachers since childhood playing to the "school" recreating the roles of teachers and pupils with brothers and sisters; while males, were influenced by adults who represent an example for them as parents or teachers. So, we suppose that these identity processes arise from the family and community contexts. Paradoxically, they share negative experiences with some of their teachers, where they observed how is that they wouldn't want to be as teachers, highlighting empathy as a fundamental attitude for the development of teaching skills and identity construction.

We noticed that ideals go constructing along their trajectory as students and they are very significative since they determine how they want to be as teachers and how *they don't want to be*, which allows us to confirm what Passeggi and Souza (2010) point out about narratives: reveal subjectivation and socialization forms between space and time. They state that social, affective, and relational experiences more than scholarly contents, determine its relationship with learning and knowledge."

That's during the student's stage; however, it is also important to know the experience when they enter the profession, where most of them refer to certain fears that accompany the first year. They said that is very important to have support from others so they can develop properly and that perhaps living together with other teachers in the same school sometimes is worse than teaching for the first time.

The sense of belonging with colleagues and the institution itself is a crucial element for the development of teacher's identity highlighting aspects that help us to understand how is it that they were building their identity, from the initial motives that led them to become professors, the feelings they had and the way they felt by belonging to an institution like the university and the relationship with other fellows. In this sense feelings, affections and subjectivity become relevant components in reality comprehension (Rivas Flores & Herrera Pastor, 2009).

About the meaning they attribute to their work as teachers, they emphasize a person who is self-learning or self-taught as a main factor that defines their professional profile. Furthermore, they said that one of the most important abilities is to become a professor–researcher since the investigation allows them to actualize permanently.

Conclusions

The narratives we obtained showed subjective and social components that construct their teacher's identity, which permitted us to analyze and reflect upon different ways of practicing teaching that may lead to the definition of identity in a cultural context. Another aspect of interest is the fact of thinking about the role of teacher and researcher that may lead them to look for new pedagogical strategies and content for teaching in a better way.

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215 Conceptual PlayWorlds supporting infants-toddlers' science concept formation at home

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: family science pedagogy Infants-toddlers Conceptual PlayWorlds

SHORT ABSTRACT

Family is the first core institution for young children's formation of science concept, especially during infancy and toddlerhood. Yet, little is known about family science pedagogy for infants-toddlers. This study examines what families do to support infants-toddlers' science concept formation at home under the condition of an educational experiment of Conceptual PlayWorld (CPW) of the story of *We Are Going on a Bear Hunt*. Eighteen families with infants (aged 4 to 24 months old, with a mean age of 10 months old) participated remotely in this study. Multiple data sources were collected, including 11.5 hours of interviews, 29 hours of Zoom workshops and storytelling sessions, and 5.5 hours of video data recorded by families of their CPW at home. The cultural-historical conception of the development of everyday and scientific (academic) concepts were used as analytical lenses. It was found that families support their infants-toddlers' science concept formation through: (1) Drawing infants-toddlers' attention to the salient features of science phenomena present in their everyday family experiences; (2) Encouraging infants-toddlers to actively engage in the science phenomena through practical actions for problem solving or through exploration and experimentation; (3) Introducing and associating related science concepts in everyday and imaginative narrative language. It is argued that the collective play narrative brought by Conceptual PlayWorld educational experiment support families to leverage and create science moments at home which create motivating conditions for their infants-toddlers' science concept formation, and play, imagination, and the mediating role of language are central to create those motivating conditions.

EXTENDED SUMMARY

Background

In a cultural-historical tradition, family is regarded as the first essential institutional setting for a child's science concept formation, as early as infancy and toddlerhood (Sikder, 2015; Sikder & Flear, 2015; Setioko & Ding, 2022). Infancy and toddlerhood have been regarded as a unique and critical period for laying the foundation for science concept formation (Flear et al., 2020; Lloyd et al., 2017). Yet, very little of existing research examines science concept formation and pedagogy for the cultural age period of infancy and toddlerhood (O'Connor et al., 2021). In addition, there are rich potential opportunities in everyday family lives for infants-toddlers to engage with science concepts (Sikder & Flear, 2015). Yet, science concepts, conceptualised in this paper as the culturally and historically accumulated scientific (academic) knowledge which support children to approach and understand

science phenomena they observe and experience in a more sophisticated and systematic manner, cannot be formed independently by infants-toddlers. Rather, the formation of science concepts requires adults to intentionally support infants-toddlers to dialectically interrelate everyday understanding to science-related knowledge (Fragkiadaki et al., 2023). The majority of existing research on family science pedagogy has been devoted to exploring the important role families play in developing their children's science interests (Zimmerman et al., 2013), attitudes (Aktamış, 2017), dispositions (Legare et al., 2017), engagement (Raynal et al., 2021) and competencies (Setioko & Ding, 2022), which have been identified to correlate with their future science academic achievements (Perera, 2014; Aktamış, 2017) as well as their aspirations for science careers (Ennes et al., 2022) in later years. Yet, what is missing from the existing literature is a nuanced understanding of what families can do or say in their everyday family institutional practice to support their children's science concept formation, especially for the infants-toddlers' age period. And 70% of parents in a survey with 1442 participants conducted by Silander et al. (2018) reported that they require support regarding what they can do at home to support their children's science learning. Therefore, this knowledge is important.

Aim

To fill this gap, this paper presents the findings of a study that sought to analyse the science pedagogical practices of families in the context of their everyday institutional practices under the condition of Conceptual PlayWorld educational experiment to give a more nuanced understanding of family science pedagogy for infants-toddlers. More specifically, it focuses on answering the research question of "what do families practice to support their infants-toddlers' science concept formation in the context of their everyday family institutional practices under the condition of Conceptual PlayWorld educational experiment?"

Methods

This study adopts an educational experiment design in which the Conceptual PlayWorld pedagogical model was systematically introduced into the family institutional practices as a purposefully planned intervention to generate meaningful data in relation to the research question (Hedegaard, 2008). Eighteen families with infants- toddlers (mean age of 10 months, ranging from 4 months to 24 months old) from Melbourne, Victoria, Australia, participated in the study remotely through ten Zoom sessions. The study were conducted in two rounds: one in March and the other in July 2021. Each round had nine participating families. There were three small groups in each round, allowing families to choose based upon their availability. Before the educational experiments started, a recorded pre-CPW semi-structured interview was conducted with each individual family. Following the ten half-hour Zoom sessions in small group settings, a post-CPW semi-structured interview was conducted again with each individual family (one out of the eighteen families did not participate in this post-CPW interview due to the change in their family situations, yet this did not affect the study's findings). In between the ten Zoom sessions over five weeks, families are encouraged to share videos of their implementation of the CPW at home.

Results

It was found that families leveraged and created science moments in their existing everyday family institutional practices to support their infants-toddlers' science concept formation through: (1) Drawing infants-toddlers' attention to the salient features of science phenomena present in their everyday family experiences through strategies including, providing simple scientific narratives and

explanatory statement, questioning. (2) Encouraging infants-toddlers to actively engage in the science phenomena through practical actions for problem solving or through exploration and experimentation. (3) Introducing and associating related science concepts in everyday and imaginative narrative language.

Conclusions

It is argued that the collective play narrative brought by Conceptual PlayWorld educational experiment support families to leverage and create science moments at home which create motivating conditions for their infants-toddlers' science concept formation, and play, imagination, and the mediating role of language are central to create those motivating conditions.

How interaction with the participants is planned?

Facilitated participant discussions stimulated by short data narrative from the paper

Acknowledgement

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223 Implementing Collaborative Intervention Within Nursery Teacher Development Programs in Japan

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Collaborative Intervention Nursery Teacher Development Programs Expanding learning

SHORT ABSTRACT

In response to the growing need for innovation in Japanese nursery teacher education, this paper explores the implementation of collaborative interventions within development programs. Drawing from Engeström's expansive learning model (2015), we examine the potential for such interventions to address the current challenges faced by teacher training in Japan, as analyzed by Yamazumi (2021). Our study aims to identify practices that empower Japanese nursery teachers to construct their own learning systems, enabling transformative agency among educators to meet the evolving demands of early childhood education.

Employing an activity-theoretical lens, we scrutinize the effectiveness of collaborative intervention strategies in fostering expansive learning environments within Japanese nursery schools. The research methodology involves a critical analysis of the existing nursery teacher training structure, incorporation of feedback from nursery teachers participating in these programs, and a comprehensive evaluation of the impact on their professional growth and the subsequent improvements in childcare practices.

Our findings suggest that collaborative interventions are instrumental in driving change and enhancing both the professional competencies of individual nursery teachers and the collective capabilities of educational institutions. The study affirms the necessity of active agency formation in educational training programs, supporting the notion that autonomy in learning processes can lead to significant pedagogical innovation. Ultimately, the research highlights the transformative potential of collaborative methods in nursery teacher training programs, signaling a departure from traditional approaches and a move towards dynamic, community-engaged educational practices in Japan.

EXTENDED SUMMARY

Background

The landscape of early childhood education in Japan is transforming, necessitating innovations in nursery teacher education. Existing training models have been challenged to adapt to these evolving educational demands, sparking a dialogue on reformative practices. Engeström's expansive learning model (2015) and Yamazumi's (2021) insights into Japanese educational reform lay the groundwork for rethinking current practices and incorporating collaborative interventions within nursery teacher development programs.

Aims

This study is designed to explore how collaborative interventions can be effectively implemented within Japanese nursery teacher training programs. Specifically, it aims to (1) address the challenges present in the current teacher training paradigm, (2) empower nursery teachers to develop and manage their own learning systems, and (3) promote transformative agency that aligns with the dynamic needs of early childhood education.

Methods

Adopting an activity-theoretical framework, our methodology encompasses a critical analysis of the prevailing structure of nursery teacher training in Japan. This approach involves gathering and integrating feedback from nursery teachers engaged in development programs, followed by a thorough evaluation of the interventions' impact on their professional development. The study assesses how these interventions contribute to the enhancement of both individual competencies and the collective efficacy of educational institutions, fostering expansive learning environments that cater to contemporary educational challenges.

Results

The findings from our research indicate that collaborative interventions play a crucial role in instigating change within the nursery teacher training system. These interventions have shown promise in improving professional competencies among individual teachers and fostering a collective growth mindset within educational institutions. Through collaborative learning, nursery teachers can develop the agency required to self-direct their professional growth and innovate in practice. This empowerment has led to discernible improvements in childcare practices, reflecting a shift towards more community-engaged and dynamic educational methods.

Conclusions

The study concludes that forming active agency through collaborative intervention is essential in nursery teacher training programs. The empowerment of educators to autonomously construct their learning systems and engage in transformative practices is a cornerstone of pedagogical innovation. The research underlines the importance of departing from traditional teacher-centered models and embracing a more community-oriented approach that encourages nursery teachers to be agents of change. These shifts are not only vital for the professional growth of individual educators but also pivotal in advancing the field of early childhood education in Japan. The implications of this study suggest that embracing collaborative methods in teacher training can significantly contribute to the development of a responsive and innovative educational landscape.

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224 Cultivating transformative digital pedagogies: potentials from a South African Change Laboratory

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Change Laboratory Digital Technologies Digital Pedagogies Dealing with technology; Dealing with inequality

SHORT ABSTRACT

This presentation addresses the ‘transformation’ of postcolonial education with digital technologies. In Southern Africa, the promise of how increased digitisation will address our global socio-economic pursuits and local educational crises has propelled research and development. However, to date, the potentials of digitised education have fallen short of their intended impacts. I locate this lack of transformation to how contemporary research overemphasises digital technologies in provoking change while downplaying the agency of the educators and students who are to meaningfully draw on these devices within their diverse learning settings.

EXTENDED SUMMARY

An important question facing many educational institutions in Southern Africa is how to best take hold of and cultivate digital technologies for teaching and learning. This question has propelled research interest in developing and curating innovative pedagogies that strive to maximise the potential of digital devices to bolster education.

However, much of this research and development into new digital pedagogies have been found wanting. Specifically, critiques have questioned how ‘truly’ innovative or transformative these digital pedagogical models are (Burston, 2013; Kukulska-Hulme & Shield, 2008). Moreover, further questions have focused on how relevant or transferable digital pedagogy can be, as educational sites may have vast contextual differences (Black et al., 2020). These critiques raise whether innovative, contextually relevant digital pedagogies can be created, and if so, how.

In response to these concerns, I illustrate how Cultural-Historical Activity’s Theory (CHAT) dialectical understanding of development, captured within the concept of Expansive Learning (EL) and methodology of Change Laboratories (CL), proffers researchers and educators a theoretical and methodological framework which can help cultivate these calls for more localised, relevant, transformative pedagogies with digital technologies (Engeström, 1987; Virkkunen & Newnham, 2013). To illustrate these potentials, I extensively chronicle my doctoral CL research intervention, which sought to find drivers for English Language pedagogical transformation with digital technologies. Located at a higher education institution’s English language teaching department, this research intervention facilitated teacher participants’ expansive agency towards developing a digital language pedagogy tailored to their students’ needs and work within their unique learning environment’s constraints.

Key findings indicated that in developing this pedagogical model, teacher participants faced primary contradictions stemming from their activity system's object towards the rules, mediators and division of labour, which centralised their control over language instruction. By unpacking these contradictions deeply embedded within relations of power, teacher-participants could cultivate a digital language pedagogy of *co-creation*. This *co-creation* model emphasises teacher and student collaboration within language instruction. Of particular interest is that rather than digital technologies becoming the object of such instruction, they remained strictly a mediational means to facilitate this language co-creation.

I argue that such findings offer educational researchers and educators in postcolonial territories an alternative framework for digital pedagogical development. As discussed earlier, many contemporary digital educational research studies far too often prioritise digital technologies in the transformation they seek to drive or find (Amory, 2007, 2010). These studies miss the finer details of context and power that impact the unique transformational needs of the educators and the students those studies seek to empower (Oliver, 2011). As a result, rather than these digital technology studies offering radical potentials for education, their intended transformational results remain superficial, short-lived, and mostly irrelevant to the communities who participated in them (Engeström et al., 2014). The findings from my formative-intervention research intervention illustrate that it is possible to facilitate relevant, local transformation, but it requires researchers to shift their focus from digital technologies to the educators and students who are expected to use these devices meaningfully in their daily work practices.

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225 Agency-growth Pedagogy: a pedagogy to support the development of child agency

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Agency-growth pedagogy Agency development Practice

SHORT ABSTRACT

Child agency has been largely advocated in Australian early childhood education frameworks. However, a gap has been identified between policy and practice for educators to support children's agency (Houen et al., 2016; Lam, 2013; Mentha et al., 2015). Furthermore, very few research explaining how agency develops (Sannino, 2022; Varpanen, 2019), which in turn causes educators' confusion in practice. Building upon these gaps, this research aims to study how educators' practices support children's agency development. This research adopts the cultural-historical research methodology with the cultural-historical theory to problematise the research focus and the experimental-genetic method to guide the data collection. 5 university-degree qualified teachers and 12 children aged 4-5 participated in this research.

Four stages of agentic behaviour are identified based on three aspects of children's behaviour, task, tool and operation, to highlight their qualitative changes. With the understanding of the dialectical nature of agency development, teacher participants use a combination of strategies to support children's specific needs in those three aspects. 15 strategies observed and validated in this study are used flexibly to support different aspects of children's agentic behaviours, which are classified into the task-oriented, tool-oriented and operation-oriented categories. As such, this research proposes *an agency-growth pedagogy* with a theory to explain the dialectical nature of agency development, and an approach that guides educators' practice to support the developmental process of child agency. These findings contribute to the pedagogical toolkit of early childhood educators and researchers not only in Australian context, but also on a global scale.

EXTENDED SUMMARY

Child agency has been recognised and advocated in Australian early childhood education in its national curriculum frameworks, *Belonging, Being & Becoming: The Early Years Learning Framework for Australia* (Department of Education, Employment and Workplace Relations, 2009) and *Belonging, Being & Becoming: The Early Years Learning Framework for Australia V2.0* (Australian Government Department of Education, 2022). However, educators and researchers identified a gap between policy and practice, as little has been addressed about educators' interpretation and implementation (Houen et al., 2016; Lam, 2013; Mentha et al., 2015). For example, both frameworks require educators to support children to 'develop' sense of agency but how educators can enable such development is unclear. This gap also exists in the research field with very few studies focusing on

agency development (Sannino, 2022; Varpanen, 2019). Building upon this research gap, this research aims to study how educators' practices support the development of child agency in preschools. This study uses the cultural-historical research methodology (Veresov, 2019) with the cultural-historical theory framing the research focus and the experimental-genetic method guiding the data collection. Agency as an abstract subject, manifests in children's behaviours. This study follows the term, 'agentic' proposed by Bandura (2006), to describe the manifestation of agency in acts. Children's agentic behaviour is conceptualised with cultural form of behaviour, which enables agency to become tangible and studiable following the law of cultural development (Vygotsky, 1994a, 1998, 1999) and the law of sociogenesis (Vygotsky, 1998). Another concept, social situation of development (Vygotsky, 1998), is used to conceptualise the teaching practices, as the social environment in this study, that support the developmental process of child agency. Therefore, these two concepts constitute a theoretical framework to study the practices that specifically becomes the source of children's agency development.

This study uses a five-phase plan for data collection to examine the existing practices used in the early childhood classroom and testify the efficacy of the adapted practice, designed with a cultural-historical lens, in terms of supporting children's agency development. This include online interviews with teacher participants, on-site observations of their practices, and cultural-historical workshops where the cultural-historical framework is introduced and the adapted practices are co-designed by the teacher and the researcher. Five university-degree teachers and twelve focus children aged four-to-five participated in this research, with 313 minutes of interviews, 293 minutes of cultural-historical workshops and 2360 minutes of observations in total, across three types of early childhood settings, dedicated preschools, centre-based child care and family day care in Australia. The principles of buds of development, cultural tools and sustainable results (Veresov, 2014) helps the researcher to capture and trace the qualitative changes in children's agentic behaviours during on-site observations. This research examines the existing practices teacher participants currently use and the efficacy of adapted practices based on the discussions in the cultural-historical workshops.

This study identifies four stages of agentic behaviour throughout the developmental trajectory of agency, mostly following the law of cultural development and sociogenesis (Vygotsky, 1994, 1998, 1999). The findings reveal that the qualitative changes that occur in three distinctive aspects of each agentic behaviour, task, tool and operation, signifies children's transition between different agentic stages. Educators, with this understanding, can identify the current stage of a child's agentic behaviour through three aspects, the task, tool and operation; synchronously, they also observe and recognise the child's challenges or needs in each aspect. To enable children's agentic behaviour to continue developing, the educators' use a combination of strategies that cater to the child's specific needs in those aspects. These strategies are categorised as the task-oriented, tool-oriented and operation-oriented. By scaffolding the child's specific needs in each aspect, these strategies support the progression of children's agency from their current stage to the next.

There are 15 strategies identified from this research that supports the developmental process of children's different agentic behaviours. Teacher participants usually use a combination of the task-, tool- and/or operation-oriented strategies to support relevant aspects of children's agentic behaviour. This study names such practice that support children's agency development as the *agentic-growth* practice. The agency-growth pedagogy is then proposed by this research with a theory clarifying how agency develops dialectically in preschool-aged children through four stages, and an approach that

explains how educators can support the development of child agency through three aspects, task, tool and operation. Currently, the agency-growth approach is consisted of 15 strategies that can be tailored flexibly to different aspects of agentic behaviours.

Although the agency-growth pedagogy is identified based on data collected in Australian context, it has the potentials to be applied in a broader context. Therefore, with this practical outcome, this research contributes to the gap between policy and practice for educators' interpretation and implementation, which can also become a complement to the current curriculum frameworks.

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226 SciGrow: a ‘Seriously Playful’ Digital Game for Teaching/ Learning Science Concepts through CHAT

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Presentation: Poster presentation (presented in person at the congress)

Theme: Meaningful education

Keywords: Digital Science Games Motivation and Learning Play Bringing together theory and practice;

SHORT ABSTRACT

South African students continue to perform exceptionally poorly on international benchmarking science tests, such as the Trends in International Mathematics and Science Study (TIMSS). Research indicates various reasons underpinning this underperformance, such as a lack of student motivation to learn science and a dearth of teachers’ content knowledge. However, significant evidence, especially in serious digital game research, shows that games can positively impact students’ engagement with and attainment in science education.

We have developed a mobile science game for Grade 5 educators and students, drawing on cultural-historical principles of teaching/learning, and this paper outlines our development of this game

EXTENDED SUMMARY

In an age where humanity is facing its most significant social and ecological challenges, the need for schools to cultivate future ‘scientists’ with deep scientific knowledge, complex analytical skills and the moral rationale to develop sustainable socio-ecological interventions is paramount (Andersson & Wallin, 2000; Sternäng & Lundholm, 2011, 2012). Worryingly, research in South Africa indicates that despite our need for such scientists, students in school are not motivated to study science, nor are they developing a deep understanding of the science concepts and skills that are so desperately needed (Spaull, 2013; Venkat & Spaull, 2015).

Spurred by research evidencing the potential of digital science games to aid student motivation (Fleer, 2016), but critiquing their single-player design, strict focus on concept rehearsal, and development for older learners alongside a lack of contextual awareness (see Cheng et al., 2015; Fadda et al., 2022; Hussein et al., 2019; Kalogiannakis et al., 2021; Tsai & Tsai, 2020) led us to question what a Cultural-Historical approach towards digital game development could offer. Our interest led to the question that this paper seeks to address. Namely, how can Cultural-Historical Activity Theory (CHAT) facilitate the development of a digital science game that will help motivate South African learners to invest more deeply in science learning and cultivate their scientific literacy and conceptual development?

In this paper, we present the culmination of our work - a ‘seriously playful’ digital science for teaching/learning science – SciGrow. Premised on Vygotsky’s (2016) and Neo-Vygotskian understandings of ‘play’ developmental qualities residing in its relational and imaginative capacities (Fleer, 2009, 2014, 2016), we showcase how these understandings have been applied to inform SciGrow’s game design, scenario and mechanics.

To do so, we invite attendees to follow our in-depth unpacking of an initial game scenario where we showcase how SciGrow's virtual 'dystopian' world invites students to 'seriously play' to revert the digital world to what it once was. In our presentation of this scenario, we highlight how the game's scenarios are 'playfully' premised on developing learners' motivation by engaging learners in various contextually and cognitively demanding tasks that invite them to experiment with scientific concepts and principles. We then illustrate SciGrow's 'serious' design by demonstrating how the game's rule-based tasks ask students to substitute/ inverse digital objects from their meanings, providing them space to imaginatively engage with scientific concepts and skills by being a 'scientist' invested in finding and developing socio-ecological interventions to save the SciGrow's digital world.

We then discuss our future study with primary South African learners and outline subsequent SciGrow tasks focused on more complex and collaborative educational experiences with teachers and learners. We end our presentation by discussing the potential of applying CHAT-informed approaches in developing meaningful teaching and learning experiences with technology and discussing the possibilities for future 'seriously playful' digital game development.

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227 Pre-service teachers' expectations of professional development in field practice

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Presentation: Poster presentation (presented in person at the congress)

Theme: Bringing together theory and practice

Keywords: Partnership Professional development Field practice

SHORT ABSTRACT

Participants involved in teacher education should have a shared understanding of teacher education's core elements and how they can be implemented (Ministry of Education and Research, 2017). The aim of this study is to get knowledge about what expectations PSTs have about their professional development during field practice.

All PSTs in their third year at two teacher education programs were asked to answer a survey which covered questions about PSTs reflections about the enhanced focus on their main subject in field practice. The data material in this study were taken from the open responses in the survey. 23 PSTs had answered the survey when preliminary analysis was conducted. Second generation CHAT was used as inspiration in the analysis.

Preliminary results revealed two main tensions. The PSTs that gave responses connected to the first tension were positive to the changes and understood them as an opportunity to go more in-depth in the main subject. Together with their community they could work out as a community of practice. The second tension consist of PSTs who described that it could be a battle between the PSTs in the group about getting the opportunity to teach as much as possible. The PSTs did not see their fellows as developing in a community, rather they described an intention of individual learning.

The findings give directions to how teacher education programs should facilitate a shared understanding of field practice and the value of participating in sociocultural practices.

EXTENDED SUMMARY

Pre-service teachers (PSTs) highly value field practice, where they are working in groups with three other PSTs. Their school-based teacher educator (SBTE) is main responsible for mentoring them during field practice. A university-based teacher educator (UBTE) is also responsible for collaborating with the SBTE in mentoring and evaluating the PSTs. One central goal is to mobilize the participants involved in teacher education so that they develop a shared understanding (Ministry of Education and Research, 2017).

The participants in this study are PSTs at two teacher education programs at one Norwegian university. When this study took place, they were in their third year. Later in the semester, they were going to have field practice, and during this period they were also going to work on a research and development (R&D) thesis. In a connection with a reorganization of field practice at their teacher education programs, they were asked to give feedback on their thoughts about the changes they

were presented. Briefly summarized: The intention with the reorganization was to put more emphasis on the value of participating in sociocultural practices. The main changes were connected to being in a group with PSTs with similar subjects, and an enhanced focus on the subject in their R&D thesis. The aim of this study is to get knowledge about what expectations PSTs have about their professional development during field practice. The findings will give directions to how teacher education programs should facilitate a shared understanding of field practice and the value of participating in sociocultural practices.

All PSTs in their third year at two teacher education programs were asked to answer a survey. The sample can be described as a *homogenous sampling* process (Tashakkori & Teddlie, 2009). When the preliminary analysis was conducted, 23 PSTs had answered. Survey data were collected via online survey through Nettskjema.no. The survey covered questions about PSTs reflections about the enhanced focus on their main subject in field practice in their third year. The items were open-ended, consisted of a likert-scale or had concrete questions. The data material in this study were taken from the open responses in the survey. Second generation CHAT (Engeström, 2001) was used as inspiration in the analysis.

Preliminary results revealed two main tensions, labelled as *Part of a community* and *Who will win the battle of teaching?* The PSTs that gave responses connected to the first category were positive to the changes and understood them as an opportunity to go more in-depth in the main subject. Together with their group, the SBTE and UBTE they could work out as a community of practice, using different knowledges. According to second generation CHAT, the PSTs described their group as one subject, and reflected upon positive tensions between the subject and the community. They emphasized horizontal division of labor (Engeström & Sannino, 2010).

The second tension consist of PSTs not sharing the same enthusiasm. The PSTs described that it could be a battle between the PSTs in the group about getting the opportunity to teach as much as possible. The PSTs did not see their fellows as developing in a community, rather they described an intention of individual learning. Some of these participants also worried that the enhanced focus on their main subject reduced getting opportunities to teach other subjects. The PSTs did not understand the value of being part of sociocultural practices.

While the participants belonging to the first tension share the same object as the national regulations and teacher education, the participants giving responses to the second category do not share the same object as the national regulations and teacher educations understanding of what field practice should contain. The results reveal that the partner school and university must invest in facilitating a shared understanding between the different participants in teacher education. A part of this work is to emphasize the importance of being part of sociocultural practices.

This current study has revealed that pre-service teachers have different expectations about what they are going to learn during field practice. The findings implicate an enhanced focus on the importance and value of being part of a professional learning network, or part of sociocultural practices. Both SBTEs, UBTEs, and those being responsible for field practice in teacher education should work together with PSTs to gain a common understanding of what field practice entails. Especially the opportunities that relies in being part of a community of practice, or professional learning network, is something that should be more enhanced in teacher education. Overall, the preliminary findings reveal that effort should be put in the activity to facilitate shared understandings.

We would like to ask the audience: *How can CHAT be used in development processes involving participants with different engagement in reorganizing processes?* The intention with the discussion is to gain knowledge about how to continue our work after the conference.

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229 Teacher education and schools responsibility for preparing and including PSTs as teacher researchers

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Teacher researchers Shared object Teacher education

SHORT ABSTRACT

The aim of this study is to get knowledge about how pre-service teachers (PSTs) understand the concept of teacher research, and how they feel prepared for taking on this role when they begin their professional life. Zeichner (2003) says that teachers will become better at what they do by conducting research and that the quality of learning for their pupils will be higher. Teacher research can be defined as “all forms of practitioner enquiry that involve systematic, intentional, and self-critical inquiry about one’s work” (Cochran-Smith, 1999). According to regulations relating to the framework plan for teacher education in Norway, PSTs should “continually develop their own and the school’s collective practices and carry out limited research projects under guidance.” Data was collected through a questionnaire with open-ended questions (n=21) and two focus groups interviews (n=7). Analysis was conducted through the lenses of second-generation CHAT, and preliminary finding reveals that there are different tensions and contradictions between the different nodes in the triangle. The PSTs are the subjects. They are clear about both what teacher research can contribute to, and what content in teacher training can provide experience with teacher research. However, there is a gap in how prepared they feel they are for being teacher researchers. There is a variation between the different teacher education programs and the different subjects. The participants reflect upon the importance of whether they will be included in a community at the school they start working at, which is crucial to become teacher researchers.

EXTENDED SUMMARY

All Norwegian teacher education programs are at a master level. During their five years, the pre-service teachers (PSTs) are going to conduct a research and development task (R&D) and a master thesis. According to regulations relating to the framework plan for teacher education in Norway, PSTs should “apply, alone and in collaboration with others, relevant methods from research and development to continually develop their own and the school’s collective practices and carry out limited research projects under guidance” (UHR, 2016). The focus on skills to be a teacher researcher is put forward as important to provide prospective teachers with research skills and raise teacher research awareness. Future teachers that can apply research-based working methods and participate in the development of school practice are of considerable value (Higgins, 2018). According to Cochran-Smith and Lytle “all forms of practitioner enquiry that involve systematic, intentional, and self-critical inquiry about one’s work” (Cochran-Smith & Lytle, 1999, p.22).

The aim of this study is to get more knowledge about how PSTs understand the concept of teacher research, and how they feel ready and prepared for taking on this role when they begin their professional life. This new knowledge is important for teacher education, which must prepare the students for this role as a professional practitioner (cf. the framework), but it is also important for the school, which will accept the newly educated teachers and contribute to the continued development of the research-based teachers.

The study has used qualitative methods to answer the research questions. Data consists of a questionnaire with open-ended questions (n=21) and two focus group interviews (n=7). The participants are PSTs in their penultimate or final year of study. All of them had submitted their R&D thesis, and a few had also submitted their master's thesis when the interviews were conducted. The analysis was conducted by using second generation CHAT (Engeström, 2001).

Preliminary results revealed that the PSTs emphasize three focuses on how they understand the concept of teacher research: as important for own professional development and the importance of adapting their teaching to their students in the future. These understandings indicate the direction of the activity and can be described as the object they are working towards. Despite this understanding, the PSTs presented two different understandings of what a teacher researcher is: as something that is included and implemented in their daily work, indicating that you are never fully trained as a teacher. The second understanding was that teacher research is something they think a university researcher should take responsibility for. These two different understandings show that there are contradictions within the subjects, and that it is challenging to describe the PSTs as one consensus group.

The participants highlight the importance of their R&D and master thesis in their professional development as teacher researchers. They also emphasize field practice as important. These activities can be seen as the tools in the activity system. Another tool is reflection which helps them to bridge theory and practice. However, the PSTs are not satisfied with how teacher education facilitates the activity between the two arenas being responsible for their professional development. The PSTs belong to different teacher education programs, being part of their community. In addition, the PSTs describe that the subjects they are taking varies. The variation and challenges they describe are first and foremost contradictions between the subjects and the community, but the subjects have different guidelines which are placed in the node rules.

Even if most of the participants feel that they are prepared to be a teacher researcher, some of them do not feel capable. Most of the participants express that whether they will be a teacher researcher relies on how their future workplace will manage to support and include them in a community having focus on teacher research and development.

The results from this study indicate that it is challenging to describe PSTs as one subject because of the manifold of different voices. Despite the variation, the PSTs emphasize the importance of reflection between theory and practice. There is a gap between the PSTs understanding and the national regulations of what a teacher researcher is. The second gap is between theory and practice, because some of the participants still don't feel secure about how they can be a teacher researcher. There is a need to strengthen a shared understanding between PSTs and teacher education. In addition, it is also important that their future schools understand the importance of including and embracing PSTs when they start their career.

We start with a power point presentation presenting the study. The presentation will end with a model we have developed, and we will invite the audience to discuss if the model is appropriate and

understandable. We also hope for a discussion about how the results can be further used to strengthen teacher education.

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231 Transforming Dialogue: Creating a forum for collaboration where research and preschool practice meet

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: preschool teacher-researcher collaboration co-authoring dialogue

SHORT ABSTRACT

Collaboration between educational researchers and practitioners in Sweden is increasing due to public policy and a growing interest in different forms of practice-based research, bringing researchers and practitioners together to bridge the gap between research and practice in educational settings. This study investigates how a collaborative project in which preschool teachers and researchers co-author a book centred on dilemmas arising from preschool practice can contribute to further collaboration and development in the participating organisations and transform the dialogue on preschool development by creating a shared forum where research and practitioner perspectives meet. The study adopts the third generation of cultural-historical activity theory (Engeström, 1987, 2015) as its theoretical framework. The empirical data comprises observations gathered during a two-day dialogue meeting, where researchers and preschool teachers convened to advance the process, along with interviews conducted with participants following the project. Preliminary findings indicate that participants perceive the collaborative book project as a forum where research and practical perspectives intersect and benefit the dialogue. The participants return to their organisations with experiences, new knowledge, and contacts to build on in future collaborations. Throughout the process, tensions arose that facilitated learning experiences beneficial for the participants when engaging in collaborative settings and acting in shared fora. The model outlined in the book illustrates how both perspectives enhance discussions regarding specific dilemmas from the preschool practice. Additionally, it offers a methodological contribution and presents an approach for integrating these perspectives that extends beyond the dilemmas addressed in the book.

EXTENDED SUMMARY

Background

In Sweden, public policies promoting educational collaboration coupled with increased interest in practice-based research have brought school professionals and researchers together, bridging the gap between research and practice in the field of education. Universities are obligated to collaborate with the surrounding society, whereas municipalities have no similar legal requirement. However, the Swedish Education Act (SFS 2010:800), which mandates that all education is grounded in science and proven experience, serves as a compelling motivator for municipalities to seek collaboration with universities. Collaboration is a concept imbued with positive implications, anticipated to provide solutions to challenges that may be difficult for individual actors to tackle alone. However,

collaboration also presents complexities and introduces new challenges that participating actors must navigate for collaboration to thrive. This study is about a collaboration project in 2022-23, where preschool teachers and researchers co-authored a book, delving into didactical dilemmas from the preschool practice. The third generation of activity theory (Engeström, 2015) is employed to examine how the collaborating partners endeavoured to create a forum where insights, expertise, and languages from practice and research could mutually enrich each other.

Aims

This study explores the outcome of a collaborative project where preschool teachers and researchers co-author a book focussing on dilemmas encountered in preschool practice. The study aims to investigate how the project can facilitate further collaboration and development within participating organisations while transforming the dialogue on preschool development by establishing a shared forum where research and practitioner perspectives intersect.

Methods

The empirical data comprises observations gathered during a two-day dialogue meeting, where seven researchers and thirteen preschool teachers, convened to advance the writing process, along with interviews conducted with participants following the project. The data from the observations and interviews underwent thematic analysis. The analysis of tensions and contradictions during the collaboration process was grounded in discursive manifestations within the empirical data (Engeström & Sannino, 2011).

Results

Tentative results suggest that the collaborating partners entered the project with high expectations and driving forces for engaging in collaboration at personal and professional levels. They recognised a significant potential in the book project's ability to establish a shared platform where the intersection of diverse perspectives fosters the development of preschools, teacher education, research, and future collaborative practices. Bringing perspectives from practice and research together enriched the dialogue and opened doors between the two organisations that could promote further collaboration. However, financial constraints, staffing shortages, competing developmental initiatives, time constraints, and ambiguity regarding collaboration roles present challenges to engaging in collaborative activities. Conversely, factors that promote collaboration include tangible outcomes, supportive leadership, curiosity, and responsiveness among participants. Throughout the process, tensions arose within and between the activity systems regarding, for example, long-term development or quick fixes, exposing shortcomings or showcasing strengths, academia and practice, and taking the lead or passing the baton. The tensions unveiled underlying contradictions that influence collaboration practices and the establishment of a shared forum while serving as catalysts for change and progress. By actively employing tools and strategies provided by fellow preschool teachers and researchers, the preschool participants navigated challenges and empowered themselves. Meanwhile, researchers also faced situations involving conflicting interests but drew upon past experiences collaborating with practitioners, allowing them to trust in the process and avoid similar frustration levels as preschool teachers.

Conclusions

A shared driving force for the participants to engage in the collaboration project was its capacity to establish a forum where perspectives, expertise, and professional language from preschool practice and research could meet. Following the project, two forms emerged through which the project could

contribute to transforming the dialogue. First, the project could have an impact at a personal level, as tensions that arose fostered learning and generated new knowledge among the participants, who brought back to their respective organisations, insights into how the junction of perspectives benefits both research and development in preschool settings. They collectively took ownership of the dialogues presented in the book, and for preschool teachers, participation had empowering and professional development aspects, motivating them to play a more active role in research. Moreover, the project could facilitate connections between organisations, create ripples, and pave the way for future collaborations. Secondly, the book serves as a platform for dialogues surrounding specific dilemmas from various perspectives while also offering a framework for addressing other challenges. Its diverse perspectives can potentially resonate with active preschool teachers, preservice teachers, and university educators. The model outlined in the book offers a methodological contribution and presents an approach for integrating these perspectives that extends beyond the specific dilemmas addressed in the book. However, it is too early to determine the extent of its impact.

Interaction with participants

After my presentation, I intend to pose questions to the audience regarding how tensions in collaboration processes can contribute to development, and the possibilities and limitations of this project in bridging research and practice.

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233 Applying knowledge co-creation for expansive learning: Lessons from the field.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Knowledge co-creation Expansive learning Transformative agency

SHORT ABSTRACT

This paper is based on research conducted through the Transforming Education for Sustainable Futures, South Africa Hub at Rhodes University. It aims to examine the implications of knowledge co-creation as part of informal expansive learning with marginalised communities. In particular, it focuses on the challenges and possibilities in adopting a knowledge co-creation orientation. The focus areas that emerge from the research are: how do we employ epistemological pluralism, using dialectical approaches for learning and knowledge co-creation with diverse groups and communities, and the foundational idea of multi-voicedness or heteroglossia in expansive learning.

Based on the research used to inform this paper, it is evident that knowledge co-creation is challenging because it evokes ways of being, knowing and doing that have been absented. But it can emerge within specific projects and communities, especially if it engages with diverse ways of being, experiencing, and doing through an ethos of care and solidarity. It is even more challenging across scales, but possibilities arise when ontological and epistemological pluralism and solidarity is actively fostered to create new relationalities - ways of being, knowing and acting together.

EXTENDED SUMMARY

Background

This paper draws on research done within the TEF project, a multi-national collaborative research network which concluded at the end of 2023. While the broader network richly informed the analysis presented here, the focal data is drawn from the South African Hub, at Rhodes University, where the author was located.

The over-riding question motivating this contribution, is how do we work with communities outside of formally bounded activity systems, while still bring the insights that CHAT has to offer? In particular, when working with marginalised communities

Aims

TEF adopted an explicit methodological orientation that foregrounded the concept of knowledge co-creation. This was to realise the aim of developing new knowledge that can assist policy makers, practitioners, non-governmental and community-based organisations in reaching informed practices that are transformative and can contribute to ensuring equitable, just and environmentally sustainable development. A form of distributed transformative agency.

The paper aims to review notions of research, knowledge and learning, based on the TEF South Africa research. As part of the process in searching for meaningful transformative agency it will

consider what can be gained by opening up traditional notions of research and honouring different perspectives and modes of doing, knowing, describing, experiencing and attributing. A framing of epistemological and ontological pluralism, dialectics, and solidarity is put forward as a useful tool for holding both the opportunities and tensions implicit in knowledge co-creation.

Methods

The method used for this paper is a meta-review of the 14 TESF South Africa projects from the focal interest identified above. The resources used for the meta-review include project reports, an array of project outputs which ranged from photography to dramatic performances, 3 collaborative workshops and personal interactions with research teams. The approach can best be described as inductive, in that it begins with detailed observations of the world and moves towards more abstract generalisations and ideas. This bottom-up approach to knowing does not imply an absence of theory, but rather positions theory as what is spoken to, based on the observations. In this case the theoretical concepts of expansive learning and transformative agency are of primary interest.

Results

Most of the projects manifested modes of expansive learning, without formally adopting the established methodology. The contexts of TESF's research were often characterised by intersecting inequalities, structural and epistemic violence. However, the paper does highlight that knowledge co-creation processes in these contexts should not be romanticised. It addresses three main areas where tensions and possibilities surfaced. In these the challenges and tensions are interwoven with the potential possibilities. Movement towards knowledge co-creation requires time, practical support and resources but also demands opening up to being together - and being affected by others' ways of being/knowing - deep listening, undoing familiar practices and breaking down of traditional boundaries and hierarchies.

The first focus area is epistemological pluralism. In this section, some of the tensions identified arise between different forms of research; between positivist forms that utilise concepts that are assumed to be universal and generalisable, and constructionist approaches where methodologies and methods are used to co-construct meaning. Related to this, an approach to decolonising knowledges and the place of Indigenous knowledge systems is offered.

The second area draws on ideas of dialectics and looks at the importance of creating and holding spaces for learning and knowledge co-creation with diverse groups and communities, and across scales. It offers examples of how the creation of safe spaces, critical openness and listening was part of an ethics of care but also highlight the misconceptions and tensions around the possibilities for transformative learning in formal and informal spaces.

The third area addresses the idea of diverse voices and solidarity. Several projects foregrounded the inclusion of marginalised voices and diversity in their work, it is argued that it is not simply 'more voices' that are required for transformative change, but voices in solidarity.

Conclusions

Based on the research used to inform this paper, it is evident that knowledge co-creation is challenging because it evokes ways of being, knowing and doing that have been absented. But it can emerge within specific projects and communities, especially if it engages with diverse ways of being, experiencing, and doing through an ethos of care and solidarity. It is even more challenging across scales, but possibilities arise when ontological and epistemological pluralism and solidarity is actively fostered to create new relationalities - ways of being, knowing and acting together.

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237 Out of the box: inclusive methodological practices for recruiting diverse samples

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Presentation: Workshop (90 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: diversity inclusion sampling

SHORT ABSTRACT

Diversity is a rising theme in educational research, indicative of an increasing focus in educational research on social justice and equity. In CHAT research, the importance of inclusive research is integral, with researchers considering their duty of care to participants at different steps in the research process, from sampling to methods to the dissemination of results. In our research project on adolescents' interest pursuits, we wanted to recruit participants who might have experiences of structural marginalisation, as we wanted to examine the effect of cultural norms and capital on adolescents' interest development. However, we did not want to reduce our participants to a single social characteristic, or assume that they would have relevant experiences of marginalisation they wanted to share, avoiding a deficit lens. This tension of how to achieve representation in research samples is a challenge in the field more broadly.

In this workshop, we share our inclusive sampling approach in a research project examining adolescents' interest development inside and outside of school. We present the context-specific operationalisation of diversity we developed, an 'identity matrix' with intersectional scales related to participants' interests and social characteristics. The workshop will focus on discussing specific cases that we found challenging or complex, and using these to reflect on our methods. At the end of the session, key considerations and solutions will be identified in a plenary discussion. We hope to use these to reflect on our methods and ways of operationalising diversity in educational research from a CHAT perspective more broadly.

EXTENDED SUMMARY

CHAT researchers highlight how all learning spaces are inherently diverse (Gutiérrez, Baquedano-López & Tejada, 1999), and that this hybridity and diversity is important for children's development and learning (Akkerman & Bakker, 2011; Cole, 1998; Roth et al., 2019). However, within a learning space, difference can also be negatively geared. For example, students and families who may be seen as 'different' in a given context can face systemic exclusion and marginalisation (Hancock & Miller, 2017; Ladson-Billings, 2009). The research project we present in this workshop examines the interests of 12–14-year-olds in the Netherlands. We examine interests because these are a source of learning and identity development (Maul et al., 2017; Renninger, 2009), one that innovative schooling methods are increasingly seeking to tap into. Interest development is identity work (Akkerman & Bakker, 2019; Hecht et al., 2019), with adolescents using their developing interests to self-define,

locating themselves within broader social, cultural and historical relationships. However, research indicates that systemic exclusion can also hinder experiences of interest development inside and outside of school contexts (Svenson et al., 2014).

As researchers, we feel it is important to work against such marginalisation in education, through the topics we choose to research, the methods we use, what we do with our results, and how we recruit and treat research participants. Essentially, we want our research to be inclusive, to work against the exclusion that can occur in education and education research (Hilt, 2014; Waitoller & Kozelski, 2013). This workshop will focus on two main ways in which we attempt to be inclusive in our research process, and the complexities and challenges of these: first, designing our research so as to capture experiences of marginalisation in the case that these do occur, and second, designing our sampling process so as to avoid viewing participants from an essentialising, deficit lens, or putting them ‘in a box’.

Firstly, researchers examining systemic exclusion and marginalisation within educational settings who critically reflect on their practice speculate that not all methods are appropriate for capturing these (Paris & Winn, 2013), which can perpetrate the idea that these do not occur. Given the power relations at play between adults and adolescents in school settings (Chadderton, 2012), and the shifting ways in which adolescents use language to self-identify and discuss their identities (Roberts et al., 2008), even adolescents who have experienced discrimination might not choose to reveal this to a researcher in an interview. Looking back further in the research process, sampling is also a moment at which researchers can choose to capture potential experiences of discrimination in their data by purposefully recruiting ‘hidden’ adolescents (Ellard-Gray et al., 2015; Patton, 2002), difficult though this may be. In our interview study, it was therefore important to recruit a diverse group of participants who *might* have experienced marginalisation in our context of the Netherlands. In the context of the Netherlands, social categories that previous research indicated might be relevant for interest development at the age we were examining included gender identity, race, SES, school ‘level’, beliefs, and neurodiversity. However, we also wanted to avoid viewing participants with a deficit lens (Valencia, 1997). CHAT research is anti-essentialising, and researchers caution against assuming that an individual who belonged to a group we saw as marginalised would have experiences of marginalisation, or would see this social category as having a negative effect on their experiences of interest development.

In our study, we therefore aimed to sample participants who were different from each other in both interests and the social categories they were part of, a sample that was as diverse as possible. We wanted to weight the interest pursuits nominated by participants equally with the social characteristics they mentioned as relevant to their interest pursuits. To achieve this, we developed an ‘identity matrix’ with intersectional scales that related to participants’ interests and identities. We defined a ‘notable score’ per scale, and used this to sample participants for interviews. In the workshop, we will share this ‘identity matrix’, along with cases that we found complex to classify, or complex to justify. The main focus of the workshop is discussing these cases as a group. At the end of the session, key considerations and solutions will be identified in a plenary discussion. We hope to use these to reflect on our methods and ways of operationalising diversity in educational research from a CHAT perspective more broadly.

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238 Teachers' narratives on the Teaching Internship: a view from the Cultural-Historical Theory

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Meaning construction Social interactions Teaching

SHORT ABSTRACT

The study is characterized as qualitative research and uses narrative as an instrument for data production. It was carried out with postgraduate students, taking master's and doctorate courses in Education, who participated as interns, accompanying teachers from undergraduate courses at a community institution located in the state of São Paulo, Brazil. Based on the Cultural-Historical Theory, the study aims to understand how the Teaching Internship experiences contribute to the professional education of the teacher-researchers, with a perspective on working in Higher Education. During their experiences as interns, they produced pedagogical narratives that were shared during supervision meetings. The study is based on the foundations of Cultural-Historical Theory to understand the social constitution of the subject and the processes of constructing meaning, having language as the subject's constituent. The act of writing the pedagogical narrative, reflecting on what was experienced, and sharing it with colleagues and the supervising teacher enabled these students to attribute new meanings to teaching. From the perspective of the teacher as a subject who is constituted from the interactions that take place in the context of educational practice, the internship is a space for education and the development of the teacher's professional identity through the exchange of teaching experiences and interactions with the subjects of the professional field.

EXTENDED SUMMARY

This research studies the teacher's education to perform in Higher Education within the scope of the Teaching Internship. The Teaching Internship is understood as a stage in teachers' preparation for working in Higher Education that takes place within the *Stricto Sensu* Postgraduate Program. We start from the premise that the teacher is constituted from the interactions that take place in the context of educational practice. Thus, students who do the internship have greater involvement and richness of experiences and production of meanings about teaching, precisely because of their involvement in the field of Higher Education, which is the undergraduate course, as they experience tensions, provocations, and interactions typical of teaching. This study aimed to understand, through Cultural-Historical Theory, how experiences in the Teaching Internship in Higher Education participate in the professional teaching education of teacher-researchers, who work in elementary education. The Teaching Internship in postgraduate courses is a curricular requirement, intending to prepare teachers to work in Higher Education. To this end, we analyzed (auto)biographical narratives of

students who took the internship in 2022. The study is characterized as qualitative research and uses narrative as an instrument for data production. The choice of narrative in teacher education is due to its multiplicity of dimensions, for example, “data source, method, and educational use” (Prado, Soligo & Simas, 2014, p.4). And because of the importance it plays in teacher’s education, “as an educational strategy, research and intervention practices and it is recognized through its potential in the personal and professional development of teachers” (Gatti et al., 2019, p.195). The research subjects are Master’s and Doctorate in Education students at a community university in the state of São Paulo, Brazil, in 2022. During the Teaching Internship, the students participated in classes alongside the teacher of an undergraduate class, with the aims of observing and monitoring, mediating actions and activities, and taking on a teaching role. Pedagogical narratives were requested from the students regarding their experiences during the internship and were then considered for analysis. In this context, the Cultural-Historical Theory, especially based on the contributions of L. S. Vygotsky (1997, 2000, 2010), is the main theoretical basis with which we dialogue, offering support to analyze the social constitution of the subject and the process of constructing meanings. Vygotsky (2010) asserts that socially shared language is the source of social behavior and consciousness, as language allows us to reconstitute it internally, and individually, organizing our consciousness and behavior. In a dialectical relationship, language is, therefore, constitutive of the subject. Thus, in Vygotsky, we find foundations for understanding the constitution of the subject that occurs in the relationship with others, in social relations, through semiotic mediation. Furthermore, what makes it possible to convert social relations into functions of the subject and forms of their structure is the meaning “conveyed/produced by the ‘word of the other’” (Pino, 2000, p.66). We refer to the meanings which emerge in social relations, are internalized, and internally organized by the subject, and which, consequently, organize the individual. Therefore, the process of producing meaning is understood as the subjects’ movement, carried out through their activity, of accessing the meanings produced and disseminated collectively about something, at the same time as they produce personal meanings for what they experience. Therefore, we assume that narrative writing enables such a process and favors teaching professional development, by articulating what has been experienced and what has been reflected on, to favor the understanding of the implications of the teaching work, as well as the importance of education for a critically oriented performance. From the analyses, we observed that in the relationship with more experienced teachers and undergraduates, internship students transform the meanings of teaching in Higher Education and their role in this space. What was previously distant and even intimidating for elementary education teachers becomes a teaching environment, as they occupy this position. We learned from Vygotsky that we relate to ourselves as people relate to us, that is, individuals perceive their characteristics and make judgments about themselves and their actions in relation to others (otherness). The internship experience thus opens new meanings of teaching, adding to the teachers’ professional education. Teaching Internships are consolidated spaces for education and the construction of a teacher’s professional identity through the exchange of teaching experiences and demands of activities that involve teaching, as well as experiences with subjects in their field of profession and with more experienced professionals in practice. Finally, we propose as an element of interaction with the audience encouraging dialogue about spaces such as the Teaching Internships in which the construction of new meanings for teaching is possible.

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241 Boundary crossing and expansive learning in three Change Laboratories in expert organizations

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: boundary crossing Change Laboratory expert organization

SHORT ABSTRACT

The aim of this study is to widen our understanding of boundary crossing during expansive learning processes. Although organizational boundaries have been much studied and theorized, also within CHAT, organizational boundaries and their crossing have seldom been examined in the context of Change Laboratory (hereafter, CL) interventions. Our research sites for this study are three Finnish expert organizations: a teacher training school, a children's and adolescents' care unit in a hospital, and a university entrepreneurship hub. In each of these organizations, research and development projects using the CL method were carried out. We analyzed the data ensuing from these projects with a specific focus on the ways in which boundaries emerged and were crossed during the progress of expansive learning. In the studied CLs, boundaries were identified both between and within activity systems and crossed with the help of co-created shared models. Our findings show that, regardless of the context, organizational boundaries and their crossing efforts acted as enablers of change in expansive learning. In all three cases, boundary crossing led to the creation of a new activity model for carrying out the organizations' core activities, which makes our findings significant for understanding expansive learning at workplaces. Our results also show the potential of the CL method for enhancing interaction as a key element in renewing social practices and promoting inclusiveness in work development efforts by helping practitioners create new ways to interact across organizational boundaries.

EXTENDED SUMMARY

Background

Organizational boundaries have been much studied and theorized, also within CHAT (Engeström, Engeström & Kärkkäinen, 1995; Kerosuo, 2006; Kerosuo & Toiviainen, 2011). However, Change Laboratory (CL) interventions have seldom been used for examining organizational boundaries, particularly their crossing (Cornér, Kajamaa & Tuunainen, 2022). Organizational boundaries are considered essential for perceiving differences and similarities between industries and organizations (Corporaal, 2018), thereby providing structure for everyday work and a sense of control (Hernes, 2003). Nevertheless, boundaries also separate professional groups and communities, creating challenges, interruptions and discontinuities in collaboration, making crossing of boundaries arduous (Carlile, 2004; Kerosuo, 2006). Consequently, there is a pressing need in CHAT to understand how boundaries are crossed in CL settings. To address this need, we pose the following research question:

What boundaries within and between activity systems were identified and how were these crossed in various Change Laboratories?

Aims

The aim of this study is to widen our understanding of boundaries and boundary crossing during expansive learning processes (Engeström, 2015). Building upon CHAT, we define boundaries as socially, culturally and historically developed (Engeström et al., 1995; Kerosuo, 2006), but also as constantly redefined within social activity and therefore dynamic and evolving. Our study produces new knowledge on how organizational boundaries can be crossed especially when organizations experience a need to qualitatively develop their activities. We also produce new knowledge about the collaborative development of new activity models in expert organizations and mechanisms that allow practitioners from all organizational levels to take part in these change efforts.

Methods

In this study, we examine three Finnish expert organizations – a teacher training school (Case 1), a children's and adolescents' care unit in a hospital (Case 2), and a university entrepreneurship hub (Case 3) – in which research and development projects using the CL method (Virkkunen & Newnham, 2013; Kajamaa & Hyrkkö, 2022) were carried out. Each organization experienced a pressing need for practice renewal. These CL cases were chosen for the analysis because boundaries and boundary crossing were extensively discussed in all of them, while the organizations represented diverse contexts for studying expansive learning.

We approached the CL meeting data from the point of view of 3rd generation activity theory. Our analysis was informed by the theory of expansive learning (Engeström, 2015) and previous research on boundary crossing carried out within it (Engeström et al., 1995; Kerosuo, 2006). We therefore analyzed the data with a specific focus on how boundaries were identified and crossed during expansive learning in the CL interventions.

Our data analysis proceeded in four steps. First, we defined the activity systems and their elements in each organization. Second, we identified discourse concerning boundaries, manifested in talk about disturbances between activities or actors. Third, we identified discourse in which attempts were made to cross the identified boundaries. Fourth, we identified expansive learning actions across the meeting data. Finally, we brought the analyses together and presented the findings in one coherent narrative for each case.

Results

Our findings show that, regardless of the context, organizational boundaries acted as enablers of change in expansive learning. In all three cases, attempts to cross boundaries led to the creation of a new activity model for carrying out the organizations' core activities. The activity models enabled boundary crossing in multiple ways. In Case 1, boundaries were crossed both within the teachers' activity system and across school leadership hierarchies (Figure 1). In Case 2, boundaries were crossed between different medical professional groups and the multiple clinics (Figure 2). In Case 3, boundaries were crossed between organizations with different aims and working cultures, and their co-managed entrepreneurship hub, a partially shared object of activity (Figure 3).

Conclusions

In the CLs, boundaries were identified both between and within activity systems. When collaboratively analyzed by practitioners, boundaries proved to be enablers of expansive learning and change. Boundary expressions found in our data were connected to talk about disturbances of the

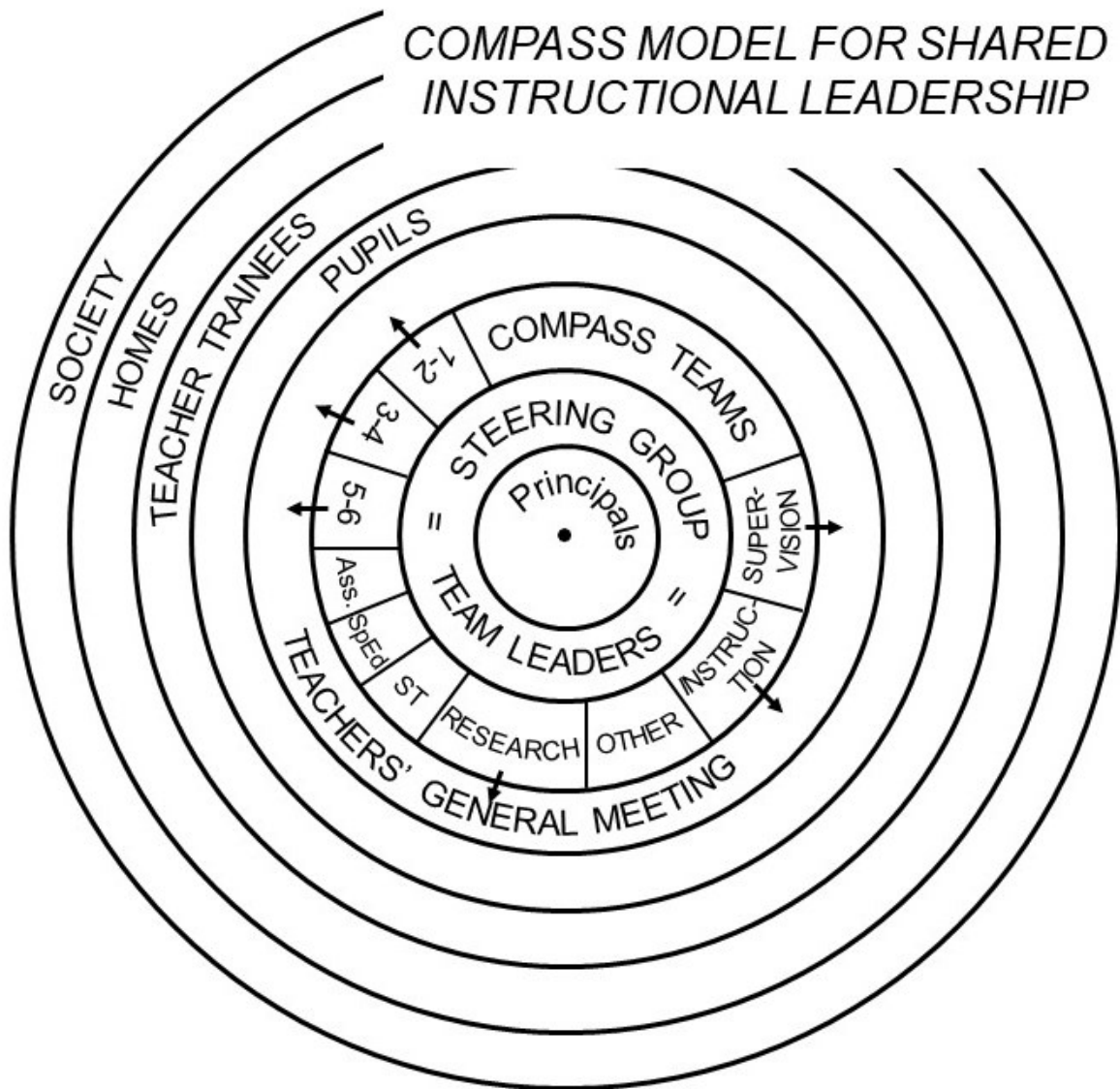
activities and the collaborative enquiry into systemic contradictions underlying them. By envisioning new ways of working, manifested in the co-created activity models, the participants forged new mediational tools for negotiating across the boundaries, as well as bridging and crossing them, enabling organizational learning and renewal.

There is growing need for research and development efforts concerning boundary crossing and learning among multiple organizations, experts and activity systems (Kerosuo & Toivianen, 2011; Toikka, Miettinen & Tuunainen, 2016; Sannino, 2020). Our results illustrate the potential of CL for renewing social practices and promoting inclusiveness in work development efforts by helping practitioners create new ways to interact around and across organizational boundaries.

How interaction with the participants is planned

To further expand CHAT discussion on boundaries we will engage session participants to address future prospects of the CL method, especially in terms of inclusivity and power, such as researcher roles, implicit practitioner hierarchies and promoting multivoicedness and social interaction.

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Compass model

Lasten pkl:n vastaanotot toiminnallisena mallina 2016

1. viikko

	MA	TI	KE	TO	PE
1	sas L iso	sas L iso	sas L iso	sas L iso	sas L iso
2	sas L iso	sas L iso	sas L iso	sas L iso	sas L iso
3	sas H iso	sas H iso	sas H iso	sas H iso	sas H iso
4	sam H	sam H	sam H	sam H	sam H
5	astm L	astm L	astm L	astm L	astm L
6	astm H iso	astm H iso	astm H iso	astm H iso	astm H iso
7	astm H	astm H	astm H	astm H	astm H
8	inf L		reu L iso	reu L iso	reu L
9	inf H	reu L iso	reu L iso	reu L iso	reu L
10	reu L iso	reu L iso	reu H	reu H	dia L
11	reu L iso	reu H	reu H	reu H	dia L
12	reu H	reu H	dia L	dia L	dia H
13	reu H	dia L	dia L	dia L	dia H
14	dia L	dia L	dia H	dia H	dia H
15	dia L	dia H	dia H	dia H	ope ap
16	dia H	dia H	dia H	dia H	ope ap
17	dia H	dia H	dia H	dia H	ope ap
18	dia H	dia H	endo L	ope ap	ope ap
19	dia H	endo L	endo L	ope ap	sl
20	hali L+H	endo L	endo L	ope ap	sl
21	ope ap	endo H	endo H	ope ap	kir
22	ope ap	endo H	endo H	kir	kir
23	ope ap	ope ap	mun L	kir	kir
24	ope ap	ope ap	mun H	kir	
25	kir	ope ap	ope ap	kir	
26	kir	ope ap	ope ap		
27	kir	meta L	ope ap		
28		kir	ope ap		
29		kir	kir		

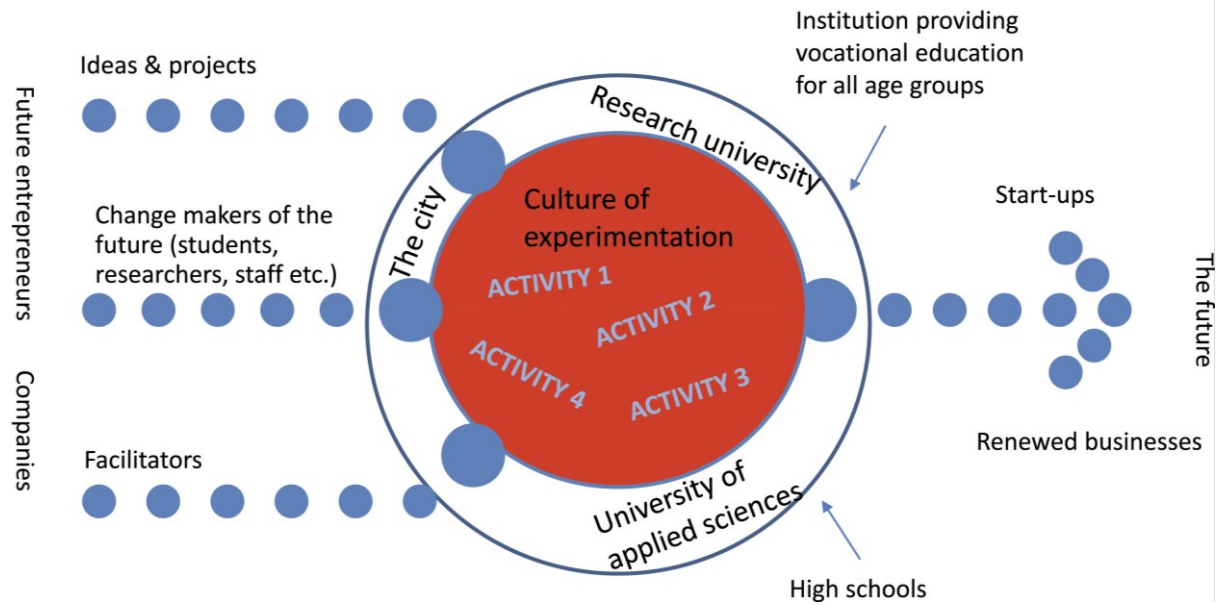
2.viikko

	MA	TI	KE	TO	PE
	sas L iso	sas L iso	sas L iso	sas L iso	sas L iso
	sas H iso	sas H iso	sas H iso	sas H iso	sas H iso
	astm L	astm L	astm L	astm L	astm L
	astm H iso	astm H iso	astm H iso	astm H iso	astm H iso
	astm H	astm H	astm H	astm H	astm H
	inf L	sam H	reu L	sam H	reu L
	inf H	reu L	reu L	reu L	reu H
	reu L	reu L	reu H	reu L	dia L
	reu L	reu H	reu H	reu H	dia L
	reu H	reu H	dia L	reu H	dia H
	reu H	dia L	dia L	dia L	dia H
	dia L	dia L	dia H	dia L	dia H
	dia L	dia H	dia H	dia H	ope ap
	dia H	dia H	dia H	dia H	ope ap
	dia H	dia H	dia H	dia H	ope ap
	dia H	dia H	dia H	dia H	ope ap
	dia H	endo L	endo L	ope ap	sl
	hali L+H	endo L	endo L	ope ap	sl h
	ope ap	endo H	endo H	ope ap	kir
	ope ap	endo H	endo H	ope ap	kir
	ope ap	ope ap	mun L	metaL ap	kir
	ope ap	ope ap	mun H	metaH ap	sam H
	kir	ope ap	ope ap	endoL ip	
	kir	ope ap	ope ap	endoh ip	
	kir	meta L	ope ap	kir	
	samH	kir	ope ap	kir	
		kir	kir	kir	
		kir	kir	kir	
			kir		
			kir		

	kir								
	kir	kir					kir		
		kir	kir					samH	
Kipsi	Kipsi	Kipsi	Kipsi	Kipsi	Kipsi	Kipsi	Kipsi	Kipsi	Kipsi
Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici	Urodynamici

children's and adolescents' care unit in a hospital's activity map

CO-CREATION PLATFORM FOR ENTREPRENEURSHIP AND BUSINESS DEVELOPMENT



Entrepreneurship hub's new concept model



243 Gonzalez Rey's Theory of Subjectivity in working with men who commit violence against their partner.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Subjectivity constructive-interpretative methodology male violence men who engage in violence towards their partners

SHORT ABSTRACT

This work emphasizes the absence of a complete integration of the gender perspective within cultural-historical psychology. Drawing on Abya-Yala's feminist critiques, there's a shared epistemic critique of Western scientific modernity, particularly challenging universal categories. The qualitative epistemological critique is crucial, aiming to understand the complexity of human beings within specific contexts.

Regarding violence by men against their partners, historical attempts to address it are criticized for being reductionist. These reductionist approaches are insufficient for comprehensive intervention and understanding the problem. A call is made to move beyond abstract masculinity, emphasizing the need to conceptualize masculinity based on social and individual subjective configurations in specific group situations.

The methodology involves an in-depth examination of Fernando González Rey's theory of subjectivity and qualitative epistemology, applying it to a five-year engagement in programs for men engaged in gender-based violence. The qualitative epistemological framework guides the development of local indicators for praxis. The review of work within these programs highlights the use of Bronfenbrenner's ecological model and emphasizes an interdisciplinary, transdisciplinary approach. Theoretical and practical findings stress the importance of the constructive-interpretative methodology, offering tools for qualitative advancement. Subjectivity is seen as developing within cultural practices, irreducible to individual representations. The narrative of men who commit violence is viewed as an intricate interplay of symbolic-emotional processes within specific subjective configurations. The dialogic work within groups aims to qualitatively deploy subjectivity, unravelling the interweaving of subjective configurations at individual and social levels underlying subjective senses legitimizing gender violence.

EXTENDED SUMMARY

Introduction

The gender perspective has not yet completely landed in the field of cultural-historical psychology. This is a striking fact. Its epistemic critique of Western scientific modernity is close to Abya-Yala's feminisms critique. The resistance to dismissing subjectivity in the production of knowledge shares a

structural analogy with local Latin American and feminist perspectives on embodied knowledge. The body and the singularity is relevant for them in scientific production and research. They also coincide in questioning universal categories through bridges and contrasts between local knowledge and the naturalized universal biopolitical concepts of modernity.

The qualitative epistemological critique of scientific reductionisms from the paradigms of complexity is paramount for this work. The objective is to comprehend the human being within the concrete context of their social, community, and familial environment, and their history as a fundamental complex analysis unit.

Theoretical context

Qualitative epistemology is inseparable from the Theory of Subjectivity from a cultural-historical approach. Regarding the specific problem of men who commit violence against their partners, historically, there have been reductionist biopolitical attempts to address it. Either from the social perspective as Duluth model, or from the psychological perspective that attribute aggressiveness to individual or collective determinations, or even from punitive pathologizing perspectives that make the violent man a pathological exacerbation of the “natural” aggressiveness of the male in the various species.

Problem

From our work perspective, we consider reductionist approaches insufficient, both to understand the problem and, more crucially, to intervene in a comprehensive manner to protect survivors of gender-based abuse. Working with men, is necessary to go beyond abstract masculinity and its associated ideas, and to conceptualize masculinity in concrete context, based on the social and individual subjective configurations that come into play in the specific situation of the group. Otherwise, it remains a philosophical exercise, a new “system of masculinity” without any grounding in the reality of situations and behaviors that legitimize the subjective senses of what the group and individuals consider as “normal”. For this, a gender perspective that traverses the work is crucial.

Methodology

A comprehensive examination is undertaken to explore the theory of subjectivity and qualitative epistemology proposed by Fernando González Rey through an in-depth bibliographic review. This analysis aims to evaluate the practical applicability of these concepts in understanding, explaining, and intervening, particularly within the context of a five-year involvement in support programs for men engaged in gender-based violence. Building upon the methodological framework of qualitative epistemology, we proceed to develop local indicators crucial for concrete praxis. The examination of work with men who perpetrate violence is conducted based on documents collaboratively generated by a significant number of Programs developed in the Province of Buenos Aires during the years 2022 and 2023, within clinical seminars coordinated by the Ministry of Women.

Theoretical and practical findings

The review of work within the devices reveals a widespread utilization of Bronfenbrenner's ecological model to comprehend the complexity of determinants and design intervention strategies. This approach is not only a common practice in many settings but is also characterized by its interdisciplinary nature, emphasizing a move towards transdisciplinarity.

Additionally, the constructive-interpretative methodology can offer theoretical and practical tools that contribute to a qualitative advancement, conceptualizing therapeutic work as action research. Key categories, such as “subjective configurations” and “subjective senses”, provide valuable

instruments for analyzing and developing indicators within the complex context. These tools guide dialogic constructive-interpretative efforts towards transforming the living conditions that participants themselves perceive as “normal”.

Discussion and Conclusions

Subjectivity develops in the cultural practices on which social life is organized, but it is irreducible to individual representations and beliefs. Reductionist concepts such as “social representation” or “natural aggressiveness” remain halfway in the explanation of the multiple conditions for the violent behaviors of the participants.

Each man who exercises violence does so by assigning “subjective senses” to his actions and their consequences, generating coherence through them in the construction of the “narrative” of his life. The “sense” in this context cannot be simplified merely as a language effect; instead, it represents an intricate interplay of symbolic-emotional processes within specific “subjective configurations” (social space). The “subjective sense” is the synthesis of a story produced within the diversity of sensitive elements of a present (the program group). The constructive-interpretive methodology based on the group dialogic relationship allows us to unravel the interweaving of various subjective configurations in order to make them present (conscious) and liable to be intervened. This group dynamic allows for a qualitative deployment of subjectivity. The dialogic work conducted within the groups aims, utilizing the constructed indicators, to highlight and address the interweaving of “subjective configurations”, both at the individual and social levels, that underlie the “subjective senses” legitimizing and shaping gender violence.

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246 Imagin/manag/ing the future: for promoting sustainable organizational conditions

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Presentation: Symposium (90 minutes)

Theme: Imagining future worlds

Keywords: organizational imagination sustainability transformative processes

SHORT ABSTRACT

The symposium addresses the need to generate new material and immaterial conditions dealing with the challenges solicited by the emergent and dramatic socio-historical-organizational scenario.

Specifically, the managerial field has become a crucial and critical object, both as a crossroad of plural organizational dimensions and as a knot with plural and implicit meaning (Mintzberg, 2009; Gosling and Mintzberg, 2003), requiring new approaches in conceiving and applying leadership, change processes, professional and organizational agency, generation of collective values (Alvesson, 2013; Brewer, 2013; Delbridge, 2014), looking forward the future.

The papers presented in the symposium convey experiences of organizational imagination (Cunliffe, 2022) focused on processes of knowledge generation conceived as situated, engaged, responsive, relational, sensorial, reflexive, effective, actionable, beautiful and good (kalos kai agathos) (Scaratti & Ivaldi, 2021).

Dealing with the leadership regenerative dynamic in a financial sector; supporting organizational processes in participative health care intervention; adopting a dystopic/utopic stance with HRM involved in promoting sustainable organizational innovation: all these issues, highlighted by the papers presented, encompass stimuli, reflexions and empirical support for a reviewed interpretation of managerial and organizational practices oriented to overcome critical situations.

At stake is the adoption of a diffractive lens, able to highlight the plural levels (institutional, social, practical, organizational) embedded and to go in depth in the implications related to the imagination of innovative ways for a sustainable future in the organizational contexts.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This paper will focus on a pilot project carried out in the financial sector in Denmark and Greenland inspired by the paradigm of regenerative leading (Wahl 2016; Hutchins 2022; Hutchins & Storm 2022). The project was organized in collaboration between the Department of Culture and Learning at Aalborg University and The Educational Center of the Financial Sector in Denmark and was based on action research. The project had a duration of five months and was the first of its kind in a Nordic context and possibly also in a wider global context. It carried the title, "Regenerative leadership in the

financial sector" and involved 11 managers from five different banks in Denmark and Greenland, 2 managers from the Educational Centre of the Financial Sector and, the author of the paper, who is working as senior researcher at Aalborg University.

To develop more sustainable ways of leading and organizing, the first steps were taken in experimenting with the notion of *regenerative leadership* (Wahl 2016; Hutchins 2022; Hutchins & Storm 2022), which basically draws on a systemic mindset concerned about mutual dependency, interconnectedness in and among eco-systems at both micro-, meso- and macro-level.

While taking in consideration that the financial sector neither in Denmark nor in Greenland has been working with regenerative leadership, the research question is how and whether action research can contribute effectively to leadership development in a more regenerative direction in the financial sector?

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Developing regenerative leadership in the financial sector

Background

The background of the project is a need for change at several levels. Today we experience a socio-ecological crisis at a global scale with complex challenges such as climate changes, pollution, lack of biodiversity, poverty, social inequality, conflicts, wars etc. In addition, more and more people are suffering from stress and lack of motivation in relation to their daily work. Phenomena such as "quiet quitting", "bare minimum Mondays", stress and burn-out are becoming more and more widespread. Therefore, there is a need for change in relation to the ways in which we practice leadership and the ways in which we organize our society, our organizations, and our ways of working, producing, consuming, and living etc.

The working environment in the financial sector is usually characterized by a high speed and high demands of effectiveness controlled by advanced electronic systems for performance measurement. These systems produce a high level of productivity, but unfortunately, they also tend to create high levels of stress and anxiety. At the same time, the financial sector has a significant impact on the environment and society in general whereas the banks are channeling large cash flows across the globe. Seen in this perspective the banks and financial institutions have a significant impact and a responsibility in relation to our eco-social systems.

As an attempt to try out new ways of leading, in this project we've taken the first steps in experimenting with the notion of *regenerative leadership* (Wahl 2016; Hutchins 2022; Hutchins & Storm 2022), which basically draws on a systemic oriented mindset both at a micro-, meso- and macro-level, which focuses on patterns and interrelatedness instead of separating the world into entities. Regenerative leadership advocates for a transformation of our business models, economic systems, technologies, culture, consumption patterns, production methods, leadership and, our ways of organizing our society and organizations.

Aims

The aim of the paper is to share and discuss the project, the approach and, the findings from the project in order to contribute with knowledge about new ways to develop more regenerative and sustainable forms of leadership in the financial sector. In relation to this, the paper will also unfold and discuss the concept of regenerative leadership.

The paper will go into more detail about the managers' development process and present examples from concrete actions for change in their organizational practice. In this context, it'll also be explained more in detail, which kind of opportunities and challenges that have been emerging during the process.

Method

The overall research method is based on action research, which is characterized by being process oriented and developing through procedural learning loops, where the participants develop new initiatives for change and successively improve these initiatives in accordance with the response and feedback from the surroundings. Action research is based on the idea of creating learning, experience, change and knowledge *together with* the participants. Rather than trying to mirror and describe the world, action research aims to change the world (Gergen 2014).

In this action research project empirical material was generated through qualitative interviews with reflecting team, video logs, logbook notes, drawings, planks etc. elaborated by the participants/co-researchers during the process.

Results

In general, the outcomes of the project have been very positive. 10 out of the 12 participating co-researchers have succeed in creating significant changes in their daily leadership practice and two of the participants/co-researchers (managers at top levels) have initiated working on the incorporation of sustainability and regenerative thinking at a strategic level. Several of the participants have become more aware of their role and the importance of being proactive in their work with ESG, which is about the reporting and being transparent in relation to environmental, social and governance (ESG) impacts in accordance with the EU regulations. Among the findings is that profound regenerative organizational change is very dependent on the moral support from the upper management levels as well as from the surrounding employees to succeed. However, the mayor part of the co-researchers has succeeded in creating important changes, both in relation to their own work-life balance, the working conditions among the employees at department level and, in relation to the surrounding world (environmental sustainability and social sustainability). In the paper, the results of the project will be examined and unfolded more in details.

Conclusions

The pilot project has shown that it is possible to create change and transformation in the financial sector through action research.

Interactions with the participants

Action research is fundamentally based on interaction and involvement of the participants often named co-researchers. This is the DNA of action research as an inquiry for learning, transformation and knowledge production. All the experiments in the project were based on the wishes and initiatives defined by the participants themselves.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

This research paper explores organizational learning for social organizational sustainability and development through action research. The study draws from a larger action research project in a public institution specialized in supporting citizens with significant deaf-blindness and hearing loss. In the paper, we argue that, in a late modern world characterized by complexity and wicked problems, we must rethink and reconceptualize leadership and facilitate collaborative organizational learning

spaces drawing on the notions of witness-thinking and thinking-from-within (Shotter, 2005, 2010, 2012) to create more inclusive institutions. Inspired by John Shotter, we argue that the building of a collaborative action capacity makes it possible to jointly create development in organizations (Shotter, 2013). This will be explored in the perspective of action research focusing on social sustainability, inclusiveness, welfare and organizational learning. Social sustainability can be understood in an emergent process perspective with attention paid to the creation of communities based on well-being, strong relationships, belonging and 'liveability' (Dupret and Langergaard, 2020, p. 233). We argue that sustainable organizational learning and development must engage both employees and managers in dialogic, critical and imaginative collaborative reflexive (Cunliffe, 2002, 2022) and relational-responsive learning processes, which attempt to develop knowledge, professionalism, competences, and new practices in the organization. Learning can be considered as a social activity linked to experience, action, and the context (Örtenblad, 2018, p. 154). When learning is framed as a social activity, a basis is created for organizational learning from-within the organization in a social sustainable, critical reflective action-oriented and emergent process perspective.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Creating Social Sustainable Organizational Learning through Action Research: A Danish Case Study from the public sector

The paper presents concrete examples of how action research can support organizational learning, social sustainable change, inclusiveness, diversity and competency development in a public organization. It also highlights how action research can enhance relational coordination and collaboration across units and several professional groups in a complex organization with more than 300 employees.

Background

In the context of what is often called a VUCA world (volatility, uncertainty, complexity, ambiguity) (Barber, 1992; Whiteman 1998; Sarkar, 2016) characterized by rapid and unpredictable changes, organizations need to adapt to complex and wicked problems (Churchman, 1967; Rittel and Webber 1973; Grint, 2011; Turnbull & Hoppe 2019). Traditional rational and linear top-down approaches to organizational change often fail, which emphasizes the need for alternative approaches to learning, where both managers and employees become actively engaged in the learning process.

Aim

The paper aims to explore how action research can foster organizational learning, social sustainable development, inclusiveness, diversity and change in response to complex organizational challenges. It emphasizes a bottom-up and relational perspective on learning as a collaborative practice.

Methods

The research project presented in this paper draws on an action research design, which involves managers, employees, internal consultants, and university researchers. The approach encourages active participation, dialogue, and trial actions based on the participants' wishes for learning and development.

During the project, the participating managers and employees collaborated on common and individual development goals and developed a series of new initiatives in relation to citizens with deaf blindness and hearing loss. Two internal consultants and two university researchers have been facilitating the dialogic processes including the use of reflecting teams, witnessing teams, and future

labs for the imagination of the future and finding new solutions to complex work-related challenges. The data material is based on qualitative methods: audio recordings, reflexive diaries, qualitative interviews, posters, photos, and field notes.

Results

The study is based on a 5-year project with approximately 70 participants across four sub-projects within a public institution specialized in helping citizens suffering from deaf-blindness and hearing-loss. Through dialogic processes, and experimental actions, the co-researchers have been developing new knowledge and more sustainable solutions to organizational challenges on a collaborative basis. The findings from the project confirm the fruitfulness of working with action research as a collaborative approach to organizational learning.

Conclusion

The findings illustrate that the work with social sustainable organizational learning through action research, rooted in a relational, dialogic, and emergent perspective, can address important organizational challenges. The project has shown that by engaging employees and managers in co-creating change through participatory, dialogic, and co-creative learning processes, organizations can be more capable of navigating and thriving in a VUCA world.

Interactions Between Participants

The research project emphasizes the importance of *witness-thinking*, relational responsiveness and working from multiple perspectives. Through action research, the participants/co-researchers have engaged actively in dialogic processes and collaborative actions. These collaborative activities have fostered a sense of ownership, empowerment, and shared learning within the organization. The examples of participants' journey as co-researchers illustrate how the participants/co-researchers have been actively contributing to the collective learning process *from within* the organization itself.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

This paper is focused on the analysis and collective rethinking of the role of the HR manager inside a complex and turbulent scenario. The key element of this work is the concept of future-present (Pellegrino, 2013) which is what could happen which circulates in the present and in respect to which the possibilities of action take shape.

The current scenario is characterized by a weakening of both the collective/institutional capacity to define and share what should be and the individual capacity to subjectively identify the deficiencies of the present and place them concerning an authentic subjective desire (Kaes, 2012).

The organizational life is often stuck in a pervasive present that is the only language that defines the intrapsychic (Bollas, 2001; Binswanger, 2001). Both the organizations and subjects construct their professional life inside a short-term temporal experience. In this regard the metapsychic guarantors (Kaes, 2005), the spaces in which the individual used to develop his/her ability to symbolize, have been disappearing. It becomes important for organizational subjects to reconnect themselves to the future-present to recover the idea that the present is strictly connected to a collective symbolized future.

The paper presents a work realized with a group of HR managers in Italy who, using the methodology of future lab collectively rethink their role to make the organizations anthropological places (Augé, 2018) in which subjects can create individual and collective meanings for their work and experiences.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:**(I) managing the future for reconstructing the HR manager role****Background**

The framework that underpins the paper refers both to the theoretical critical management study approach and the concrete and contextualized experiences of innovative trajectories through the exercise of an organizational imagination. Borrowed from Stuart Mill's work (sociological imagination), the concept conveys the possibility of intertwining personal, professional, organizational, and institutional stances, opening new portals of view in conceiving and developing concrete, sustainable, and actionable processes of organizational transformation.

Aim

The aim is to create a community of practice and promote conditions to rethink the role of HR managers by collectively reflecting on criticalities and resources. As known, a community of practice setting requires convergent objectives, shared languages, and conditions of mutual engagement, asking participants to provide contextualized thick descriptions related to their lived experience. In particular, the goal is to support HR managers in the identification of a symbolical future by using stories for rethinking the present inside organizations that are resistant to: promote reflexivity and learning from experience; Help subjects to symbolize and create meaning about their individual and collective experience; Consider subjects and relationships not only as instruments/means to reach productive objectives.

Methods

The method used is Future Lab, a Methodology introduced by Robert Jungk (1987) characterized by three phases: *Criticism or catharsis*: where the focus is the identification of the problems that characterize the present and through these reconceive distortions of the social order (collectively rename the everyday evil, sometimes unspeakable, producing a first vision of the future); *Utopia or vision*: elaboration of future visions emancipated from such distortions (a vision of the future as a different everyday life); *Project*: indication of practices/initiatives that can guide the community towards that future (transition exercise – identification of social innovations for influencing structural resistances to change).

Results

The study involves 12 HR managers of different small and medium enterprises in Italy: the intention was to deal with heterogeneous contexts, seeking transversal features and dimensions at stake when HRM seeks for transformative and innovative trajectories related to the criticalities they have to cope with. Through the use of the methodology of future lab we collected different dystopic and utopian stories that helped managers to promote dialogic processes and collective thinking. From this, participants collaboratively developed new knowledge and creative solutions for reconfiguring their role inside their organization.

Conclusion

The findings illustrate the importance for organizations to reintegrate the strong connection between present and future (in the form of future-present) through promoting social collective discourses and the capacity to create shared meanings. The analyzed experiences highlight conditions for supporting and developing transformative organizational processes.

Interactions Between Participants

The study emphasizes the importance of: collective stories (that give rise to an imaginative exercise that goes from representations about daily problems/issues/conflicts to visions of possible futures); social collective discourse (the dialogue based on collective stories related to new social order); political setting (oriented to the transformation that is the passage from the understanding and facing with a painful everyday life (“what would happen if we go on like this?”) to a process of emancipation from current life (“what would happen if we change those aspects?”))

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

The contribution aims to investigate organizational and environmental conditions, presenting specific levers and capabilities for building more socially sustainable organizations. The study takes the form of an action research project, involving collaboration between the university and various public entities, to explore the phenomenon of family caregiving within the perspective of transforming local welfare. Through the collaboration of stakeholders, there is an opportunity for co-constructing knowledge aimed at new paths of action through shared cycles of meaning-making and understanding (Cassell & Johnson, 2006). The joint collaboration of researchers and organizational actors is made possible through the creation of communities of inquiry that collectively set the research agenda and collect and interpret data emerging from the context. From this, an action research process is necessarily multi-stakeholder, implying complex processes in which different actors come together to find a common approach to an issue that concerns them all (Roloff, 2008). A multi-stakeholder perspective is necessary to involve and manage different stakeholders in building a socially sustainable organization (Chazal, 2010; Laszlo et al., 2010; Lifvergren et al., 2009; Roloff, 2008). In this sense, we advocate for a process-oriented (Ehnert and Harry, 2012) and procedural view (Boström, 2012) of social sustainability, as it requires activating and guiding inherently complex multi-stakeholder meetings and decision-making processes. The contribution demonstrates how action research can support the production of shared and reflective knowledge aimed at shaping new practices within a public organization. It also emphasizes how action research enables the configuration of multi-stakeholder projects contributing to social sustainability.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Action Research Practices and Support for Organizational Processes within the Project "Supporting Caregivers. Taking Care of Those Who Care"

Background

In an era marked by a progressive breakdown of local welfare, public organizations struggle to position themselves as reference points for citizens in the territory. For this reason, they must be able to create multi-stakeholder projects, involving different entities on the territory and individuals as an integral part of the care system. In this way, multi-stakeholder processes can materialize in structured alliances, within which meaningful and collaborative exchanges are activated (Savage et al., 2004; O’Higgins, 2010) from a perspective of social sustainability. In this sense, social sustainability can be defined as an organization's commitment to the development and growth of internal and external stakeholders, to contribute to equity, well-being, social cohesion, inclusion, learning opportunities, and self-development (Konrad et al., 2006).

Aim

The contribution aims to demonstrate how action research, designed and built in collaboration with public entities and individuals present in the territory, can promote social sustainability. It highlights how the joint collaboration of researchers, organizational actors, and individuals can be a valid means of rethinking organizational practices that struggle to meet the needs of citizens. In the co-construction of the action research project, dialogue becomes a central element of the process (Bartunek, 2004; Bate & Robert, 2007; Maclean & Macintosh, 2002), focusing on generating alternative organizational languages that facilitate new landscapes and action horizons. Thus, researchers and practitioners challenge established discourses (Shotter, 2010) and what is taken for granted in organizational policies and practices, building alternative dialogues to generate new possibilities for action (Cunliffe, 2001).

Methods

The research is an action research project that activates policies involving interested stakeholders and intra- and inter-organizational processes. To do this, a steering committee has been created, serving as a temporary organizational hub and an institutional observatory for the collection of territorial data. In this way, an attempt has been made to respond to the need for promoting meaningful learning trajectories among stakeholders, both in terms of professional and organizational dimensions, as well as regarding elements of interest, power, and relationships present in the context.

Results

The study is based on a 2-year project related to the support of family caregivers, involving collaboration between the CREIAMO research unit of the Department of Human and Social Sciences at the University of Bergamo, the Agency for Health Protection (ATS) of Bergamo, Territorial Areas, Fondazione Comunità Bergamasca, ASST Papa Giovanni XXIII, ASST Bergamo Est, and ASST Bergamo Ovest. Through dialogic and reflective processes aimed at building experimental actions, participants collaboratively develop new knowledge and sustainable solutions to organizational challenges.

Conclusion

The results emphasize that building socially sustainable organizations requires the creation of participatory environments for action and reflection to address multi-stakeholder processes and move towards a more socially sustainable organization. Action research lays the groundwork for learning within practice, allowing participants to reflect on their actions and roles in the project development process. In this sense, action research enables the generation of reflexivity (Cunliffe, 2022) oriented toward understanding the roles that researchers and practitioners play in shaping organizational realities. This shift from reflective to action-oriented research establishes the foundation for individual and organizational development. The value of the contribution lies in constructing a framework for both research and practical purposes to guide the organizational journey toward social sustainability through action research, keeping in mind that such trajectories involve processes of progressive accomplishment dealing with uncertain and unforeseen events.

Interactions Between Participants

The contribution highlights the need for constant interaction between researchers, public entities, and individuals belonging to the same territory to build shared projects for sustainable development. Through action research, social actors come together in working groups where dialogic processes and

reflective actions are activated. Joint collaboration facilitates questioning organizational policies and practices, offering the opportunity to generate new landscapes and action horizons.

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248 Theoretical thinking and personality development in formal schooling

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: theoretical thinking developmental teaching and learning personality development

SHORT ABSTRACT

The first part and main focus is to introduce the idea of theoretical thinking concretely by explaining and illustrating its meaning through a concrete example (a theoretical model of how a battery works). The main purpose of the example (which does not presuppose any prior knowledge) is to communicate a deeper understanding of the idea of theoretical thinking in general, but expressed concretely through this particular example. Similarities and differences between a theoretical explanation and an empirical description are also highlighted through this example, after which a general, concrete principle is introduced that should give a key insight about how to analyse content to develop a concrete theoretical model for any specific knowledge area. The presentation is motivated by an assumption that it is difficult to appreciate the significance of theoretical thinking, if one does not have a concrete idea of the essential features of a theoretical model in a specific content area, and difficult to pursue research in this area without this understanding. The second, briefer part of the presentation is to relate the idea of theoretical thinking to personality development in formal schooling. This discussion, which presupposes an adequate understanding of the general idea of theoretical thinking, will be illustrated with an example drawn from the content area of electromagnetism, where other examples can be generated in response to audience questions.

EXTENDED SUMMARY

Background

The short abstract was written with the presupposition that the audience is familiar with the ideas of developmental teaching and learning in general, as well as the particular version initiated originally by El'konin and Davydov in the late 1950s. The idea of theoretical thinking in relation to education was introduced and elaborated by Davydov in his 1972 book, which also differentiated theoretical thinking from empirical thinking or empirical knowledge.

As far as I know, only a few elaborated examples of subject-matter analysis are readily available in English (Davydov's analyses of the concept of *number* and *fraction*, Aidarova's analysis of Russian grammar for beginning mother tongue instruction, and a few illustrations of initial primary relations are given in Davydov's, 1986, book.) Also, as far as I know, there is no guide (e.g., textbook, handbook, guidebook) that provides advice and guidance about how to develop a model in a new content area.

Personal experience has shown that while persons are able to grasp the general spirit of the idea of theoretical thinking, they often have difficulty knowing how to approach the development of a

theoretical model in a concrete case. Alternatively, persons who are not familiar with the approach are sometimes doubtful that it is possible to work with theoretical models in all content areas. The situation described in the previous three paragraphs is the background that motivates the paper, which is both an attempt to communicate an essential insight for understanding the meaning of theoretical model, and an experiment to test the hypothesis that inadequate understanding of the meaning of theoretical model serves to block progress in this research area.

Aims

The aims are expressed fully in the short abstract:

to introduce the idea of theoretical thinking, but doing it concretely through an actual example, so that it is possible to show what is meant, rather than to talk about the idea abstractly;
to give what I believe to be a critical insight for better appreciating the meaning of the concept, namely the need to identify the system of interactive relations that underlies the appearance of the object (situation, event, phenomenon) being analysed, where again the aim is to illustrate this with a concrete case, and contrast it with an empirical description to highlight subtle differences; and
to highlight how theoretical thinking can be understood as contributing to personality development, where some specific kinds of thinking may even be understood as relevant for development to the next age period. An example from electromagnetism, the concept of *field*, is used to illustrate this point.

Methods and Results

In general terms, this presentation builds on a theoretical understanding of the development teaching and learning tradition as developed by El'konin and Davydov, which was motivated by Vygotsky's general theoretical perspective about development. This provides the orienting framework, where the point of the paper is to develop concrete examples to exemplify aspects of this theoretical tradition which are believed to be insufficiently and inadequately appreciated. More concretely, the "method" of this paper involves theoretical analysis and rising to the concrete, where there is a focus on the idea of theoretical thinking, where the rising to the concrete is to first make a theoretical analysis of the operation of a battery, and then use this concrete example as a way to rise to the concrete for illustrating the general idea of theoretical thinking. Similarly, this kind of concrete result can then be used to rise to the concrete for illustrating the relation to theoretical thinking to personality development.

Conclusions

The paper is motivated by the assumptions that a particular kind of understanding of theoretical thinking is a necessary prerequisite for (a) being able to work concretely with the idea, and (b) appreciating the significance of the idea for educational practice. Feedback from researchers in this area will be necessary to evaluate the validity of these assumptions.

How interaction with the participants is planned?

Because a concrete example is presented, it will be possible, as presenter, to ask the audience if they have understood the point about theoretical thinking, or have questions about clarifying the meaning. Given that the paper is motivated by the assumption that this idea is not adequately understood, it seems necessary to focus on this issue as a prerequisite for discussing implications and consequences for research and practice.

250 How can we promote research in developmental teaching and learning?

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Presentation: Discussion table (45 minutes)

Theme: Meaningful education

Keywords: developmental teaching and learning research professional development

SHORT ABSTRACT

The focus of the discussion for this session is expressed in the session title. The meaning of developmental teaching is broad, with a particular meaning developed especially by Davydov and colleagues, with a focus on theoretical thinking, but other variations also exist. Assumptions that motivate this discussion table are (a) there is interest among researchers to understand this tradition better, (b) there are several different pockets of research in different countries around the world, but with little or no active dialogue among researchers with these interests. The purpose of the discussion table is explore interests and possibilities for developing a better infrastructure for advancing research in this area.

EXTENDED SUMMARY

Background

The idea of developmental teaching and learning is general, where several different versions have developed over the past 60 years. Especially in the 1970s and 1980s, a comprehensive set of teaching materials were developed for the primary school level in the Soviet Union. In the late 1980s, some attention to this work appeared in other countries outside of the Soviet Union, especially in Northern Europe. In recent decades there have been publications in Brazil, and an effort in the United States to translate and promote the primary school mathematics curriculum.

At the same time, it is difficult, maybe even impossible, to find any kind of international cooperation and communication about this kind of research approach. It is difficult to know how to diagnose or explain this state of affairs. Is there a tension between developing educational practice in relation to a national educational system, and therefore no need or possibility to communicate with researchers in other countries? Is there a lack of a common textbook or handbook that gives a common framework for communication? Is there no need for communication about this research area? At the 2017 ISCAR Congress, a roundtable was held among persons who were interested in this perspective and a mailing list was assembled, but no further communication continued after that meeting.

Aims

The purpose of the discussion table is to engage with the issues raised in the **Background**.

The general aim is to see if it is possible to develop some structures that could improve and support research that is oriented to developmental teaching and learning (as broadly understood). The double aim of the discussion table is to reflect about the interests and needs of researchers who want to work with developing teaching approaches in developmental traditions, particularly approaches

that are inspired by the theoretical perspective found from Davydov, but which has been developed subsequently by other researchers (e.g., Hedegaard, Chudinova).

One of the aims of the discussion table is to explore with the participants about their perceptions of the state of research community for developmental teaching and learning, along with some analysis or diagnosis about the current state of affairs.

A second aim is to provide an opportunity for brainstorming about desirable improvements.

A third aim is to explore whether some kinds of individual and/or collective action can be organised to develop or improve the situation for research in this tradition.

The hope is that some kind of arrangements could be made to improve communication and dialogue among researchers who are interested to work generatively in this area. The point is to develop better conditions for researchers who are working (or want to work) within this theoretical perspective to develop actual examples of developmental teaching and learning, as opposed to simply describing and communicating about the idea in general terms. It is possible that it might involve workshops or summer courses, a section within ISCAR, an edited volume, etc.

How interaction with the participants is planned?

Start with a round where each person can explain their background or experience with developmental teaching and learning, why they have come to the discussion, and when relevant, what they hope they might get from participation.

After the first round, there would be an discussion in response to the first round.

The third round would start during final 10-15 minutes, which is devoted to discussing whether and what kinds of further activities should be attempted in light of the discussion in the first two rounds, together with some practical coordination or preparation for that continuation.

252 Conceptual Change and Education: The Neglected Potential of Developmental Teaching Approaches

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: El'konin-Davydov's developmental education Gal'perin's stage-by-stage method of formation of Instruction-induced conceptual change

SHORT ABSTRACT

Research on conceptual change (CC) has revealed that students face difficulties when learning that requires significant changes to their prior knowledge. Researchers have documented the challenges in education to promote CCs and concluded that conventional teaching does not facilitate these changes. However, while designing educational methods to address CC challenges is a central aim of CC research, it is an area of research that still requires refinement. I show that developmental teaching (DT) approaches, including El'konin-Davydov's developmental education and Gal'perin's method of stage-by-stage formation of mental actions and concepts, are promising for addressing CC challenges but are absent from CC research literature. I first review the CC challenges revealed in CC research, the way in which three CC research trends – framework theory, ontological theory, and knowledge-in-pieces theory – interpret them, and their educational recommendations to foster CC. Next, I present CC challenges and educational recommendations to foster CC from a DT perspective. I delineate convergences and divergences between the three CC research trends and DT research concerning both educational design and theories of CC. I conclude by suggesting articulations between DT research and CC research in general and the three CC research trends in particular.

EXTENDED SUMMARY

Research on conceptual change (CC) revealed that students face difficulties when learning that requires significant changes to their prior knowledge. Researchers have documented challenges in promoting CCs in education and concluded that conventional teaching does not facilitate these changes. Most research on CC challenges in education has focused on learning scientific knowledge, particularly counterintuitive concepts: from knowledge of physics, such as Newtonian mechanics or how gravity holds objects to the Earth, to biological knowledge, such as the theory of evolution or genetics. For example, it is often difficult to learn the Newtonian concept of force (i.e., the force of an object is equal to its mass multiplied by its acceleration) because it diverges from students' common assumption that thrown objects acquire or contain an internal force. However, CC problems apply to many types of knowledge, from mathematics to social sciences. Indeed, CC varies in nature and difficulty depending on many factors: the targeted knowledge, the student's prior knowledge, age, cognitive development, and their sociocultural, affective, or identity relationships with the new knowledge. Therefore, CC issues are among the most important in education and the learning

sciences, as they address the fundamental problems of knowledge acquisition, revision, and reorganization.

Designing educational methods to address CC challenges is a central aim of CC research, but it is an area of research that still requires refinement. I demonstrate that developmental teaching (DT) approaches, including El'konin-Davydov's developmental education and Gal'perin's method of stage-by-stage formation of mental actions and concepts, are promising for addressing CC challenges but are absent from CC research literature. CC issues are central in Vygotskian and DT theories and educational approaches. Indeed, DT approaches aim to develop theoretical thinking in every school subject, and CC-related issues are often central to this goal. However, few DT researchers referred to CC literature. This is the first paper to systematically address the connections between CC research and DT research and discuss possibilities of mutual enrichments between the two fields of research. The first section of the paper reviews the CC challenges revealed in CC research, the way in which three CC research trends – framework theory, ontological theory, and knowledge-in-pieces theory – interpret them, and their educational recommendations to foster CC. The second section presents DT approaches and how they address the CC challenges in education. I delineate (a) convergences and divergences between DT research and the three CC research trends and (b) specificities of DT approaches, both concerning theories of CC and educational recommendations to foster CC. I also provide examples of DT lessons on bodies of knowledge typically addressed in CC research: the Newtonian concept of force, mathematics, and the theory of evolution. This section concludes with a brief review of the evidence of the recurring positive learning outcomes of DT approaches. The paper concludes with suggestions for dialogues between CC research and DT research.

The results are the following. CC researchers could benefit from the type of epistemological and logical analysis of academic knowledge performed in DT research to better design education. They could also question their view of academic knowledge in light of DT researchers' characterization of academic knowledge as a set of core conceptual interrelations systematically interrelated. In turn, DT researchers could improve their educational design by paying attention to analyses in CC research of the types of prior knowledge that must be revised or built upon to facilitate understanding, avoid CC-related problems, and foster CCs. DT researchers could also question their view of preinstructional knowledge, which they call empirical knowledge and oppose to the theoretical knowledge proper to academic concepts, in light of key findings and debates in CC research.

At a more specific level, other productive articulations are possible between DT approaches and some of the CC trends. Some articulations are possible between DT approaches and framework theory approaches, as they share similar assumptions about the discrepancy between preinstructional knowledge and academic knowledge and similar corresponding educational recommendations. However, DT approaches could specifically enter into dialogue with knowledge-in-pieces theory concerning educational design. Indeed, despite disagreements on the nature of preinstructional knowledge, they share a focus on utilizing prior productive knowledge to scaffold learning and design education.

In conclusion, DT approaches deserve attention in CC research. However, DT approaches would also gain from improving their educational theories and approaches in light of CC research. Specifically, there are opportunities for productive articulations between DT approaches and knowledge-in-pieces theory.

Interaction with the participants would benefit from debating the strengths and weaknesses of DT regarding both educational theory and design, and the avenues for future research suggested in this paper.

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253 Using CHAT to Explain the Effectiveness of STEM Faculty Professional Development

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Professional development STEM Inclusiveness Dealing with inequality

SHORT ABSTRACT

This paper explores the effectiveness of AAC&U's professional development opportunities for STEM faculty using CHAT (Hummelbrunner & Williams, 2011) as an interrogative lens. Specifically, the aim of this study was to use the CHAT framework to understand what makes these professional development opportunities so impactful for participants. Our methodology comprised conceptual interpretation of the evaluative findings from three Institutes that were each held over two or five years (i.e., data from 11 events). These evaluative findings come from mixed-methods data collected through self-report surveys with both quantitative scores on measures of intended outcomes tailored to the events and qualitative, open-ended reflective items regarding participants' experiences. Additionally, we explored our own understanding of that data and our first-hand observations and experiences with the events using CHAT as a lens. Our results show that CHAT is a powerful framework for understanding how and why professional development opportunities are impactful for participants. Specifically, the propositions of CHAT, as put forth by Hummelbrunner and Williams (2011), offer a structure for interpreting evaluative and reflective data that yields a comprehensive array of aspects to consider as these opportunities are developed, implemented, and assessed. Our findings not only explain the success of these professional development opportunities, but also offer insights into how to effectively replicate them with additional groups of participants and/or new development opportunities.

EXTENDED SUMMARY

Background

In the US, the need for persons ready to engage in the scientific and technological workforce is growing faster than the pool of available qualified individuals (Mack, 2021). This has resulted in a focus on broadening participation in STEM, which is defined as increasing access to STEM education and careers beyond those historically served in the US. As part of this effort, various professional development opportunities for STEM faculty have been developed to prepare them to engage today's students. The American Association of Colleges and Universities (AAC&U) has offered professional development Institutes for STEM faculty in support of broadening participation in STEM for several years (Mack et al., 2015; Mack & Winter, 2015). In particular, this paper includes four years of the Teaching to Increase Diversity and Equity in STEM (TIDES) Institute, five years of the Knowledge

Exchange Institute, and two years of the Reframing Institutional Transformation to Include Non-Tenure Track STEM Faculty Institute.

Aims

The aim of this study was to use the CHAT framework to understand what makes these professional development opportunities so impactful for participants. Through this research, we sought to not only explain the success of these professional development opportunities, but also offer insights into how to effectively replicate them with additional groups of participants and/or new development opportunities.

Methods

We used a conceptual research methodology (Jaakkola, 2020; Mora et al., 2008) to qualitatively interpret the evaluative findings from three Institutes that were each held over two or five years (i.e., data from 11 events) through the lens provided by CHAT. Specifically, we used the CHAT framework as detailed in Hummelbrunner and Williams (2011) to interrogate and explain both event data and our own understanding of that data and our first-hand observations and experiences with the events. The evaluative findings come from mixed-methods data collected through self-report surveys with both quantitative scores on measures of intended outcomes tailored to the events and qualitative, open-ended reflective items regarding participants' experiences at the events. Open-ended reflective data from participants, as well as our own reflections through multiple phone calls, were qualitatively coded (Saldaña, 2009) using the CHAT framework and then reviewed to determine how effectiveness could be understood using the data and CHAT. Similarly, areas with the most growth, as measured through change scores on the self-report instruments or post-only reflective scores of perceived change, were interpreted through the lens of CHAT.

Results

Interrogating both evaluative data and our reflections through the lens provided by CHAT yielded many valuable insights into why these STEM faculty professional development opportunities were effective in meeting their stated objectives. While there is not enough space here to delineate them all, one key example is the need for intentionality when selecting participants, which corresponds to Proposition 2 of Hummelbrunner and Williams (2011). Even though all participants self-selected, and in many cases had to self-pay, to participate in these opportunities, their understanding of the need they were there to address varied based on their own backgrounds and experiences. Even when it appears that there is a shared understanding of the need, or at least a shared acceptance of the need to broaden participation in STEM, how this was defined and understood varied considerably. In turn, the information and tools needed to meet this need were extremely disparate based on the diversity of perceptions of the single "need." In fact, variations in understanding of the need related to variations in all other aspects of CHAT, including: the flow of/access to information (Prop 3); the types of tools needed/available and whether individuals had access and were ready to use them (Prop 4); how social, cultural, and organizational systems mediate how individuals can and do conduct activities (Prop 5); the ways in which disturbances and contradictions are harnessed for learning (Prop 6); and, the extent to which a "Cycle of Expansive Learning" (Hummelbrunner & Williams, 2011) is fostered. The full paper details how the data can be understood through each of the CHAT propositions, and the value that understanding has toward planning, implementing, and evaluating comparable learning opportunities.

Conclusions

Based on our findings, CHAT is a powerful tool to understand why the AAC&U STEM faculty professional development opportunities were effective. Further, these findings offer a template for what information to explore and how to interpret it during the development, implementation, and assessment of these opportunities.

Interactive Plan

At various points in our paper, we will pause and explicitly invite reflection and contribution from participants regarding their own experiences with comparable learning environments, whether in how they structure the space, recruit participants, develop materials and resources, etc. In this way, we will walk participants through the learning we experienced through this study.

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255 Expansive visibilization and double stimulation in a TPACK formative intervention

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Expansive learning Learning by design Teachers' professional development

SHORT ABSTRACT

In light of the challenge of integrating digital technologies and practices into teaching and learning, our study aims to contribute to teachers' professional development. Considering that to meet this challenge, teachers need to reconceptualize their activity and learn how to design technology-enhanced learning (TEL) scenarios, we propose a formative intervention that combines expansive learning with Learning by Design (LBD). It seeks to help teachers transform their practices while considering the digital components within their socio-cultural context. Based on the same epistemological principles as the Change Laboratory, it is designed to trigger transformative agency by double stimulation and is built on the principle of expansive visibilization, which is part of expansive learning. Card-based co-design of TEL scenarios in the third visibilization phase supports the modeling of new actions. Four French teachers from a secondary school in Switzerland participated in this formative intervention with the intention of addressing pedagogical issues related to teaching patrimonial literature. This study analyzes teachers' developmental trajectory through the lens of double stimulation and TPACK. The preliminary results show that the teachers expressed a conflict of motives between the desire to transmit the pleasure of literature and the need to prepare their students for exams in accordance with national programs. In order to resolve their conflict, they defined the objective of their TEL scenarios as reconciling the pleasure of school reading with the requirements of the national curricula. Our initial findings also tend to show a gradual increase in the mobilization of TPACK while constructing the second stimulus.

EXTENDED SUMMARY

Background

Integration of digital technology and practices into teaching and learning ([Wijnen et al., 2023](#)) remains a significant educational challenge ([Abel et al., 2022](#); [Albion & Tondeur, 2018](#)). Teacher training is widely recognized as a critical factor in addressing it ([Bui, 2022](#)), but change in teachers' practices "cannot be achieved merely through direct instruction" ([Koehler & Mishra, 2005, p. 99](#)). It is a complex process of systemic change ([Hauge, 2016](#); [Kirschner, 2015](#); [Pettersson, 2021](#); [Reinius et al., 2022](#)) that both necessitates and results in the transformation of the teaching-learning activity ([Laferrrière et al., 2013](#); [Lund & Hauge, 2011](#); [Ritella & Hakkarainen, 2012](#); [Virkkunen & Newnham, 2013](#)). It thus requires professional development methods that can help teachers reconceptualize ([Virkkunen & Newnham, 2013](#)) teaching and learning while taking into account digital tools and practices in their socio-cultural context.

To address this issue, we propose to combine expansive learning ([Engeström, 2015](#)) and Learning by Design ([Koehler, 2005](#); [Voogt et al., 2015](#); [Yeh et al., 2021](#)) in a formative intervention based on the same epistemological principles as the Change Laboratory ([Sannino & Engeström, 2017](#)). Through expansive learning actions and co-design of new actions in the form of technology-enhanced learning (TEL) scenarios ([Duret & Romero, 2022](#)), teachers are committed to transforming their practices while being made aware of the digital components of their socio-cultural environment that are likely to support their transformation process. Learning by Design (LBD) is widely recognized to foster teachers' development of TPACK ([Voogt et al., 2016](#); [Warr & Mishra, 2023](#)), and we consider that they would benefit from being able to take their activity system into account when they mobilize their TPACK ([Mishra, 2019](#); [Mishra & Koehler, 2006](#)) to design new TEL scenarios.

Embedded in an expansive learning cycle, TEL design in this study is seen as a creative activity ([Glăveanu, 2020](#); [Romero, 2019](#)), likely to contribute to transformative agency by double stimulation ([Sannino, 2015, 2020](#)). In the formative intervention concerned by this study, the co-design of TEL scenarios supports expansive visibilization ([Engeström, 2018](#)). Moreover, given that designing TEL scenarios is a complex activity ([Laurillard et al., 2013](#); [Warr & Mishra, 2023](#)), we introduce a card deck as a design artefact ([Visser, 2006](#)), which is created using the Activity-Centered Analysis and Design (ACAD) framework ([Goodyear et al., 2021](#)), and integrates different components of the TPACK. Teachers are invited to use it as a “material mediator” ([Kajamaa & Hyrkkö, 2022, p. 553](#)) to visibilize their design decisions and processes. In fact, design cards make the design process visible ([Wölfel & Merritt, 2013](#)) in addition to being acknowledged as useful for fostering creativity and collaborating playfully ([Peters et al., 2020](#)).

Aims

This paper aims to present teachers' developmental trajectory during the formative intervention through the lens of double stimulation and TPACK.

Methods

The participants are four French teachers from a secondary school in Switzerland. They intend to address pedagogical issues related to teaching patrimonial literature and, to this end, to take full advantage of all the digital technologies at their disposal.

Double stimulation and expansive learning provide the foundational basis for the formative intervention. Notably, it follows a process of expansive visibilization (Figure 1) and consists of a two and a half-day workshop that took place in the spring of 2023 with follow-up sessions (Figure 2).

The study focuses on visibilization phases 1 to 3 (Figure 3).

The data consists of video recordings that were transcribed verbatim. We take speaking turns as the unit of analysis after identifying topical episodes according to their substantive contents.

Results

Our preliminary results show that during the first two phases of expansive visibilization, the teachers expressed a major conflict of motives between the desire to transmit the pleasure of literature and the need to prepare their students for exams in accordance with national programs. They recognized it as stemming from a secondary contradiction within their activity system between the object of offering an authentic literary experience to their students and the rules constituted by the imposed national curriculum. Then, they defined the resolution of their conflict of motives as the main objective of the co-design of TEL scenarios in the visibilization phase 3. Additionally, the results tend

to show a gradual increase in the mobilization of TPACK while constructing the second stimulus in the co-design sessions.

Conclusions

We discuss the way in which double stimulation supports the teachers' change process and how TPACK is enacted within the construction of the second stimulus. A critical discussion analyzes the role of the card deck as a mediating artefact and its transferability to other types of formative interventions.

We conclude on the limitations and potentials of this combination—expansive learning and learning by design—regarding teachers' collective professional development.

Interaction with the participants

Dynamic rhythm, visual elements and card deck manipulation by participants.

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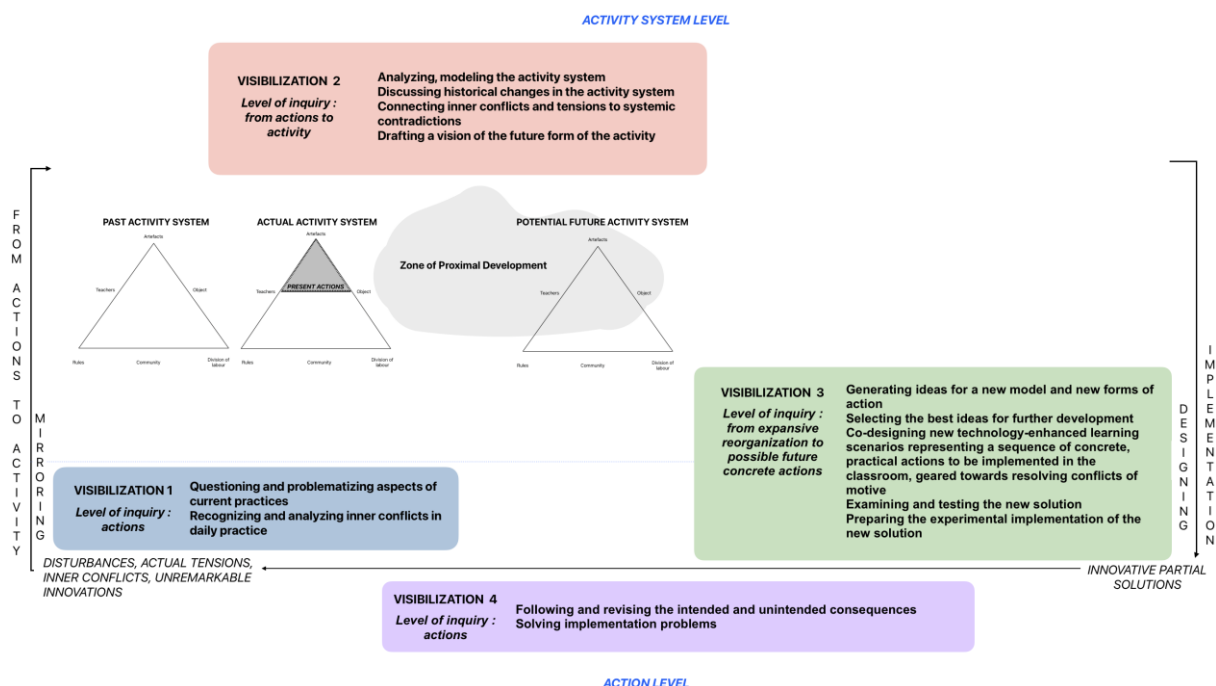
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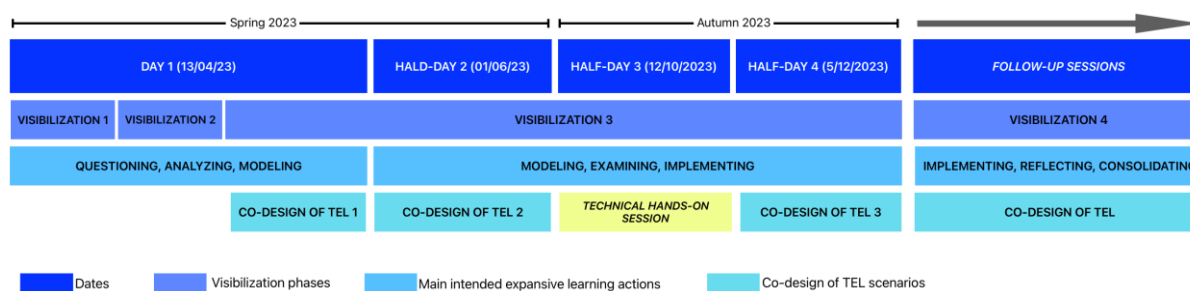
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Visibilization phases, adapted from Engeström (2018)



Overview of the formative intervention



The formative intervention in photos : three visibilization phases



259 Building a socio-educational ecosystem from the community funds of knowledge and identity approach

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Presentation: Poster presentation (presented in person at the congress)

Theme: Imagining future worlds

Keywords: Community funds of knowledge and identity Socio-educational ecosystem Local learning ecologies

SHORT ABSTRACT

The purpose of this qualitative study is to document and illustrate the design, implementation and impact of a socio-educational ecosystem from the community funds of knowledge and identity approach (CFoKI). An archaeological site is the specific CFoKI and basis to engage the socio-educational agents to structure a pedagogical project. Action research purposes are followed, implying active collaboration between this community agents and researchers. Six students (10 and 11-year-olds), family members of the students, teachers, school headmistress, archaeologists, a technician from the City Council, an educator from the Educational Resource Centre of the region and an educational technician from a museum participated in observations, interviews and focus groups carried out. In particular, governance (how this socio-educational ecosystem is structured), impact (what changes and effects are produced in terms of learning and community belonging) and sustainability (factors that enable it to be maintained over time) were considered as analytical categories. Findings show that governance requires leadership with a communal vision, fostering trust, reciprocity, autonomy, and agency. Impact is manifested in social cohesion and common identification through the archaeological site. This serves as both a material and symbolic medium, connecting participants and social, educational, and community spaces, facilitating the learning of Sustainable Development Goals and interpersonal skills. Regarding sustainability, it is necessary to clear roles, expertise, and interests among participants, with schools playing a key role in energizing the socio-educational network. Collaborative organization and development are essential, supported by a shared framework like the community funds of knowledge and identity approach for coherence.

EXTENDED SUMMARY

Community funds of knowledge and identity refers to any natural-geographical, cultural-artistic, social-institutional, oral or historical legacy that, in a network involving schools and other social and community agents, offer potential learning opportunities, by contextualizing teaching practices, and shared identifications or affiliations (Esteban-Guitart et al., 2022). This approach is grounded in the funds of knowledge tradition (González et al., 2005), Bronfenbrenner's (1976, 1989) ecological-systemic model on human development, as well as recent advances in the design and implementation of "local learning ecosystems" (Hannon et al., 2019). That is to say, the creation and articulation of socio-educational networks of collaboration between different actors to enhance its potential in terms of favouring meaningful learning, allowing its appropriation and sense of

belonging. It is necessary to clarify that we understand socio-educational ecosystems as a set of social, educational and community agents (from formal, non-formal and informal settings) who co-design an educational project.

The aim of this study is to document the construction of a socio-educational ecosystem from the perspective of community funds of knowledge and identity. In this sense, the purpose is to identify the factors and structures that enables this type of experience, including the difficulties and facilitators. Therefore, we consider it essential to explore “governance”: agency and leadership (Civís & Díaz-Gibson, 2021), the “impact” in terms of community and learning, as well as the “sustainability” or the long-term viability of the project itself (Esteban-Guitart et al., 2022).

In particular, the socio-educational ecosystem that we present takes an archaeological site of an Iberian town as a departure point as a community fund of knowledge and identity. The educational project is organized and codesigned by a public school in Catalonia (Spain) and different members of the community. Hence, in this pedagogical proposal, project-based learning and workshops on archaeological heritage prevail. That is, curricular activities are conducted with the explanations of experts and using materials designed for this context.

At the methodological level, we follow some of the purposes of Action Research (AR), where the researcher is integrated into the community to accompany and carry out processes of understanding the changes that are emerging. In this sense, qualitative data is gathered through researcher and participant observation, semi-structured individual and group interviews, and focus groups, in order to explore the aspects that facilitate, hinder and maintain a socio-educational ecosystem, as well as their impact in terms of learning and community, through the voices of the community agents themselves. Specifically, participants are six children in the fifth-year of primary school (10 and 11-year-olds), family members of the students, two teachers, the headmistress of the school, two archaeologists and researchers from the University of Lleida, a technician from Lleida City Council, an educator from the Educational Resource Centre of Segrià and a museum educational technician, along with the researchers from the University of Girona.

We conduct a content analysis (Bardin, 2011) using the transcripts of the texts from the focus groups and the interviews, following the steps of pre-analysis, exploring and processing the material, making inferences and interpreting the findings. Categories were based on three thematic blocks defined a priori, following some dimensions considered in the literature on socio-educational ecosystems (Civís & Díaz-Gibson, 2021; Hannon et al., 2019): governance, impact and sustainability. By "governance" we mean the forms of organization of the socio-educational ecosystem, including the role and function of the agents involved (agency), as well as the forms of leadership. In relation to "impact", this is analyzed based on the learning derived from the educational project, as well as the processes of belonging, adherence and social identity potentially derived from them. Finally, by "sustainability" we mean the social and material conditions that make socio-educational networks possible, as well as the design and implementation of educational projects based on the perspective of community funds of knowledge and identity, in particular.

Overall, the proposal responds holistically to some UNESCO reports (2015, 2021). On the one hand, they emphasise the need to advocate for a common vision of the public purpose of education (Locatelli, 2019, 2023). Therefore, projects such as the one described here, strive for educational practices that lead to social transformation for a major participatory and democratic education,

enriching school practice and expertise drawing from other learning opportunities distributed across the territory.

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261 Spanish Bilingual Preservice Teachers' Syncretic Pivots: A Change Laboratory Intervention

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: culturally responsive teaching Change Laboratory preservice teacher education

SHORT ABSTRACT

Over the course of its development, bilingual teacher education has emphasized supporting immigrant students and families, especially during preservice teachers' practicum experiences. Designed as a qualitative case study of 8 Spanish bilingual preservice teachers, our research focused on investigating how preservice teachers engaged in *syncretic pivoting* through their multicultural curriculum transformation. Syncretic pivoting draws on the concepts of syncretism (Gutierrez & Jurow, 2016) and pivots (Goffman, 1981; Larson, 1995) to describe the process wherein educators serve as cultural mediators between academic and everyday knowledges within multicultural curricula. Aimed at supporting newcomer students who are also English learners, this pedagogical move involves educators pivoting between academic and everyday cultural practices to design culturally responsive pedagogies and consequential learning in their classrooms. We examined how syncretic pivoting is reflected in student teachers' reflections and lesson plans as they engaged with the diverse cultural repertoires of practice of their students. Through deliberate advocacy for social-justice and equity-oriented bilingual learning opportunities related to the role of culture, multicultural curriculum transformations were constructed by pre-service teachers. Data for this project was collected from a graduate-level seminar course designed as a Change Laboratory (CL) offered at an urban postsecondary institution in the U.S. East Coast. Journal entries, lesson reflections, and final group projects collected from the CL sessions were subjected to narrative analysis using activity theory-based concept coding. Implications for supporting preservice teachers' curriculum transformation are discussed.

EXTENDED SUMMARY

Background

Supporting immigrant students and families has been at the center of bilingual teacher education amongst preservice teachers who are involved in their practicum experiences. Recently, an influx of Spanish emergent bilinguals relocated to the largest megalopolis of the U.S. East Coast. Deviating from studies examining the lack of bilingual teachers serving migrant children in urban contexts, this study investigates the multicultural curriculum transformation made by Spanish bilingual student teachers (STs) as they engage in their field placements. Specifically, the study dives deeper into how STs leveraged the cultural and language practices of emergent bilinguals in their classrooms to engage *insyncretic pivoting* wherein they served as cultural mediators that helped students develop both academic and everyday literacies. Through syncretic pivoting, STs not only hybridized everyday and

academic knowledges but also valued the unique cultural and linguistic assets that emergent bilingual students brought to the classroom.

Aims

A scripted curricula for Spanish bilingual STs to adopt from in their school placements is typically the English standards and textbooks pre-determined by school placements; alternatively, a culturally responsive teaching stance focuses on the role of culture in mediating the emergent bilinguals' learning and eliciting funds of knowledge (Moll, 2019). To bridge this gap, this Change Laboratory (CL) provided opportunities for participants to resolve such tensions experienced in their field placements. One tension we focus on in this CL study is how ST's learned to pivot from focusing strictly on teaching their class content toward leveraging everyday knowledges to design for culturally responsive and expansive forms of learning– what we are calling syncretic pivoting. As such this study sought to answer the following research question: How do Spanish bilingual STs engage in syncretic pivoting to leverage the cultural practices of youth toward the development of expansive learning in their classrooms? How do Spanish bilingual STs facilitate multicultural curriculum transformation to support newcomers who are also English Learners?

Methods

CL is a method based on cultural-historical activity theory (CHAT) and the theory of expansive learning (Engeström, 2015). The latter theory facilitates participants' (in this study, STs') collective learning via participatory analysis of tensions and offers tool-based co-mentoring conversations (Hunskar & Gudmundsdottir, 2023), such as by focusing on the struggles between scripted curricula and culturally responsive teaching (Gay, 2023). Thus, the first author applied a CL methodological framework (Virkkunen & Newnham, 2013) to devise formative intervention sessions to support the unique professional learning needs of STs to facilitate their multicultural curriculum transformation. Designed as a qualitative case study (Yin, 2018), data collected from 8 Spanish bilingual preservice teachers were examined via narrative analysis (Josselson & Hammack, 2021) as situated in the interpretive research paradigm (Merriam & Tisdell, 2016). With the participants' permission and consent, three primary datasets (journal entries, reflective papers, final group projects) were collected from materials generated by the CL participants. These datasets were further analyzed using concept coding (Saldaña, 2021).

Results

Our study identified three pedagogical moves employed by pre-service teachers that enabled them to engage in what we term syncretic pivoting including:

- a) connecting scientific concepts about nature to the sociohistorical lives of their students;

QUESTION #2: CRITICAL CONVERSATIONS

- Capitalize on spontaneous learning opportunities
- Linguistic variation brought by the students

“Se les fue la energía y no pudieron usar los outlets... the same thing happened in Puerto Rico... no funciona” - [redacted]

“Muy bien y pues un poquito en República Dominicana y después vino uno que se llama Ian y ese cogió Cuba y siguió por Florida...” - [redacted]

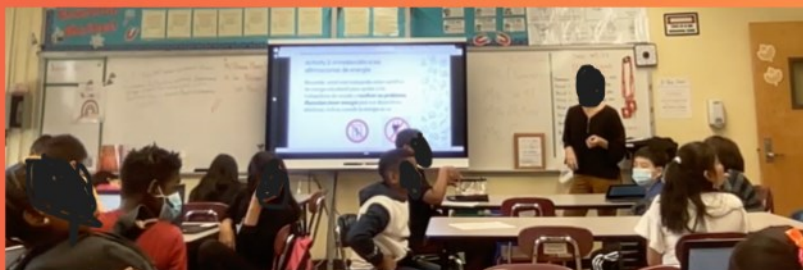
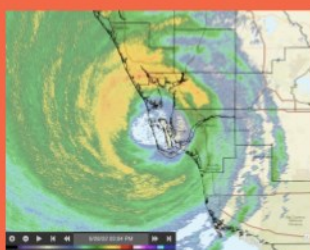


Image1. Hurricane

b) redesigning and integrating cultural play forms to their lesson plans, exemplified by their transformation the popular Latinx game ‘lotería’ to teach English vocabulary;



Image2. Loteria

c) creating cultural narratives of students’ community events as news stories to develop journalism literacies.



Image3. Cultural Narrative of Community Events

These strategies underscored how STs' syncretic pivoting involved moving away from traditional literacy development toward more genuine interactions with students' cultural practices, knowledges, and linguistic diversity. Through extensive analyses of their journal diaries, we map how syncretic pivoting emerged as STs reflected on the importance of weaving together and reorganizing everyday and academic knowledge systems toward the development of more consequential forms of learning for their newcomer students.

Conclusions

Our robust analysis of Spanish bilingual STs' reflection journals, reflection papers, and culminating presentations provided profound insights into the development of their pedagogical practices. The data revealed that as STs attuned to culturally responsive pedagogies and syncretism, they were more willing to pivot from traditional teaching methods toward prioritizing the cultural practices of their students. As this sensibility developed amongst STs, they encouraged students to connect their personal, cultural, linguistic and academic insights with the academic content they engaged in the classroom. We term this shift in prioritizing culturally responsive practices as "syncretic pivoting." Syncretic pivoting represents an emphasis in how teachers come to design for culturally responsive learning, as they identify opportunities to design learning ecologies that shift from conventional teaching practices by centering students' everyday literacies.

How interaction with the participants is planned

We will begin with an overview of the study through a PowerPoint presentation. Then, the paper authors will discuss key findings, tensions, possibilities, and present questions for participants to consider.

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263 Fear of disability as a germ cell in teacher behaviour towards learners with learning disabilities

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: Inclusive education Fear of disability Teacher beliefs and practices

SHORT ABSTRACT

Within inclusive school settings, the challenge of inclusion arises when teachers with little knowledge of inclusive pedagogy, working with limited resources within a society that discriminates against disability, are required to self-regulate and mediate cultural beliefs and practices towards learners with disabilities in their classrooms. Using a qualitative case study design, the study recruited 18 preschool teachers from public basic schools that are implementing inclusive education in Ghana. The findings reveal that teacher attitudes and practices towards learners with learning difficulties/ disabilities emerge in dominant cultures and are transmitted through a culture of fear of disability. The study has implications for teacher education and in-service training in inclusive pedagogy.

EXTENDED SUMMARY

Background

Lev Vygotsky envisioned “a principle of shared, rather than competitive, goals” (Smagorinsky, 2012, p. 10) mediated in society that should be inclusive and evolving. Mediation here involves the transmission of cultural psychological tools, which, when internalised, inform an individual’s thinking and practices (Kozulin, 2003; Kozulin & Gindis, 2007). Rapid changes in sociocultural processes have led to a cultural consciousness that seeks justice and equal participation for non-normative people in society. Most studies in Ghana have linked the challenges in inclusive education to teacher beliefs and attitudes towards disability (e.g., Naami & Mort, 2023; Opoku et al., 2022, 2021a, 2021b; Butakor et al., 2020; Agbenyega, 2006). Teachers, by cultural design, are required to enforce dominant cultural beliefs and practices in their classrooms. This mundane task makes it difficult for teachers themselves to intervene in negative cultural beliefs and practices in their classrooms, particularly those targeted at learners with disabilities. Within inclusive school settings, the challenge of inclusion arises when teachers with little knowledge of inclusive pedagogy, working with limited resources within a society that discriminates against disability, are required to self-regulate their cultural beliefs and practices towards learners with disabilities. In this paper, we argue that fear of disability presents a critical germ cell in the development of teacher agency on disability and may account for teacher unwillingness or inability to proactively engage and intervene in the pedagogical and social needs of learners with learning disabilities in inclusive settings.

Aim

The study is part of a bigger PhD research project that explored teacher classroom sociocultural practices and the development of learners with learning difficulties in inclusive public preschool settings in Ghana. The present paper seeks to elucidate fear of disability as a critical psychological artefact that mediates and sustains teacher agency towards learners with disabilities in inclusive preschool classrooms in Ghana.

Methods

A qualitative case study design was employed for the study. Eighteen preschool teachers were purposefully recruited from six public basic schools in the Ga East Municipality of the Greater Accra Region of Ghana, where inclusive education is being piloted. Focus group discussions and individual teacher interviews were used as data collection methods for the study. A structured interview guide was developed based on Vygotsky's activity theory. The interview guide was open enough to allow the researchers to probe participants' responses to reveal and situate emerging concepts in their narratives during the focus group interviews. Emerging concepts were initially documented as themes and sub-themes and were presented in individual teacher interviews for validation and clarification. The interviews were done in English and were recorded and transcribed. The analysis of the emerging themes was process-oriented and researcher-focused. Major themes are presented as findings with selected participants' direct quotes. The findings were situated within Ghanaian dominant cultures and existing literature on Vygotsky's activity theory that human psychological functions emerge and are mediated in society.

Results

The study revealed that fear of disability is masked and presented as a belief that disability is a burden and contagious. The findings suggest a link between the fear of disability as a cultural psychological artefact and the use of corporal punishment by learners with learning difficulties. However, the use of corporal punishment did not vary between typical peers and learners with learning difficulties in inclusive classrooms. Even though general cultural knowledge and practices are rapidly changing within Ghanaian settings, the findings tend to support the notion that negative norms and practices towards disability are evolving phenotypically to escape entrapment by new policies and laws that criminalize violence against young children and intentional barriers that limit the full participation of learners with disabilities in their classrooms and society.

Conclusions

It is concluded that teacher behaviour towards learners with disabilities emerges from their dominant cultures, and such behaviour is sustained in inclusive classrooms through the culture of fear of disability. The study has implications for teacher education and in-service training (INSET) on inclusive pedagogy, particularly in the learning and transformations of learners with disabilities who enter classrooms as victims of societal stigmatization and neglect.

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267 Developments in Funds of Identity research

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: funds of knowledge/identity social justice education

SHORT ABSTRACT

Since the concept of Funds of identity was introduced by Esteban-Guitart (2012), building on Moll et al.'s (1992) work on Funds of knowledge, teachers and researchers worldwide have been inspired to develop educational approaches that connect the school curriculum with knowledge and experiences that students acquire in their families, communities and peer groups. Underlying these endeavours is the aim to make education more meaningful for children and adolescents whose experiences are now ignored at school, and thus contribute to education that is better equipped to meet the needs of a diverse student population (see also Esteban-Guitart, 2024).

In this symposium we explore new avenues that are opened when FoK/I and social justice research meet. We present studies on different age groups and settings in four different countries, in which researchers and teachers collaboratively developed new FoK/I approaches and tools, or applied these in new contexts. Hogg describes a participatory approach, with teachers, parents and students in a New Zealand high school collectively determining how to learn about students' FoK/FoI. Both Veerman and colleagues and Subero and colleagues worked with the notion of identity artefacts, incorporating the use of digital tools, in respectively primary schools in The Netherlands, a community centre and higher education in Catalonia. Richards and colleagues reflect on how they applied FoK/I in anti-racist and social justice-informed research in teacher education in England. In interaction with the participants we will discuss promising ways to further develop FoK/I theory and educational approaches that contribute to social justice in education.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Historical and more recent evidence highlights that Māori and Pasifika students continue to be minoritized within New Zealand schooling through deficit theorizing and low teacher expectations. Approaches outlined in funds of knowledge (FoK) and funds of identity (FoI) scholarship offer important ways for teachers to reframe their thinking about minoritized students, through learning about their strengths and aspects that students define as central to their identity. A consistent feature of FoK/ FoI studies internationally is that researchers and/or teachers determine the method by

which teachers learn about their students' FoK/FoI. In contrast, in the present study, rather than imposing an approach on students, participating teachers, parents and students collectively determined the approach to be taken. The research, conducted in a New Zealand high school, was an attempt to respond to the minoritization of Māori and Pasifika school students. The project involved Māori and Pasifika students and their parents and high school teachers, who were organised into teams: each team comprised a teacher, two or three students from their current class(es), and students' parents (when available). In each team, the teacher learnt about the students' FoK/FoI using an approach that was collaboratively agreed by the team. Findings reveal that taking a collaborative determination of the approach to learn about their FoK/FoI with the students themselves provided an opportunity to establish mutual respect, led to use of approaches which were culturally relevant for diverse students, and produced meaningful understanding of students' FoK/FoI for participating teachers.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Collaboratively designed ways to learn about students' Funds of Identity in New Zealand

Background

Despite aspirational government policy which describes a vision of culturally sustaining education, Māori and Pasifika students continue to be minoritized within schooling through deficit theorizing and low teacher expectations (e.g., Hetaraka, 2022; Turner et al., 2015). Approaches outlined in funds of knowledge (FoK) (e.g., Moll et al., 1992) and funds of identity (FoI) scholarship (e.g., Esteban-Guitart, 2012) offer important ways for teachers to reframe their thinking about minoritized students, through learning about their strengths and competencies from life world experience and aspects that students define as central to their identity.

Aims

The research, conducted in a New Zealand high school, was an attempt to respond to the minoritization of Māori and Pasifika school students. It was the first research related to application of FoK/FoI theory in a New Zealand high school. A common feature of FoK/ FoI studies internationally is that researchers and/or teachers determine the method by which teachers learn about their students' FoK/FoI. In contrast, in the present study, rather than imposing an approach on students, participating teachers, parents and students collectively determined the approach to be taken. A collaborative approach was employed after a Māori colleague of the non-Māori researcher stated that they would not be willing to have a teacher visit their home. Because of the severe and ongoing consequences that Māori have suffered under British colonisation, including in schooling, it was unsurprising that non-Māori teachers may not be trusted. To have a chance of success, the design and conduct of the study needed to uphold the mana (dignity) of Māori participants, and the researcher needed to have hūmārie (humility and openness) Cooper et al., 2024). Thus, for this study, it was hoped that student, parent and teacher participants' negotiation and agreement about the method used would facilitate application of a culturally appropriate approach.

Method

The study involved Māori and Pasifika students and their parents and high school teachers, who were organised into teams: each team comprised a teacher, two or three students from their current class(es), and students' parents (when available). In each team, the teacher learnt about the

students' funds of knowledge using an approach that was collaboratively agreed by the team. Thus, each team designed the details of their own intervention.

Qualitative data were collected over a period of six months, at every stage of the team process, including participants' perceptions of potential and hoped-for valued outcomes, each team's approach to decision-making and chosen methods of learn about students' FoI, implementation of chosen interventions, and participants' perceptions of valued outcomes achieved.

Results

Findings reveal that taking a collaborative determination of the approach to learn about their FoK/FoI with the students themselves provided a foundation for the development of mutual respect, led to use of approaches which were culturally relevant for diverse students, and produced meaningful understanding of students' FoK/FoI for participating teachers.

Some examples of personalised approaches applied within teams illustrated the Māori value of humility, shown within the proverb that "the kumara does not speak of its own sweetness". In one team, this meant that the two students, who were close friends, took the approach of telling their teacher about each other's skills and competencies. In another team, the two students preferred to be observed in chosen activities. For a shy Cook Island student, his teacher's observation of him at Cook Island Māori dance group was comfortable for the student and enlightening for his teacher. Significant valued outcomes were achieved, with the most significant gains relating to students who previously exhibited behaviours that suggested high levels of marginalisation, such as poor attendance, lack of enthusiasm for learning, and low persistence in learning.

Conclusion

Findings from this small study suggest the value of collaborative approaches to FoK/FoI research, in which researchers share power with teachers, parents and students. Further research is recommended to explore features of studies which may effectively support collaborative approaches involving students, parents, and teachers.

Interaction with participants

Discussion questions will be posed, such as (1) What preparation or training is needed for researchers, teachers, parents and students to successfully share power in a collaborative approach to applying FoK/FoI theory in schools?

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

For teachers it can be challenging to connect the curriculum to students' learning experiences outside school, especially when their own social and cultural background differs from those of their students. As a result, students may experience a lack of connection between school and life outside school. This paper explores how teachers can use digital media to learn about and build on students' funds of identity (FoI), and thus make education more meaningful for them. Primary school teachers and researchers collaboratively developed, applied and evaluated assignments involving digital media that were meant to make students' FoI visible and to use them in teaching. Interviews, logbooks and questionnaires were used to investigate how teachers and students experienced the approach and how it affected students' self-efficacy, growth mindset, well-being, and motivation for learning at school.

Practical 'digital funds' assignments were developed that can be shared with other teachers and schools. The approach was valued by teachers and students and they reported positive effects on

self-efficacy, growth mindset, well-being and classroom climate. However, none of these positive results could be confirmed by the quantitative analyses of the questionnaire. In the discussion we address the question how to explain the discrepancy between teachers'/students' experiences and the results of the questionnaire, and how to deal with some of the challenges and dilemmas that teachers encountered, e.g. concerning differences in wealth between students becoming visible, and applying this approach in a textbook-driven curriculum.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Working with digital identity artefacts in primary education

Background

Building on the knowledge, skills and experiences that children acquire outside of school (their funds of knowledge or funds of identity, FoK/I), makes students feel more seen and heard, and contributes to a better connection between school and home. This especially holds for students whose cultural or social background is not 'mainstream'. This paper reports on a project that explored how digital media, popular among children, can be used to find and build on students' FoI in primary education. Previous studies into the benefits of a digital approach of FoI (Kajamaa et al., 2018; Poole, 2017) focused on secondary education.

Teachers and researchers collaboratively developed, applied and evaluated assignments that invited students to create identity artefacts (Subero et al., 2018), using digital media, with the aim to make students' FoI visible and to use them in their teaching. We investigated how teachers and students experienced the approach and how it affected the students, focussing on variables that are important for a successful school career, e.g. confidence in one's abilities, a growth mindset, well-being, and motivation for learning at school.

Aims

The aim of this study was to explore how primary school teachers can use digital tools in a FoI approach, to gain insight into teachers' and students' experiences with this approach and into effects on school-success related variables.

Methods

Ten teachers and three researchers collaboratively designed assignments and activities that aim to make FoI visible through digital identity artefacts. The teachers worked with their students on the assignments over a period of three months and tried to incorporate the FoI that became visible in their education.

A mixed-methods design was used to evaluate the digital FoI approach. Semi-structured interviews were conducted with teachers ($N=12$) and students ($N=35$). Furthermore, students completed a questionnaire about their self-efficacy, school wellbeing and growth mindset and motivation ($N=189$, pre- and post-test), and teachers' logbooks were collected ($N=10$).

Content analysis was used to analyse the interviews and logbooks. The questionnaires were analysed through a univariate multilevel regression analysis.

Results

In our presentation we will give some examples of assignments and activities that teachers used in their classrooms. E.g., the 'vocabulary wall': every week the teacher shared a new 'word of the week'. Students were asked to make a picture in their home environment to show the meaning of this word

in their own life. The pictures were printed, discussed in the classroom and placed on the vocabulary wall in the classroom.

Teachers indicated that the digital activities provided a good picture of the FoI of their students, especially those who normally asserted themselves less in class. They found students engaged and enthusiastic during the digital funds activities in the classroom. Teachers also noticed an increase of student well-being, better mutual understanding and improved relationships, and some even an improved classroom climate. This was attributed to students getting a glimpse into each other's lives, discovering differences and similarities, and discussing them with each other. In individual cases, an increase in self-efficacy and a change of mindset (towards growth) was reported. However, none of these positive results could be confirmed by the quantitative analyses of the questionnaire. [Teachers also reported some challenges and dilemmas they encountered. Some teachers were hesitant to use assignments that made differences in wealth between students visible. For teachers working in schools with a textbook-driven curriculum it proved more difficult to use a FoK/I approach.

Conclusions

While the original approach of funds of knowledge González et al. (2005) mainly used interviews with parents and home visits, in this project digital media activities proved to be a fruitful way for students to make their funds of identity visible, and teachers were able to connect these to the curriculum. The assignments were adapted based on the experiences, and additional information was added so that they can serve as practical inspirational examples for other teachers and schools. Teachers and students experienced positive outcomes, however, effects could not be made visible with quantitative measures.

Interaction with the participants

In our presentation we will raise several questions for discussion: How to explain the discrepancy between teachers'/students' experiences and the results of the questionnaire? How to deal with some of the challenges and dilemmas that teachers encountered (differences in wealth between students becoming visible, applying this approach in a textbook-driven curriculum)?

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Over the last years, there has been a significant shift in interest towards issues related to identity and education. Focusing on learning processes inside and outside school, and from a Vygotskian framework, we highlight the relevance of the notion of meaningful learning and contextualization related with the definition of identity artifact (IA). We understand IA as educational resources in which they try to capture all the things that make sense and are meaningful to learners and which, subsequently, can be used by educators to work on curricular and pedagogical content. The notion of IA has the origin in the recognition and legitimization of the socio-cultural practices and the contexts of life of the learners; their funds of identity. Below we discuss research on two educational experiences based on the Funds of Identity approach and developed through the use of identity artifacts in Catalonia. 1) The program took place in an Open Center (educational context outside the school) that aims to provide alternative spaces for children and adolescents whose needs are not met by the existing educational processes and learning paths that society offers. They use IA that the participants themselves prepare that provide information about interests and visions. 2) The program implements and evaluates a digitally mediated educational practice in higher education based on the pedagogical usage of identity artifacts made by the learners themselves. The results obtained permit

the illustration and analysis of the identity artifacts produced, their relationship with the chosen topics, as well as what was learned.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Identity Artifacts: Some Educational Experiences In Catalonia

Background

The term Funds of identity denotes a set of resources or box of tools. These tools have been historically accumulated and culturally developed; they are socially distributed and transmitted; and they are essential for constructing one's identity and for defining and presenting oneself (Esteban-Guitart, 2016). According to this definition, everything you conceive of or experience as 'yours' can be considered as a feature of your identity. That is, identity is resolved in an experience, one which is culturally mediated (through language, a particular political discourse, a flag or a song, etc.) and social in origin and it includes reference to those things, objects, people, and experiences that you consider significant and that define and characterize you. From this perspective, a key tool in educational research is the use of identity artifacts (IA), educational resources that collect those aspects of a student's life that the learner perceives as most significant and personally meaningful. Educators use these artifacts to address curriculum and pedagogical content, stemming from the recognition of learners' socio-cultural practices and life contexts.

This communication delves into the exploration of IA as a tool for educational contextualization through the lens of two pedagogical experiences grounded in the understanding of identity backgrounds. **The first experience** (Esteban Guitart et al., 2015; Subero, 2015), was carried out in Barcelona –Spain–. The project was set in an Open Center. The Open Center (OC) are daytime services that belong to the Primary Care Social Services Network and the Child and Adolescent Protection System as preventive and socio-educational spaces available in the afternoon. **The second experience**, was carried out in the University of Girona with students of Psychology in the subject Educational Psychology (Baig, Boned, González-Ceballos & Esteban-Guitart, 2023).

Aims

Experience 1: The general objective of the project is, through the use of IA in educational activities, identify and modify the sense that young people from different social and cultural backgrounds awarded to the institution and school practice.

Experience 2: The purpose is to conceive, execute, and assess a digitally mediated educational practice within higher education. The aim of this work was to design, implement and evaluate an educational practice, digitally mediated, in the field of higher education based on the creation and use, with pedagogical purposes, of identified artifacts produced by the learners themselves.

Methods

Experience 1: The participants were 6 adolescents between 15 and 18 years. To do this, 9 sessions of 60 minutes were designed using methodologies and techniques based on identity and autobiographical tools (IA). Some of these techniques were the identity song, the learning spiral, the identity comic, the testimonial activity and the transformative drawing.

Experience 2: The participants were 64 university students aged between 20 and 32 years, the process unfolded in four key phases. Firstly, the students engaged in crafting their IA. Subsequently, they established connections between their personal experiences and academic pursuits. Following this, there was a practical engagement phase, where students do a fieldwork. The culmination of

their efforts materialized in the development of a shared artifact, in the form of a video posted on a YouTube channel. The entire process was enriched by the participants' self-assessment of the acquired learnings.

Results

Experience 1: The results exposed by the participants during the sessions of the program makes explicit a discourse marked by the identity transition. The results show that the activities of educational and professional sense (based in IA) facilitated the adoption of a new positive sense, by young people, in relation to formal education.

Experience 2: The results of this initiative provide a comprehensive illustration and analysis of the IA created, their alignment with chosen themes, and the perceived learnings from the perspective of the students and the teaching team, evaluated through a predefined rubric.

Conclusions

Experience 1: In conclusion, the autobiographical techniques designed based in the IA provided an out-of-school reflective space in which the young people could discuss and debate about schooling, thus creating a space to discuss and share their learning trajectories.

Experience 2: In conclusion, the study underscores the impact of this educational practice in fostering academic, personal, and procedural learning. The IA are proposed as epistemic devices-mechanisms ("objects-for-learning") through which they facilitate personalization processes through the link between the interests, motivations and needs of learners and educational opportunities.

Interaction with the participants

Several issues for discussion will be raised in the presentation. The discussant will reflect on the four presentations, and open the discussion. Then the participants will be invited to join the discussion.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

In English schools, many participants continue to be disproportionately and negatively impacted by racism. Evidence demonstrates that particularly for black students, racism is a normalized, prevalent, and sustained aspect of educational lives which has far-reaching impacts. Whilst teachers have mandatory duties to establish safe environments for all, there are no professional requirements to apply anti-racist practices, or recognise histories, knowledge, and skills acquired outside of school, particularly when they may be representative of diverse cultural or social backgrounds. We are a group of teacher-researchers located in Bristol, and the wider Southwest of England region, who come to this work from distinct personal racial, gendered, classist, geographic, and ableist perspectives, and distinct professional experiences. We have collaborated on children, teacher and community-led projects which make use of Funds of Knowledge and Funds of Identity scholarship to better understand cultural relationships and practices, towards advancing notions of anti-racism for schooling across the region. In this presentation, we reflect on three recent research projects, which relate specifically to deepening understanding of professional teaching identities and responding to teacher racism and deficit theorizing. We highlight our findings which have informed the emergence of 'new circuits' of anti-racist informed teacher education research, which extend applications of Funds of Knowledge and Funds of Identity into English schooling contexts.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

New circuits of FoK/I: Anti-racism and teacher education across the Southwest of England

Background

In English schools, many participants continue to be disproportionately and negatively impacted by racism. Evidence demonstrates that particularly for black students, racism is a normalized, prevalent, and sustained aspect of educational lives which has far-reaching impacts. Significant research has highlighted the ways in which racisms and deficit theorizing are key factors which maintain inequality within the education system, operating through policy and practice at national, local, school and classroom level (CRRE, 2021). Ongoing struggles in pursuit of an intentionally anti-racist educational agenda faces deep rooted opposition, obstacles, and barriers. Such factors are particularly apparent in Bristol and the Southwest of England, whose unique and varied geographies provide differing but related trends and effects in relation to the national context.

Teachers have mandatory equality, diversity, and inclusion duties to establish safe environments for all. There are no professional requirements for teachers to recognise histories, knowledge, and skills acquired outside of school, particularly when they may be representative of diverse cultural or social backgrounds. Educational policies such as reforms to teacher education provisions, 'single story' national curriculum, alongside government rhetoric characterising a war on 'woke' and emphasising 'equality of opportunity' have sought to prioritise values of meritocracy and liberalism uncritically. Evidence-based claims of institutional racism, mandatory anti-racist teaching and learning have been rejected. Meanwhile, significant increases in reported racism, and widening gaps in awarding, progress, and outcomes at every level of schooling, continue to further exacerbate longstanding educational inequities.

We are a group of teacher-researchers located in Bristol and the Southwest of England, who come to this work from distinct personal racial, gendered, classist, geographic, and ableist perspectives, and varied professional experiences. The ever-changing nature of our work is predicated on our willingness and commitment as teacher-researchers in the field of teacher education to learn from and with one another and wider communities through an openness to sustained dialogue. In seeking transformative approaches to racism within a socio-political educational context which is hostile to critical discourses about anti-racism, communities in Bristol and the Southwest have engaged in co-constructed research partnerships that contributes to revitalized critique and transformative pro-action against educational reproduction of existing inequalities.

Since 2022, our emerging 'communities of practice' have collaborated on children, teacher and community-led projects which make use of Funds of Knowledge and Funds of Identity (FoK/I) scholarship to better understand cultural relationships and practices, towards advancing notions of anti-racism teaching across varied educational contexts (Carter, 2022; Carter et al., 2022; Gorell Barnes et al., *in press*; Grant et al., 2023). We contend that cultural, linguistic, and identity diversity is a valuable resource for promoting high-quality, culturally relevant teaching and learning in teacher education. Existing literature on FoK/I have provided significant evidence to substantiate these assertions across international contexts (Esteban-Guitart, 2024). One of our ongoing challenges remain that many colleagues are not aware of or have access to 'new circuits' of anti-racist thinking, while others do not accept that they are necessary in the first place (Smith and Lander, 2022).

Aim

In this presentation, we reflect on three research projects, which relate specifically to deepening understanding of teaching identities and responding to teacher racism and deficit theorizing in our diverse educational settings.

Methods and results

In the first part of the presentation, , Dr Jane Carter discusses a co-designed research project with community influencers from across Bristol's Somali community to enable traditionally 'hard to reach' (Hannon et al. 2020) children and families engage with book choice, book sharing and reading opportunities. In the second part, , Malcolm Richards reflects on a research project drawing on funds with Black teachers in the rural Southwest of England to emphasize the importance of Black resistant capital, counter spaces, and counter story narratives (Maylor, 2014) in the conceptual, methodological, and practical applications of anti-racist teaching in rural schools. In the third part, Sarah Whitehouse discusses how a collaborative project with Bristol primary school children to better understand the effects of racism on mental health resulted in uncomfortable realisations of how dark funds of knowledge' (Zipin, 2009) are intentionally represented by teachers, and how these must be disrupted within professional teaching cultures.

Conclusion

While such discourses are often assumed to be prevalent in rural and coastal settings, our research recognises that colleagues in 'superdiverse' settings can be reluctant to respond to widespread deficit theorizing and racism. Common amongst these 'new circuits' is an emphasis on engaging with the wider community funds to redesign approaches to teacher education, which develop and centre a more informed understanding of student, family, and community engagement (Preece and Levy, 2020).

Interaction with the participants

Several issues for discussion will be raised in the presentation. The discussant will open the discussion.

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271 Arranging Agency in schools

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: transformative agency education youth

SHORT ABSTRACT

Educational researchers and practitioners in secondary education have recently been showing an increased interest in student agency. This interest is mainly evoked by a perceived decline of students' motivation for learning at school. Student agency, conceptualized as ownership of the learning process, in the sense of self-regulation and setting one's own goals, is seen as a solution for this problem. Conceptualizations of agency involving transformative agency, understood as people collaboratively transforming their life circumstances and being transformed in this process, are less common in the educational context. In other practices where professionals work with young people, such as youth theatre, homework support and youth work, however, (seminal) forms of supporting young people's transformative agency can be found. In this paper we explore what schools can learn from such practices, using insights from a descriptive study into three organizations and action research with five organizations that work with youths. We used document analysis, interviews with professionals and youths, observations, and research by youngsters themselves, to analyse how professionals in these organisations create space for (transformative) agency of young people. We show how, besides strengthening adolescents' self-confidence and competences, raising consciousness of injustice and imagining a better world are part of their approach, sometimes resulting in action. We discuss the mechanisms of adapting, inviting, challenging and agenda setting that the youth professionals used in varying degrees and various ways, the challenges that they encountered when trying to support transformative agency and the unexpected instances of agency that occurred during the action research.

EXTENDED SUMMARY

Background

A perceived decline in students' motivation for learning at school in secondary education has spurred an interest in student agency among educational researchers and practitioners. Against this background, student agency is conceptualized as ownership of the learning process, in the sense of self-regulation and setting and pursuing one's own goals (Van Halem, 2022; Vaughn, 2020). Conceptualizations involving transformative agency (Sannino, 2022; Stetsenko, 2019), that involve a

focus on people changing their life circumstances, including their direct environment and/or the wider society, and the notion that people are transformed themselves in the process of acting on the world, are less common in the educational context. However, in organisations that operate at the edge of education – youth theatre, homework support, life coaching, youth work at school – practices have originated that can be characterized as supporting transformative agency. In this paper we explore what schools can learn from such practices so that they can better support students in developing this type of agency. Since most of these organisations work in the physical school settings and some of them collaborate with teaching staff, we deem that there is high potential and great value in translating/adapting the acquired insights for formal education and school programs. We build on individual, relational, and transformative perspectives on agency. Individual perspectives contribute to our understanding of processes of goal setting, self-regulation and self-efficacy (Bandura, 1986). Relational/contextual perspectives show that agency can only be understood by focussing on how it emerges in interactions and by considering it in the social contexts that facilitate or hamper its occurrence (Charteris & Smardon, 2018; Eteläpelto, 2013). The transformative perspective that we assume, building on CHAT (Sannino, 2022; Stetsenko, 2019) and theories in social work (Lister, 2004) and youth work (Abdallah & Kaulingfreks, 2021), adds that agency also concerns imagining a different society and the possibility to collectively improve life circumstances..

Aims

The aim of this paper is to explore what schools can learn from other practices that support youths in developing (transformative) agency. This exploration is based on a study into five organisations that work with youth, focussing on the following questions: How do professionals create space for agency of youth, in particular transformative agency? How do they invite and challenge youths to work on their own skills and goals as well as change in their environment and/or society? To what extent and how can these insights be translated to the practice of teaching in schools?

Methods

In a first phase we conducted three case studies in which we collected data through document analysis, interviews with professionals and youngsters, observations, and research by youths themselves. A second phase entailed a collaborative action research, in which teams of researchers, professionals and youths in five organisations engaged in creating space for transformative agency for youth and studying this process.

Results

In the organisations we studied we saw how working with young people on improving themselves and improving the world can go hand in hand. Professionals endeavoured – in different ways – to harness young people’s self-confidence and competences. They differed in the extent to which they also focused on increasing youths’ consciousness of unjust circumstances and situations and the ability to imagine a better society. Principles in the professionals’ approach that we distilled in our analyses were adapting, inviting, challenging and agenda setting. Professionals carefully listened and were attentive in order to *adapt* their actions to the youths’ zone of proximal development. They created a setting that was *inviting* by investing in group cohesion and a good atmosphere. They *challenged* the participants to take the lead, and to explore how they could *put issues on the agenda*. And they worked on the competences, critical consciousness and creative imagination that young people needed for doing so. The results show that challenges like staff shortage, pressure to perform and a full programme may hamper attempts to create space for agency. However, we also saw

instances of young people unexpectedly showing agency, for example in one of the organisations where the group decided to terminate the assignment they were supposed to carry out for the city council and instead developed their own plan.

Conclusions

This study shows how agency in the sense of working on self-improvement and on a better world can go hand in hand. It contributes to insights in how schools can work on transformative agency of students by borrowing approaches from practices such as youth theatre, life coaching and youth work, and to translating these to the context of education.

How interaction with the participants is planned

We would like to engage in a discussion with the participants on our central question: how can schools support young people in developing transformative agency, and what can schools learn from other practices in this respect?

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272 Narrative as an enhancer of the development of children with Autism Spectrum Disorder

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Presentation: Poster presentation (presented in person at the congress)

Theme: Promoting inclusiveness in social practices

Keywords: Narrative Imagination Autistic Spectrum Disorder

SHORT ABSTRACT

This paper aims to investigate the interrelationship between narrating and imagining as an enhancer of the psychological development of children with Autism Spectrum Disorder. The study is based on Vygotsky's theoretical-methodological framework, especially his thesis on the social genesis of the development of higher psychic functions and the interrelationship between these functions. The central argument is that narrative, the symbolic sphere of language, mobilizes and resizes the whole complex functional system. The study provides data on Inácio, a 9-year-old boy with ASD, enrolled in the 3rd year of elementary school in a public school in the state of Minas Gerais, Brazil. The fieldwork took place in 2020, when schools were closed due to the coronavirus pandemic. The researcher held remote meetings via the google meet platform with the child, which were recorded and later transcribed. The transcripts were organized into two episodes which were analyzed in the light of the microgenetic approach. The results show that Inácio's narratives, in the context of collaboration with the researcher, mobilize higher psychic functions such as imagination, will and conceptual elaboration. Narrative is a complex activity that enhances child development, and, in this sense, there is a need to confront hegemonic discourses that limit infinite human potential, as advocated by Vygotsky in his studies on disability.

EXTENDED SUMMARY

Autism Spectrum Disorder (ASD) is recognized by the presence of a set of neurodevelopmental symptoms, with characteristics such as persistent deficits in communication and social interaction, accompanied or not by repetitive patterns of behavior, restricted interests and difficulty in using imagination in symbolic games (ILTCHENCO; RIBAS, 2022). Research in cultural-historical theory has investigated the conditions and possibilities for the development of children diagnosed with ASD (PEREIRA, 2022; NOVAES; FREITAS, 2019, SILVA, 2017, among others) and addresses child development, moving away from a view restricted to clinical symptoms - by which these children are commonly recognized - and looking at developmental potential with an emphasis on the particularity of imaginative functioning. These studies are concerned with understanding the child's effective modes of social participation and alternative forms of semiotic experience and creative activity. Based on the theoretical premise that imaginative functioning is not born with the child, but is constituted in the social relationships in which they participate (VIGOTSKI, 2009), these studies focus on the

imaginative play of children with autism and argue that, although the development of the imaginary situation does not occur in a similar way to what is observed in the play of children considered typical, children with autism reveal their imaginative functioning in other ways (SILVA, 2017; OLIVEIRA; LOPES, 2018) and in school contexts, the teacher's intentional action is essential to create situations favorable to the emergence of creative aspects involving imaginary make-believe situations. Bearing in mind that there are few studies exploring the imaginative possibilities of children with autism, the aim of this work is to investigate the interrelationship between narrating and imagining as an enhancer of these children's psychological development. Supported by the principle of interfunctionality (VIGOTSKI, 1995), we argue that narrative, the symbolic sphere of language, mobilizes and resizes every complex functional system. The narrative of children with ASD is a way of understanding their ways of imagining, feeling and dealing with their life stories, which is fundamental, especially for the inclusion of these children in school contexts. The study uses Vygotsky's theoretical-methodological approaches and was developed in the context of an empirical study that aimed to analyze the narratives of children with disabilities to understand the meanings that regular school has for them. In this paper, we present the data of Inácio, a 9-year-old boy diagnosed with ASD and enrolled in the 3rd year of elementary school in a public school in the state of Minas Gerais, Brazil. In terms of his schooling process, he was literate and keeping up with his class. The research was approved by the university's ethics committee and the ethical guidelines for research with children were followed (Sarmiento, 2018). The fieldwork took place in 2020, when schools were closed due to the coronavirus pandemic. Thus, the researcher in charge held six remote meetings via the google meet platform with the child, which were recorded and later transcribed. During these meetings, the researcher and the child were at home. Inácio participated enthusiastically. During the meetings, the researcher proposed activities such as storytelling and creating imaginary situations. The transcripts were organized into two episodes which were analyzed in the light of the microgenetic approach (Góes, 2000). The results show that when Inácio narrates in collaboration with the researcher, he mobilizes his entire psychic development: imagination, emotion, will, conceptual elaboration - psychic functions that are intertwined in the systemic dynamics of the psyche. Through language, he chooses what he wants to narrate, creates situations, appropriates the researcher's ideas and inserts new elements into the narrative. His creative process is the result of his own or others' (social) experiences mediated by the sign. The analysis of the episodes allowed us to identify that the activity of narrating, by implying imaginative functioning, interferes with the whole complex functional system, affecting higher psychological functions in general. We found that storytelling is a complex activity that enhances children's development and we have listed elements that characterize this power: children with ASD use their imagination to re-elaborate their experiences through narrative; narrative is, par excellence, an activity oriented towards the production of meanings for others through engagement in fictional creation - and this is very important for children with peculiar development; the child with ASD, when narrating, is placed in a position that challenges them to act beyond what they do on their own, as it promotes the emergence of the zone of proximal development; narrative mobilizes emotions and, finally, narrative, being a work with words, involves various levels of conceptual elaboration, broadening the child's ways of thinking, feeling and acting about reality. In conclusion, we reflect on the need to confront hegemonic discourses about the limitations of children with ASD, shifting the debate to the infinite

human potential, as advocated by Vygotsky (1997) when discussing children with peculiar development.

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273 Brazilian students' narratives on the social function of school

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Presentation: Poster presentation (presented in person at the congress)

Theme: Promoting interaction in social practices

Keywords: cultural-historical perspective public school social function of the school

SHORT ABSTRACT

This study, which is part of a larger research project, analyzes the narratives produced by basic education students (12-15 years old) about their expectations of school. The students are from a municipal public institution in the state of São Paulo, Brazil, and come from contexts of social vulnerability and low economic power. The study aims to identify the meanings that students give to school. It is theoretically and methodologically based on the cultural-historical perspective, considering the thesis of development and the role of school education in the process of human development. Thus, it is based on the assumption that education plays a role in transforming the concrete living conditions of students, and that the school becomes a promoter of these transformations. The study is part of an investigative project whose methodology is based on research-action-training, involving public school teachers and researchers linked to a university. In this text, the data was produced through narratives written by the students, following a request from their teachers, on the theme of "what they expect from school". These narratives were taken by the researchers for analysis, guided by Vygotsky's presuppositions: a dialectical approach that seeks to explain and interpret texts, taking into account the concrete conditions of their production. The narratives show that the students value school education and its importance for the future as a means of social transformation. They highlight the demands for basic living conditions and access to cultural goods, from the perspective of human rights.

EXTENDED SUMMARY

This paper is part of a research project (funded by CNPq) on school literacy practices in the final years of elementary school, involving students aged between 12 and 15. The project is based on a partnership with a public school in a municipality in the state of São Paulo, Brazil, with the aim of collaboratively building literacy practices that make it possible to overcome students' conceptual gaps, from a transformative perspective (Stetsenko, Arieivitch, 2014). Three teacher-researchers from a community university held monthly meetings with eight teachers from the school in 2022 and 2023 in order to help them face the challenges they encounter in everyday school life, especially in the post-pandemic scenario that exposed the socio-economic inequalities of developing countries like Brazil. The movement of the group consisted of: sharing oral and written narratives produced by the teachers about their practices and some readings and discussions of texts on the themes that emerged from the narratives. At the start of the work, the teachers recounted the difficulties they encountered when they returned to face-to-face classes after the pandemic and how demobilized the students were for school activities. Collectively, the group agreed to ask the students to produce a

written narrative that addressed what they expect from school. The narratives produced showed points of convergence in their expectations and were taken as data for analysis. In this sense, this study aims to identify, in these narratives, the meanings that students give to school and, based on this, to reflect on the social function of school for students from contexts of social vulnerability and low economic power. The research is based on the theoretical-methodological assumptions of the cultural-historical perspective, especially the social thesis of development and the role of school education in the process of human development (Vygotsky, 1993,1995). It is based on the assumption that education has the role of transforming the concrete living conditions of students and the challenge is to "[...] take into account the history of the environment and manage to implant in the child an awareness of their reality and the real possibility of overcoming the limitations it imposes on them" (Pino, 2003, p. 60). From this perspective, the school has the social function of giving students access to cultural development and, with this, promoting transformations in the concrete conditions of existence, especially for students marked by social inequalities. The analysis, based on the dialectical approach, sought to explain and interpret the texts, taking into account the concrete conditions of their production. In the narratives produced by the students, some meanings were identified for school: valuing school knowledge and demanding basic living conditions (food, hygiene) and access to cultural goods (material and immaterial, such as scientific concepts, technology, the arts, etc.), from the perspective of human rights. The students value school as a place to study and learn new things in order to prepare for the future. As one of the students wrote: "I study because I don't have a choice, but I kind of like it and I know I have to study to get a good job and do well in life, fulfil my dreams and help my family". A narrative that is probably inspired by the discourses circulating in the school itself about the relationship between study and the future, but there is a concern in this writing that goes beyond what is expected of a teenager: to be able to help the family in the future. For these students, school is also a place to socialize, where they can safely meet their friends, talk, work in groups, "a place to make friends". This is yet another characteristic of students who live on the outskirts of the city, in socially vulnerable areas and where school is the only space for social interaction. As Smolka (2000, p. 30) states: "It is not what the individual is, a priori, that explains his ways of relating to others, but it is the social relations in which he is involved that can explain his ways of being, of acting, of thinking, of relating". The students' narratives reveal their real living conditions and their expectations of school and their future. The great challenge facing school education is to consider the history of the students, interwoven with the history of their social environment, and to seek ways of transforming it.

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274 Youth as Decision Makers in School Transformation

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Presentation: Symposium (90 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Youth Formative Interventions Schools Imagining future worlds; formative interventions

SHORT ABSTRACT

Increasingly, CHAT scholars of education have recognized the importance of centering the stakeholders most affected by oppressive educational policies and practices, namely youth facing injustice along intersecting lines of race, disability, language, sexuality, gender, nationality, ethnicity, social class, and/or religion. We add to this research by centering youth who face injustices in four intervention studies from the United States focused on imagining improved future schooling environments. This symposium aligns with the ISCAR subthemes of “promoting inclusiveness in social practices,” and “imagining future worlds.” Paper 1 focuses on a formative intervention in which bilingual Hmong and Latinx young people participated in learning ecologies redesigned to recognize and sustain their languages, cultures, and visions for justice. Paper 2 explores an Indigenous Learning Lab in which Indigenous youth participants contributed vital perspectives that forced the adult members to reckon with the harms perpetuated by adults and the discipline system. Paper 3 examines how adults mediated the inclusion of students’ voices in a Learning Lab to address discrimination and harassment in a predominantly white school district. Paper 4 examines a school-based project during the pandemic, focusing on the challenges of achieving inclusive and equitable youth-adult collaboration via Zoom. All together, these transgressive studies aimed to create an emancipatory space for future-making in which youth of color and adult allies work together to design and enact change. This session aims to facilitate scholarly dialogue on how to amplify the voices of youth of color using emancipatory processes to disrupt intersectional marginalization perpetuated in school systems.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This presentation focuses on a summer youth program designed for bilingual Hmong and Latina/o/x high school with and without disabilities that we called GANAS (*Gira Académica para Nuestros Alumnos Sociocríticos*). Guided by cultural historical activity theory (CHAT), we highlight how CHAT

can be employed as theory, method, and praxis to redesign learning ecologies that allow bilingual immigrant youth to integrate their past, present, and future selves in the learning process. We ask: In what ways did GANAS, as a formative intervention, allow Hmong and Latina/o/x bilingual youth with and without disabilities to rewrite educational and/or social inequities they experienced and re-envision educational systems through *testimonio* writing? As theory, CHAT informed how we conceived of GANAS as a formative intervention that introduced students to the concept of *testimoniando*. As method, CHAT informed our approach to data analysis of youth testimonios by attending to shifts in student perceptions of self, school, society, and inequity across three time points (past, present, and future). As praxis, CHAT created the conditions for an activity system in which students could bear witness to one another and overcome individual experiences of injustice toward cultural thriving and collective flourishing. In conclusion, we find that use of testimonios as a pedagogic tool to link temporal activity systems was an effective strategy for facilitating new understandings of education inequities and recentering linguistic and cultural repertoires of knowledge among Hmong and Latina/o/x youth.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

Bilingual Hmong and Latina/o/x youth with and without disabilities in the United States (US) often experience very remedial forms of education, where they are positioned as chronically underperforming (de Brey et al., 2019). Often, the source of this underperformance is framed in terms of individual deficits rather than through an understanding of the many injustices these youth contend with as they navigate educational systems not designed for immigrant, bilingual, non-white, or non-neurotypical students. Guided by cultural historical activity (CHAT), this study highlights a summer program that *re-organized* a learning ecology (Gutiérrez & Jurrow, 2016) specifically for bilingual Hmong and Latinx youth. The GANAS (*Gira Académica para Nuestros Alumnos Sociocríticos*) summer program was a four-week virtual program that used *testimonio* as a tool for Hmong and Latina/o/x high school students to reflect on their experiences historically, engage in meaning-making, and re-envision transformative social change (Delgado Bernal et al., 2012). In the context of GANAS, *testimonio* can be conceptualized as an approach to activism with an overtly political intent rooted in the experiences of subjugated individuals (Delgado Bernal et al., 2012). By focusing on Hmong and Latina/o/x youth we sought to foster the development of sociocritical literacy (Gutiérrez, 2008) among student subgroups who have not been historically placed at the center of knowledge production in US schools.

Aims

This presentation aims to demonstrate how CHAT can be used to design a formative intervention study that allows marginalized youth to historicize their educational experiences and draw upon their cultural and linguistic repertoires of knowledge to engage in future dreaming for education systems rooted in intersectional equity. We explore this framed by the following research question: In what ways did GANAS, as a formative intervention, allow Hmong and Latina/o/x bilingual youth with and without disabilities to rewrite educational and/or social inequities they experienced and re-envision educational systems through *testimonio* writing?

Methods

Over 57 hours of video data were collected from the program, including participant artifacts, 32 pre- and post-interviews from the youth participants and their parents, and 8 youth testimonios. Data were analyzed collectively by the GANAS team, consisting of two Chicana faculty members, two research assistants, and two instructors (all of whom were bilingual) using video-informed ethnographic methods (Erickson, 1986). Data analysis included inductive coding and was collaborative and cyclical across biweekly research team meetings as a form of peer debriefing. It was accompanied by continuous discussions of researcher power and privilege in relation to the youth participants (The QR Collective, 2023). CHAT (Gutiérrez, Engeström, & Sannino, 2016) and theoretical principles of *testimonio* were critical to the research design and analysis. One aspect of CHAT relevant to this study was how people learn across interconnected systems through tool-mediated activity (Engeström, 2001). For this analysis we conceptualized testimonios as a pedagogic tool that connects learning across past, present, and future interconnected activity systems.

Results

Many educational spaces bring new instructional methods and fixes into the oppressive learning conditions, yet the very systems that disadvantage minoritized learners remain intact. In GANAS, as an education system, the learning ecology was reorganized through design and through in situ pedagogical co-constructions. The program, as an activity system, centered the linguistic and cultural lives of Hmong and Latina/o/xs youth as learners and became a mediator for *revisiting* inequities, *rewriting* through *testimonios*, *andre-envisioning* future possibilities through collectives. We present three illustrative participant cases demonstrating how youth revisited tensions and contradictions (past), used *testimonios* to rewrite new understandings of inequities (present), and applied those understandings to *re-envision* new possibilities (future). In this way, CHAT can be a portal to future spaces.

Conclusions

As a formative intervention, GANAS allowed bilingual Hmong and Latina/o/x youth to co-create new understandings of what it means to learn by engaging in testimonios that allow for cultural thriving and collective flourishing across past, present, and future timescales. We argue that testimonio writing functioned as a social justice tool for youth to gain and contribute new understandings of inequities that they and other collectives experience in US education systems.

How interaction with the participants is planned at the conference

After presenting the participant cases, we will invite the audience to discuss (i) how dominant approaches to literacy learning can be harmful to bilingual immigrant youth and (ii) share how they can respond to the youths' calls to action (i.e., future dreaming) through their own work.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

The United States of America was founded on settler colonialism, slavery, and capitalism. As a settler colonialist state, U.S. has striven for the dissolution of Indigenous societies by establishing a colonial society on seized land with the elimination of Indigenous people. Schools have been sites of Indigenous suffering as system of alienation and exclusion. Indigenous youth receive disciplinary actions (e.g., detention, suspension) more frequently and more severely for more subjective reasons as compared to their White counterparts. Overrepresentation of Indigenous students in school discipline is a materialized outcome yielded through the operation of an exclusionary and punitive

system. The histories, cultural practices, interests, and ingenuity of indigenous youth have been excluded from schools' problem-solving and future-making activities. This paper presents a four-year-long formative intervention, Indigenous Learning Lab, conducted at rural high school serving students from Anishinaabe nation. In Indigenous Learning Lab, Anishinaabe youth designed a new culturally responsive behavioral support system with Anishinaabe teachers, parents, and tribal leaders and White-settler school leaders and teachers. The purpose of this study is to examine how Indigenous youth participated in an inclusive systemic design process facilitated through the method of double stimulation and the principle of ascending from the abstract to the concrete.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

The colonialist and white supremacist foundations of the education system in the U.S. pervades public schools today. When schools undertake change efforts to address anti-Indigeneity in school discipline systems, attendance codes, and teacher-student relationships, young people are rarely included in conversation or policymaking, despite their lived expertise of school systems.

Aims

To counter both racism and adult-centered decision-making in schools, we include Indigenous youth in a research-practice partnership, Indigenous Learning Lab. Young people contribute systemic analyses, valuable expertise, and creative problem-solving to school change efforts. However, there are barriers to young people's participation with adult educational stakeholders related to power dynamics, time, and voice. This longitudinal systemic transformation study aimed to facilitate Indigenous youth's participation in whole school change at a rural high school.

Theoretical Framework

Indigenous Learning Lab is grounded in Cultural-Historical Activity Theory and Decolonizing Epistemologies (Engeström, 2016; Tuck & Yang, 2014; Smith, 2012). Our approach to collaboration with Indigenous youth builds upon asset-based understandings of Indigenous youth (Cajete, 1994) and leverages university-school-community partnership toward "resistance, reclaiming, recovery, reciprocity, repatriation, [and] regeneration" (Tuck & Yang, 2014, p. 244).

Methods

Indigenous Learning Lab featured a four-year collaboration among Indigenous youth, educators, parents, community members as well as White-settler school administrators and teachers between 2019 and 2023. Indigenous Learning Lab is a formative intervention (Sannino, Engeström, & Lemos, 2016). It followed the method of double stimulation (Vygotsky, 1997) and the principle of ascending from the abstract to the concrete (Il'enkov, 1982). Indigenous Learning Lab members participated in video-recorded Learning Lab sessions and follow up interviews. Six Anishinaabe students participated in the study as Indigenous Learning Lab members.

Results

Indigenous youth participants contributed vital perspectives that forced the adult members to reckon with the micro- and macro-level harms perpetuated by teachers, disciplinary staff, and the reactive and punitive discipline system. Students contributed solutions rooted in their daily experiences in various school spaces, which grounded the group's systemic school change efforts in relationship-building among teachers and students, support for 8th-graders' transition to the high school and infusing disciplinary conversations with humanity. Indigenous students refused to be understood as a

monolith and shared diverse perspectives on the issues facing their peers, community, and school. Some developed confidence and leadership within the school. Others, who had adopted more assimilatory approaches to surviving school, critiqued those students who did not “behave.” It was difficult to sustain student participation in meetings during the COVID-19 pandemics as the Learning Lab members navigated coordinating across multiple schedules, internet connectivity, power dynamics among administrators and students, and youth silence and refusal. Creating small, affinity group discussions with researchers including Indigenous scholars or trusted teacher protected space for Indigenous students to share freely and participating with a parent or trusted teacher or mentor also supported student attendance. As a result, Indigenous youth were able to include their histories, cultural practices, goals, and ingenuity in the newly designed system that has been used at the school since 2021. Once the three Indigenous students who participated in the design of the new system graduated, they recruited three new Indigenous students to participate in Indigenous Learning Lab which oversaw the implementation of the new system.

Conclusion

To offset the cumulative effects of colonial harms and dispossession of Indigenous youth in both education systems and school change efforts, Indigenous Learning Lab facilitates a collaborative approach to whole-school change that includes Indigenous student expertise and imagination in the creation and implementation of a decolonizing school system.

How interaction with the participants is planned

We will present our study visually with several photos from the research site, its history, and our meetings and observations. We will invite participants to discuss the facilitation of transformative and sustained participation of youth in school’s decision-making process, especially in schools serving indigenous communities.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Traditionally, adults’ perspectives have been privileged over those of youth/students. In this paper, we present a Learning Lab intervention in a predominantly white-school district in the U.S wherein students, parents/community members, administrators and teachers co-designed a protocol for addressing discrimination and harassment. This protocol will guide how educational professionals, students, and parents/guardians navigate instances of discrimination and harassment. The Lab comprised 16 individuals with diverse roles. Grounded in the cultural-historical activity theory (CHAT), the design of the Learning Lab and the intervention aimed to foster a democratic conversation amidst an established power hierarchy. By combining CHAT with the framework of rightful presence, this paper explores how Lab members negotiated power imbalances to mediate the inclusion of students’ voices in the Learning Lab process. The data analysis revealed that members consistently challenged the power hierarchy throughout the Lab sessions by: 1) advocating for the redistribution of authority/power, disrupting the normative expert/novice relationalities during Learning Lab Sessions; and 2) acknowledging students’ everyday struggles in reporting incidents of discrimination. The supports from adult Lab members shifted the Lab from being adult-centered to student-centered, empowering students with rightful presence and agentic capability, significantly influencing the design of the protocol.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

As multiple stakeholders navigate institutional boundaries, roles, and expertise to collectively transform the school system, the inclusion of authentic student voices in educational decision-making processes aimed at advancing equities remains rare. It is critical for adults in authority (e.g., researchers, parents/community members, and educators) to ensure the rightful presence and inclusion (Calabrese Barton and Tan, 2019; 2020) of students, particularly those from historically marginalized backgrounds in decision making process.

Aims

This paper presents one year of Learning Lab intervention (Bal et al., 2014; 2018) implemented in the Aleph School District (ASD) in New England, U.S. The intervention involved a collaborative effort among parents/community members, students, school and district-level administrators, and teachers to collectively devise a protocol for addressing incidents of discrimination and harassment—a persistent issue within the school district. ASD is situated in a predominantly white, middle-to-upper-class town in New England, renowned nationally for academic excellence. Despite this reputation, ASD has grappled with various inequity issues, including the underreporting of bias-based incidents of discrimination and harassment. The implementation of the Learning Lab in ASD signified the school district's commitment to addressing this ongoing challenge. In partnership with ASD, the Learning Lab initiative was informed by existing literature that highlights the complexities of collaboration between adults and students, navigating perceived hierarchies and dichotomies such as expert/novice, insider/outside, and guest/hosts to disrupt power relations (Calabrese Barton and Tan, 2019; 2020; Bertrand et al., 2017; 2023). The overarching research question guiding this paper is: How did the Lab members in ASD negotiate power imbalance to mediate the inclusion of students' voice in the Learning Lab process?

Conceptual framework

The design of Learning Lab intervention is grounded in the cultural-historical activity theory (CHAT; Bal et al., 2012; 2018; Engeström & Sannino, 2010; Sannino et al., 2016). In this paper, I integrated CHAT with the concept of rightful presence (Calabrese Barton & Tan, 2019; 2020) to investigate how Learning Lab members facilitated a meaningful inclusion of students in the midst of power imbalances.

Methods

The Learning Lab intervention in ASD took place during 2022/2023 academic year. Data for this paper was collected from 18 bi(weekly) in-person Learning Lab meetings. Lab members consisted of 3 students; 3 parents/community members; 2 teachers; 2 district administrators; 6 school administrators. All meetings were video/audio recorded and was transcribed for the purpose of data analysis.

Results

Throughout the first half of the Lab, members struggled to center students voice amidst domination of adults in authority who held a perspective as “expert” and “hosts” given their roles in the school district. Such perspectives hindered democratic participation of Lab members, most importantly students. However, adult members such as teachers and parents/community members collectively challenged the power hierarchy without centering themselves in the process. The advocacy remains student-centric (Reznik et al. 2023; Tofel-Grehl 2023). They did so by: 1) requesting for redistribution

of authority/power by disrupting the normative expert/novice relationalities during Learning Lab Sessions; 2) Acknowledging students everyday struggles in reporting discriminatory-based incidents. This strategy is an act of forming allyship with the students and gains their trusts. The mediation from the adults in authority shifted the Lab from adult-centered to students-centered wherein students gained their rightful presence and agentic capability which in turn immensely shaped the design of the protocol (Calabrese Tan & Barton, 2020).

Conclusions

Power hierarchy is inevitable in any organization, educational institutions included. Intentional efforts and commitments are critical to dismantle such dichotomy between “outsider/insider”, “expert/novice” that further excludes historically marginalized students and families from decision-making process in (local level) policies that impact their day-to-day life (Calabrese Barton & Tan 2019; 2020). Students are legitimate knowledge creators toward an equitable school system.

How interaction with the participants is planned

Following the presentation of the Learning Lab in GSD, we will invite audience to discuss: What are some systemic challenges that hinder the authentic inclusion of student voices in educational decision making?

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

This paper focuses on a group of high school youth and three adults in the United States who worked together via Zoom in the 2020-2021 academic year to research students’ and teachers’ experiences in the pandemic and envision improved online schooling practices. This paper builds on a growing body of research documenting the challenges of cultivating youth-adult partnerships across intersecting hierarchies related to age, race, disability, sexuality, gender, social class, and more. Specifically, we focus on the added challenge to achieving inclusive and equitable youth-adult collaboration when meetings occur in an entirely online space. As cultural-historical activity theory scholars have shown, transforming an activity system toward justice requires equitable and collaborative dialogue across socially constructed, intersecting axes of power. This understanding points to the profound implications of Zoom and similar platforms mediating collaboration. Thus, we ask the following research question: How does meeting via a video conferencing platform influence youth-adult collaboration across age differences and other intersecting hierarchies? We found that the use of Zoom placed power differences in relief, thereby adding a hurdle to equitable collaboration. However, we also show how youth and adults agentively created opportunities to navigate this hurdle. Ultimately, this paper illustrates the profound implications of the use of video conferencing technology for equitable collaboration, which is the key to justice-oriented transformation of activity systems.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Aims

This paper focuses on a group of high school youth and three adults in the United States who worked together via Zoom in the 2020-2021 academic year to envision better online schooling practices. This paper builds on a growing body of research documenting the challenges of cultivating equitable youth-adult collaboration across intersecting hierarchies related to age, race, disability, sexuality, gender, social class, and more (Brown, 2010; Hillier & Kroehle, 2021; Lac & Fine, 2018; Salisbury et al.,

2020; Welton et al., 2015). Specifically, we focus on the added challenge of collaborating entirely via Zoom. We ask: How does video conferencing influence youth-adult collaboration across age differences and other intersecting hierarchies?

Conceptual Lens: Equitable Collaboration

In CHAT, collaboration is a central aspect of expansive learning—the co-creation of new concepts, often via formative interventions, toward the transformation of activity systems (Engeström, 2011; Engeström & Sannino, 2017; Haapasaari et al., 2016; Masilela & Olvitt, 2020). Some CHAT scholars have argued that the co-generation of new concepts should entail equitable and decolonizing forms of collaboration (Bal & Bird Bear, 2023; González & Artiles, 2020; Ishimaru, 2020; Ko, et al., 2023). With this in mind, we use as our conceptual lens Ishimaru’s (2020) understanding of “equitable collaboration,” a process that aims to “foster solidarities amid difference toward community-determined educational justice and well-being” (p. 4). This definition points to the need to address power differences and re-mediate relationships in CHAT-informed research (Bang & Vossoughi, 2016).

Background

Sandoval School, the focus of our research, switched to online, Zoom schooling in the pandemic. All the students at Sandoval are students of color and most are working class. The majority of the school adults are people of color. During the pandemic, the school principal, driven by the tenets of participatory action research, launched an advisory board with more than six high school students. This group conducted survey and focus group research to understand students’ and teachers’ experiences in the pandemic and improve online schooling.

Methods

Data collection began in October 2020 and concluded in August 2022. We conducted 48 audio-recorded and transcribed interviews with 39 participants. We conducted 36 meeting observations, including 18 advisory board meetings, and took field notes for each of them. Finally, we collected more than 70 artifacts.

The authors identify as cisgender women. Two are women of color and one is a white woman. Two of us directly participated in the student advisory board.

Results

We found that the use of Zoom added challenges to youth-adult collaboration that would not have existed otherwise. In addition, we found that participants agentively navigated the barriers of Zoom in creative ways.

In most of the advisory board meetings, youth and adults used different modes of communication. Youth almost always had their cameras off, and they communicated using a combination of typing into the chat and speaking verbally. Youth cited noise in their homes and discomfort with the camera. In contrast, the three adults almost always had their cameras on and communicated mainly verbally. They joined the meetings in designated and mostly quiet spaces in their homes. In general, discussions entailed one or more of the adults making comments, asking questions, or making requests, and the youth responding. Though both youth and adults had the same communication tools at hand, the use of these tools differed substantially.

However, despite Zoom challenges, youth consistently expressed their views, for instance advocating for changes to online schooling approaches to decrease their fellow students’ hardships. In addition, both youth and adults found agentive and creative ways to navigate the barriers of Zoom in ways that

advanced possibilities for equitable collaboration. For instance, youth taught the adults Zoom chat/texting language and the adults sometimes communicated via the chat.

Conclusions

Our findings suggest that the mediation of video conferencing in joint work may foreground existing hierarchies and create an additional barrier to equitable collaboration. In our study, the evidence points to the salience of age, institutional position, and social class. We conjecture, though, that other axes, such as related to race, disability, and language, also played a role. In addition, our findings show that possibilities for equitable collaboration can expand when youth and adults creatively navigate the barriers of Zoom. This study is significant in that the use of video conferencing continues in popularity and equitable collaboration is, arguably, a necessary ingredient for the justice-oriented transformation of activity systems.

Interaction with Conference Participants

The authors will provide an overview of the paper in a presentation format. This will be followed by asking attendees to form groups to discuss 1) the ways that meeting via Zoom may have (further) challenged possibilities for equitable collaboration across power differences in their contexts and 2) envision strategies to disrupt these power differences in Zoom meetings. The authors will then facilitate a whole-group conversation around these envisioned strategies.

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275 Co-teaching: Supporting toddlers' mathematics concept learning in joint play

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Co-teaching Joint play Mathematics concept learning

SHORT ABSTRACT

It is based on the published paper in British Journal of Educational Studies in 2024: Supporting Young Children's Exploration of Mathematical Concepts: Co-teachers' Involvement in Joint Play.

There has been a major international focus on the education and care of toddlers. Empirical studies show that adults' role in play with toddlers is to set up a safe play space and observe from a distance. However, less attention has been given to the role of teachers in supporting conceptual learning in joint play. This paper takes a cultural-historical theoretical perspective and draws upon the concepts of play and subject positioning in play to investigate how co-teaching promotes toddlers (2-3 years old children)' joint play and their learning of mathematical concepts. Visual data of a group of toddlers playing with two teachers is analysed to explore how they apply co-teaching pedagogy and take dynamic pedagogical positions to support mathematics concept learning in joint play. The findings show that the two teachers collaborated to encourage the toddlers to explore mathematical concepts in joint play. We argue that co-teaching should be promoted to support collective play, as two teachers can work collaboratively to meet the toddlers' challenges and needs and support their mathematics concept learning. With co-teaching by paired teachers, toddlers' free play becomes collective and play rules are regulated, helping children use mathematical concepts to deepen their play.

EXTENDED SUMMARY

Background

Play supports children's conceptual learning and development (Vygotsky, 1966; Li, 2022, Fleer, 2011). There is a shared understanding among scholars that some characteristics of play, such as imagination, creativity, interactions with peers and adults and communicating and negotiating their play rules, can contribute to children's mathematical thinking and problem-solving (Ginsberg, 2006; Marcus et al., 2016; Li & Disney, 2021; Trawick-Smith et al., 2016). Furthermore, there is a need to explore how teachers can actively participate with groups of toddlers in play in supporting children's engagement with mathematics (Tirosh et al., 2020). Thus, a key question for early mathematics education needs to be addressed, is how to support toddlers' learning of mathematics concepts, thus mediating mathematical meaning and thinking (van Oers, 2010; Bjorklund & Palmer, 2022).

Aims

In this study, we draw upon Vygotsky's cultural-historical theoretical concepts of play (1966) and Kravtsov and Kravtsova's (2010) subject positioning in play to investigate how pair teachers

collaboratively co-position and teach together while being inside children's play as play partners to support children's mathematics concept learning and increase the meaningfulness and quality of their engagement in play.

Methods

A cultural-historical theoretical framework is drawn upon to investigate toddler's engagement in play and concept learning and the pedagogical interactions with 6 teachers within their play over a seven-month period. The wholeness approach (Hedegaard, 2008) was applied to interpret toddlers' play and their engagement with peers and teachers, which takes into consideration the children's perspectives, including their body language, gestures, choices, initiatives and movements, and their teachers' pedagogical choices, positioning, and teaching agendas in play. Six teachers from two classrooms and 29 children under three years old attending a long day-care centre in Melbourne, Australia, were involved in this project. This paper focuses on one group of children, who were 2–3 years old and two teachers (Deb and Sally). Full informed consent (including using the recorded images in the research journals/books) was obtained from families, teachers, and the directors of the long day-care centre for the use of data collected in the field of education and research. Pseudonyms were applied to protect the privacy of the participants.

The study included data from video observations of toddlers' interactions with peers and their teachers, focus group discussions between the teachers and researchers in relation to play and learning, and video-prompted reflective interviews with 6 teachers.

The data were analysed by drawing upon Hedegaard's (2008) wholeness approach that suggests three levels of video interpretation: common-sense interpretation, situated practice interpretation, and thematic interpretation. All three levels of interpretation are dialectally interrelated, and the analytical process is carried out progressively in a spiral way (Li, 2014).

Results

The analysis draws upon the video of the morning outside play time as part of the play-based learning program. By investigating co-teachers jointly playing with a small group of toddlers in a game of 'What's the time, Mr Wolf?', this study indicates co-teaching with dynamic pedagogical positions might advance toddlers' mathematical concept exploration and take their play to a more complex level. The group of toddlers demonstrated the challenges of playing the game 'What's the time, Mr Wolf?' while the teacher, Deb, played the wolf. Teacher Sally was invited to join the game, thus supporting teacher Deb in playing with the group. We also found that co-teaching relations in play are shaped by meeting children's play needs and intentions, which also allows teachers to assess children's ZPD and shift the pedagogical positions in intentional teaching. Mathematical language such as "Not dinner time yet, wait until they are CLOSER" was introduced, regulated by the co-teachers and represented by the toddlers through imitation. The toddlers were invited to use a one-to-one correspondence counting principle (one step per each number counted), and they used it progressively, showing their growing competence in associating the steps with corresponding values of time. In this instance, through the co-teachers' intentional actions, the toddlers realised the mathematical meaning of their own actions by counting their steps and calling the numbers/time. Thus, intentional mathematics teaching can be meaningfully merged into joint play when new developmental conditions are formed by co-teachers' intentional responses to toddlers' challenges.

Conclusions

Through the cultural-historical analysis of one joint play, it is argued that co-teachers can work collaboratively to create conditions to orient toddlers to explore mathematical concepts and rules in joint play. We argue that the co-teaching approach should be promoted to support toddlers' collective play in our institutional practices, as two teachers can work collaboratively by taking different pedagogical positions to support the diverse learning needs of children engaged in mathematical concepts exploration.

How interaction with the participants is planned

We will invite the conference audience to discuss the following reflective questions.

How do you see toddler's play by taking cultural-historical perspective?

How do you think teachers' roles in supporting toddlers' mathematics concept learning in play?

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276 Excessive entitlement: a novel lens to understand and nurture equity and human flourishing

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Presentation: Workshop (90 minutes)

Theme: Imagining future worlds

Keywords: Excessive entitlement CHAT human flourishing

SHORT ABSTRACT

Excessive entitlement is the inconsistency that arises in the gaps between who one thinks they are but are not. An unawareness of this inconsistency gives rise to a sense of arrogance making one hold unreasonable expectations of both the self and others. An example is a teacher who expects students to perform well regardless of the quality of their teaching. “Excessive teacher entitlement” is a fledgling theme in teacher education that I came to while trying to grasp a teacher paradox which was gnawing at me for decades in my work with teachers—the inconsistency among teachers between their good intention to serve all students and their unreflective scripted practice that did not meet the learning needs and preferences of their culturally diverse students. International research piloted to study this phenomenon showed its ubiquitous presence in schools and universities vitiating workplace relationships and learning. However, these findings are not used to blame teachers per se. Instead, a CHAT framework is used to study the phenomenon in its historical and socio-cultural embeddedness and understand how it mediates teacher intransigence. This workshop focuses on its pernicious influence on social relationships, learning and wellbeing in the workplace. Through thought provoking episodes and questions the audience is invited to uncover and name the sources of excessive entitlement that they experience in the workplace, both as victims and victimizers. This cathartic process is meant to make participants thoughtful about social and pedagogic relationships for student flourishing and imagine possible futures to promote social wellbeing

EXTENDED SUMMARY

Background and purpose of the workshop

Excessive entitlement is the inconsistency that arises in the gaps between who one thinks they are but are not. An unawareness of this inconsistency gives rise to a sense of arrogance and deservingness making one hold unreasonable expectations of both the self and others (Author et al., 2019; Author, forthcoming). A typical example is an English teacher I was working with and who expected students to perform well regardless of the quality of her teaching: *After teaching, explaining ...I ask questions, make them repeat answers. I make them write in class and ask them to write again at home. After all this, I ask them to answer the test, I don't know what happens. They don't remember the answers. I don't know what else I can do. I think I'll have to open their heads and pour it in* (Author et al., 2019, p.10).

“Excessive teacher entitlement” is a fledgling theme in teaching and teacher education that I came to while trying to grasp this teacher paradox which was gnawing at me for decades in my work with teachers— Why are teachers not open to learning and change despite being overly concerned about the success in school and life of the multiculturally diverse students they teach? What prevents them from being flexible, adaptable, and responsive to the inclusive needs of their students in rapidly changing educational, social, environmental, and technological contexts? Why do they blame students, parents, or administrators for their own failures or shortcomings?

International research piloted to study this phenomenon of excessive entitlement in schools and universities showed its ubiquitous presence (Author & Craig, 2021). In these studies, excessive teacher/faculty entitlement manifested itself in diverse forms—a lack of self-awareness, tendency to hold on to inherited script, closed to other points of view/worldviews (including importantly of students), externalising blame, professional jealousy, competitiveness and aggression hampering learning and relationships in the workplace and the health of the institution. However, these findings are **not** used to berate teachers, but to gain an empathetic understanding of them and the complexity of their work and seek effective ways to control the triggers of excessive teacher/faculty entitlement in educational institutions.

The pervasive feelings of deservingness and the exaggerated expectations that characterize excessive entitlement are seen largely as a personality vulnerability in mainstream psychology (Grubbs & Exline, 2016). In teaching and teacher education, this behavioral view of the problem gives rise to a partial and deficit view of teachers and educators (Author, 2021; Forthcoming) and serves to reinforce the systemic narrative that legitimizes the neoliberal emphasis on stringent outcome-based accountability of teachers and educators, curtailing their autonomy (Mikser & Goodson, 2020). The purpose of this workshop is to use the concept of excessive entitlement to work with rather than undermine teachers and educators. Therefore, to gain a comprehensive understanding of the phenomenon, this workshop turns to CHAT. CHAT provides a sound basis for understanding and analyzing the phenomenon of excessive teacher/faculty entitlement in all its historical, cultural, social embeddedness and expose the system (e.g., neoliberal hold on education among other cultural historical ills—power, domination, racism, colonialism and so on) and the social relationships (e.g., a 'me-centered' view of the world) which mediate to produce the toxicity. This understanding is used to move toward humanising pedagogy by promoting transformative agency or “empowered entitlement” (Author, forthcoming) of the actors involved.

Structure of the workshop

The workshop will be in the form of a dialogue with the audience. Through thought provoking episodes and questions, the audience is invited to uncover and name the sources of excessive entitlement that they experience in the workplace, both as victims and perpetrators of it. Engeström’s model of CHAT activity system (1987/2015) as a network of relations between actors and artifacts will be used to guide the participants trace the emergence of excessive entitlement in themselves and others they interact with in their socio-cultural context. This cathartic process of becoming conscious of the tacit working of excessive entitlement, which is meant to make participants thoughtful about social and pedagogic relationships for student flourishing and social wellbeing, will be used to help the participants, working in groups, to ‘re-present’ relationships in new ways toward possible worlds where human flourishing can be nurtured.

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278 Intergenerational interactions and identity development in a Paraguayan heritage school in NYC

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Meaningful education

Keywords: Latinx identity Funds of identity Multigenerational learning

SHORT ABSTRACT

This paper aims to explore how the intergenerational interactions that take place in a Paraguayan weekend school shape the identity development process of community members as they navigate their identities as both Latinxs in the US context and Paraguayans. I examined intentional and incidental cross-generational practices and interactions at weekend school and the meanings that the participants give to these. For data collection, I conducted eight weeks of participant observation and nine semi-structured interviews. The concepts of multigenerational learning, funds of identity, and third space, all extensions of cultural-historical activity theory (CHAT), informed the observations and analysis. The results show that participating in this school shapes its members -not only students but also caregivers and teachers- cultural identities, and their understandings of it. This weekend heritage school provides its community with a space for cross-generational exchange of knowledge and for generating a sense of belonging and exploring the nuances of their cultural identities. Despite the hegemony of traditional and essentialist views of what Paraguayan culture is and what it means and looks like being Paraguayan, there are other narratives and experiences, more inclusive and flexible, in the school that defy this monolithic mandate. The community members of the heritage school do not define their identities in individualistic exercises but reflect on themselves as members of a group and base their analysis on interactional terms.

EXTENDED SUMMARY

The Paraguayan community is the second smallest national group in NYC, representing only 0.4% of the Latinx population of the city (NYC MOIA, 2021). Adding to this weak co-national presence in the city, most Paraguayans acquire Guarani as their first language (Hardin, 2022), creating a distance from other Latinx communities that bond over using Spanish as a shared language. La Escuela Paraguaya de Nueva York is a weekend heritage school located in Queens, New York City, and its mission is to transmit Paraguayan culture and Guarani and Spanish languages to children of Paraguayan heritage. Most of the literature on heritage schools is focused on issues of language maintenance and will other roles that these schools perform are understudied. Generally, heritage schools are the result of immigrant communities' collective effort, and these efforts represent a significant source of learning, cultural identity development, and cross-generational socialization that are not centered in the existing literature. By analyzing this, I expect to expand current understandings regarding the role that heritage schools can have regarding community building, and their effect on the students and their families' identities, sense of belonging, and educational vitality.

During the months of February, March, and April of 2023 I conducted ethnographic fieldwork at the school. The observation sites included classrooms, workshops organized by caregivers, parent-staff meetings, teachers' gatherings, and the school's open social events. I also conducted semi-structured interviews with three teachers, two staff members, and four caregivers. Eight of the interviewees chose to have the interview in Spanish or Jopará [a hybrid form of Guaraní and Spanish], and one participant chose to have it in English. Thematic coding was used for data analysis, identifying four major themes: multigenerational learning, languages use and cultural identity, transnational experiences, and sense of belonging. The coding and thematic analysis were supported using NVivo software. Approaching the phenomenon, I learned that thinking about identity from individual-centered frameworks cannot fully capture the experience of community-centered ways of identifying. The relational, historical, and cultural embedded frames provided by funds of identity (Esteban-Guitart & Moll, 2014) and multigenerational learning (Martínez-Álvarez, 2017) theories enable the analysis of this collectivistic community forms of socialization.

The results show that the heritage school provides its community a space for cross-generational exchange of knowledge and for generating a sense of belonging and exploring the nuances of their cultural identities. Despite the hegemony of traditional and essentialist views of what Paraguayan culture is and what it means and looks like being Paraguayan, there are other narratives, more inclusive and flexible, in the Escuela Paraguaya that defy this monolithic mandate. The community members of the heritage school do not define their identities in individualistic exercises but reflect on themselves as members of a group and base their analysis on interactional terms. The strategy of creating a community-led heritage school to maintain heritage knowledge generates opportunities for exploration and activation of the available funds of identity and the diversity of meanings that its members give to them.

For interaction with the participants during the presentation I plan to lead a mini trivia before the presentation. The questions included in the game will aim to prepare the audience to deconstruct the idea of "Latinos" or "Hispanics" as a monolithically built identity. It will focus on the linguistic and cultural diversity of the South American continent, centering the attention on the nuances of the Paraguayan cultural identity. This activity will be followed by a 1-minute reflection on the externally imposed identity categories that Latin American immigrants face when moving to the global north.

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280 The impact of a participatory art on community: artifacts and their functions in artistic activities

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: artifact participatory art expansive learning

SHORT ABSTRACT

Many art projects involve people who are not themselves artists to participate and collaborate with artists in creating artwork/performance art that connects to social issues. Bishop (2012) calls this trend “participatory art”. The aim of this paper is to explore how participatory art can contribute to the transformation of local community and how this can be done by considering the role of “artifacts” within Cultural-historical activity theory (CHAT). The research is based on a case study of an art project “Yame Art & Agriculture School (*Oku-Yame Gei Noh Project*)” held in a mountainous area in Japan. The main data include publications of the project and interviews. These data were analyzed in relation to the classification of mediated artifacts (Engeström, 2007) and class of artifacts (Wartofsky, 1979). The analysis illustrated that: (1) practitioners employed instruments (e.g., agricultural work, local tea) to solve their contradictions while progressing the activity; (2) these instruments had various functions and were used as “tool constellations” (Engeström, 2010); (3) the artwork/performance art that was created as the tertiary artifact acquired a strong relation to the function of secondary artifacts. For example, the group’s performance art came to be seen by the community as useful for promoting the local products of the area (i.e., tea). In sum, this case study revealed that although art is generally believed to not be so useful in real life, in reality people can come to use those artifacts in different ways than they originally had planned or thought possible.

EXTENDED SUMMARY

Background

Participatory art is a form of art practice which involves people who are not artists in its creation. Most of them relate to community and social issues. Participatory art got noticed and took place worldwide from the 1990’s. In Japan, there are also a lot of participatory art practices. In there, artists and participants recognize that participatory art causes good effects for local community, then local government support them financially. Basically, participatory art practice isn’t an activity for solving problems in community directly, because artistic activity set their object to making artworks itself. However, local governments tend to require these art practices to be useful to society. In this field, a problem is how to balance art’s function of useful tools for society and social criticality. For researching participatory art, some Japanese scholars try to depict a process and effect of participatory art projects within cultural-historical activity theory (CHAT) and expansive learning theory (Asano, 2022; Hashimoto, 2015; Ishida, 2023).

In relation to the artistic activity and CHAT, Engeström (1987/2015, p. 75) mentions that artistic activity is seen as one of birthplace of expansive learning and it is activity of producing instruments. He also argues that expansive learning requires tertiary instruments corresponding to “tertiary artifacts” (Wartofsky, 1979) that help people go beyond current activity (Engeström, 1987/2015, p. 97). According to Wartofsky who proposes the concept of class of artifacts, tertiary artifacts “constitute a domain in which there is a free construction in the imagination of rules and operations different from those adopted for ordinary 'this-worldly' praxis” (1979, p. 209). Tertiary artifacts are created by not only science but also art which is “humanizing praxis” (Wartofsky, 1979, p. 357) for human beings. Although some scholars using CHAT refer to the concept of tertiary artifact, they point out that its appropriation has messiness (Cole, 2019; Gillespie and Zittoun, 2010).

Purpose

The aim of this paper is to explore how participatory art can contribute to the transformation of local community and how this can be done from the view of “artifacts” by considering the role of artifacts within activity system models (Engeström, 1987). I will examine the following three questions. (1) What kind of tools/instrumental are employed by practitioners in participatory art practice? (2) What artifacts are being created through art practice? (3) How do the artifacts created in the art practice play their role in community? In this research, participatory art practice is seen as an artistic activity that produces tertiary artifacts in its process. In participatory art, the definition of participation is “people constitute the central artistic medium and material, in the manner of theatre and performance” (Bishop, 2012, p. 2).

Method

The analysis of this research was based on CHAT. The research stemmed from a case study of an art project “Yame Art & Agriculture School (*Oku-Yame Gei Noh Project*)” held in a mountainous area in Japan. The main data included publications of the project and group interviews. Then, activity system models of the project were formed from these data to clarify what tools were used in the artistic activity. Both tools and performance art which was the outcome of the activity were analyzed in relation to the epistemic levels of mediated artifacts (Engeström, 2007) and class of artifacts (Wartofsky, 1979).

Result and Discussion

The analysis illustrated that practitioners employed various instruments (e.g., agricultural work, local tea, form artist in residence) to solve their contradictions while progressing the activity. At the same time, concepts of the project gradually transformed over the years through creating artworks/performance arts. This shows that these instruments used as “tool constellations” (Engeström, 2010). Another finding is that the participatory art practice created tertiary artifacts as an outcome of the artistic activities. However, a tertiary artifact had an additional function as secondary artifact. Finally, local people created a new activity which involves people in wider areas, using the outcome which was produced in the participatory art project as a tool.

This case study revealed that although art is generally believed to not be so useful in real life, in reality people can come to use this artifact in different ways than they originally had planned or thought possible. Participatory art practice may contribute to changing local communities when art practice as a tertiary artifact transforms to primary or secondary artifacts which is used to other activities other than artistic activities. In addition, it is suggested that participatory art practice is an activity of not only instrumental production but also expansive learning because participants made

new instruments and gradually transformed their activity in the case study. This hypothesis requires further research in the future.

At the conference, the difference between expansive learning and participatory art practice, as well as the meaning and problems of dealing with artistic activities using CHAT, can be discussed with the audience.

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288 Activity Systems for Inclusive Education: A CHAT Perspective

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Presentation: Symposium (90 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: inclusive education CHAT disability

SHORT ABSTRACT

This symposium unites scholars from the fields of education policy, disability studies, inclusive education, and special education to explore the possibilities and challenges involved with creating inclusive learning environments for diverse students in local educational contexts across the United States (U.S.). Through this discussion, we—the authors—center the voices of students labeled dis/abled, parents, educators, and policymakers. We draw on cultural historical activity theory (CHAT) and critical theories (e.g., disability critical race theory (DisCrit)) to critically examine activity that fosters and inhibits inclusivity. We do this while addressing factors such as culture, history, and context. We are particularly interested in how these aspects interplay in both perpetuating and dismantling systemic inequities for people who, historically, have been denied access to equitable opportunities to learn and thrive. The first paper explores the transformative potential that arises when Black boys, often prejudicially labeled as dis/abled, are empowered to co-create a learning ecosystem that emphasizes literacy and identity evolution. The second paper delves into the profound challenges and latent conflicts involved in translating and enacting education policy in local contexts. The third paper exposes the contradictions related to equity and inclusion that are present in schools and classrooms that claim to be inclusive. Our symposium engages inter-presenter-audience dialogue to give space to the unique intersections and insights that arise from our work. After all papers are presented, the chair and discussant will facilitate this dialogue, focusing on ways participants can advance inclusive education in their local contexts for students labeled dis/abled.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This paper focuses on the author's use of critical qualitative methods to understand how the identities of a group of nine Black boys labeled dis/abled—from various states across the United States—mattered in the context of their schooling experiences. The author used disability critical race theory (DisCrit), Waitoller and Kozleski's (2013) notion of inclusive education, and cultural historical activity theory (CHAT) to design the study and analyze the activity within it. The author and his participants—the nine Black boys—co-constructed a community of practice on Zoom centered on literacy and identity development. The purpose of this paper is to reveal what is possible when geographically distant Black boys labeled dis/abled are brought together in a virtual space and

provided the opportunity to engage in communal activities that nurture literacy and identity. This paper also aims to underscore the importance of accepting Black boys for who they are without trying to repair them. The author found that, as he and the boys strove toward creating an inclusive learning space, the boys engaged in practices that exposed their thoughts, cultures, values, desires, needs, joys, and frustrations. Further, the author and the boys co-created a space in which they nurtured the boys' critical literacy skills (e.g., understanding of racism) by having their perspectives, actions, and experiences probed and challenged. The boys' understanding of their histories and experiences also shifted in critical ways through collective engagement. Additionally, the boys took charge of the ways inclusion was negotiated in the community of practice.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Blooming While Zooming: Developing Community Literacy and Identity With Black Boys Labeled Dis/abled Through Zoom

Key words: inclusive education, CHAT, race, disability

Background and Aims

Educators across the United States often struggle to recognize and embrace the gifts Black boys with and without dis/ability labels bring with them into learning environments (Proffitt, 2022). This is a social justice issue that demands urgent action from educators and researchers. Designing inclusive schools that meet the academic, sociocultural, and psychological needs of Black boys requires—at the minimum—intentional and concerted efforts by educators to demarginalize the voices, histories, cultures, and perspectives of Black boys in their respective schools (Smith & Hope, 2020). The purpose of this paper is to reveal what is possible when geographically distant Black boys labeled dis/abled are brought together in a virtual space and provided the opportunity to co-construct a community of practice centered on literacy and identity development. This paper recognizes the increasingly critical role of technology in education and challenges the idea that deep and meaningful learning can only take place within the confines of a school building. Further, this paper aims to underscore the importance of accepting Black boys for who they are without trying to repair them.

Theoretical Framework

I, the author, used disability critical race theory (DisCrit), Waitoller and Kozleski's (2013) notion of inclusive education, and cultural historical activity theory (CHAT; Engeström & Sannino, 2021) to design the study and analyze the activity within it. CHAT helped me recognize my and my participants' psychological development as embedded within a dynamic social and cultural-historical context. CHAT also helped me conceptualize and design a learning space on Zoom that recognized and embraced the cultural-historical assets of nine Black boys labeled dis/abled. Embracing the boys' gifts meant welcoming the ways the boys shaped and sought to shape our activity system. DisCrit and Waitoller and Kozleski's notion of inclusive education helped me examine issues of power (e.g., how racism and ableism intersected in ways that limited the boys' opportunities to learn in school). I was particularly cognizant of the power dynamics between the boys and me and, in several instances, I deliberately tried to cede power to the boys.

Methods

I used critical qualitative methods to understand how the identities of a group of nine Black boys labeled dis/abled—from various states across the United States—mattered in the context of their

schooling experiences. The boys and I co-constructed a community of practice on Zoom. We read and discussed a fiction book (that foregrounded topics such as racism, ableism, bullying, and policing) in the context of their identities and lived experiences. Drawing from Universal Design for Learning (UDL) principles, I provided an audio version of the book to supplement the hardcopy. I also engaged the boys in multiple interviews and focus groups and took fieldnotes during our virtual sessions. I analyzed data using the constant comparative method (Corbin & Strauss, 1990).

Results and Conclusions

I found that, as the boys and I strove toward creating an inclusive learning space, the boys engaged in practices, especially written and verbal dialogue, that exposed their thoughts, cultures, values, desires, needs, joys, and frustrations. The boys took the risk of being vulnerable with each other and me as we made meaning of the text together and shared our experiences and perspectives. We co-created a space in which we nurtured the boys' critical literacy skills (e.g., understanding of racism) by having our perspectives, actions, and experiences probed and sometimes challenged. The boys' understanding of their histories and experiences also shifted in critical ways through our collective engagement. Additionally, the boys were largely responsible for the ways inclusion was negotiated in our community of practice.

These results are significant because they challenge the common misconception that Black boys, especially those labeled dis/abled, are academically, socially, and emotionally deficient. These findings are also important because they show what can be accomplished when Black boys are provided opportunities to be and learn in community with other Black boys. The fact that such rich activity occurred through Zoom raises the following question: What can be accomplished if educators respect Black boys as the experts they are in school?

Interaction with Participants

The interaction with the participants will be facilitated through a set of prompts designed to stimulate a conversation about fostering inclusivity in education for historically marginalized students with dis/abilities, utilizing CHAT lenses.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Using cultural historical activity theory (CHAT), this study aims to explore the nuanced challenges of implementing the Individuals with Disabilities Education Act (IDEA) at the local level across various U.S. educational contexts. The research critically examines the systemic obstacles and dynamic interactions among key stakeholders, including educators, students, parents, and policymakers, to unpack the complexities of IDEA's enactment. A significant focus is placed on the marginalization of student and parent voices, highlighting the disparities between the theoretical intentions of IDEA and the practical realities within classrooms and educational institutions. Adopting a case study methodology, the study integrates in-depth interviews, comprehensive document analysis, and observational studies to explore local-specific implementation issues. This approach allows for an investigation into the multifaceted nature of barriers that range from institutional to interpersonal levels, aiming to shed light on the significant disjunctions between policy aspirations and educational outcomes. The findings reveal considerable challenges in the local implementation of IDEA, uncovering intricate layers of obstacles that impede the effective translation of IDEA's mandates into tangible educational practices. Particularly, the research underscores the critical disparities between the legislative intentions of IDEA and the actual educational practices, with a notable emphasis on the

issues arising from the marginalization of student and parent voices. In essence, this research contributes to the critical discourse on special education policy implementation, highlighting the imperative for localized, context-aware strategies that empower stakeholders, enhance educator capabilities, and foster an inclusive educational culture. Through this exploration, the study aims to catalyze meaningful reforms.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Advancing the U.S. Commitment to Education for All: Understanding IDEA Implementation on the Ground

Key words: IDEA, policy implementation, CHAT

Background and Research Questions

Despite IDEA's goal to ensure equitable education for children with disabilities, its implementation encounters numerous challenges due to socio-cultural, economic, and systemic factors (Artiles & Kozleski, 2016). Street-level bureaucrats, which include teachers, principals, superintendents, and other school staff must interpret and “do” educational policy in their local contexts. Culture, history, and context complicate their ability to enact policy in ways that promote the wellbeing of all community members. CHAT offers a lens to analyze the challenges these leaders face by considering the interactions within an educational activity system and the historical and cultural dimensions of human activity (Engeström, 2001; Kozleski et al., 2014; Vygotsky, 1978). A significant concern is the neglect of student and parent voices in decision-making, which is crucial for genuine inclusive education (Valle & Connor, 2011; Harry & Klinger, 2014).

Research Questions:

How are the challenges of implementing IDEA experienced and perceived by various stakeholders, particularly students and parents?

In what ways are student and parent voices marginalized in the IDEA implementation process?

How can CHAT enhance our understanding of the socio-cultural and historical factors influencing IDEA's enactment?

Aims and Objectives

This study aims to critically examine local challenges in implementing IDEA, with a focus on the often-overlooked perspectives of local communities. Using CHAT, it seeks to uncover the socio-cultural and historical factors hindering IDEA's effective enactment and proposes actionable recommendations to understand and unpack tensions in truly implementing a policy like IDEA in a US midwestern town.

Methods

The study employs a qualitative exploratory case study design to examine IDEA's practical application in a U.S. educational context. This approach allows for an investigation into the multifaceted nature of barriers that range from institutional to interpersonal levels, aiming to shed light on the significant disjunctions between policy aspirations and educational outcomes. Data collection methods include semi-structured interviews with educators, policymakers, parents, and students; analysis of policy documents related to IDEA; and observations in educational settings. CHAT is used to analyze the data, focusing on identifying systemic contradictions and the marginalization of crucial stakeholder voices.

Results

The findings reveal a significant gap between IDEA's objectives and its implementation, characterized by insufficient resources and support for educators and students, societal attitudes impeding inclusive practices, and structural barriers within the educational system. Notably, the technocratic approach to policy development often fails to consider local contexts and the voices of key stakeholders. Additionally, a small fraction of IEP meetings meaningfully include student and parent inputs (Lipsky & Gartner, 1997; Trainor, 2008).

Conclusions

The study highlights the need for a holistic and context-sensitive approach in developing and implementing IDEA. Recommendations include fostering inclusive stakeholder engagement, enhancing teacher training for inclusive practices, reallocating resources to meet the needs of inclusive education, and ensuring student and parent voices are valued in policy development and implementation.

Interaction with Participants

The interaction with the participants will be facilitated through a set of prompts designed to stimulate a conversation about fostering inclusivity in education for historically marginalized students with dis/abilities, utilizing CHAT lenses.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Classrooms are complex sites of cultural activity. There is a need to understand how teachers understand and translate inclusive education mandates into practice in these complex activity systems. Using cultural historical activity theory, this study examines life in two general education classrooms with the purpose of understanding how teachers structured their practices to support the learning and sense of belonging of historically marginalized students with dis/abilities. The study employed a qualitative research design, utilizing critical ethnographic inquiry (Atkinson & Hammersley, 2007; Creswell, 2013) and reflective praxis (Naraian, 2014) methodology. Four phenomenological individual interviews, twelve hours of classroom observations, and eight individual video-recall interviews were conducted with two special educators and two general education teachers from an elementary public school in the United States to determine how educators structured their practices to support the education of students with identified dis/abilities in a general education setting. The collected data were analyzed using a grounded theory approach (Charmaz, 2006). The findings reveal classroom cultural scripts that, rather than fostering inclusivity in a general education setting, hinder students' learning and participation. Thus, the study scrutinizes the concept of an inclusive classroom and urges future research to critically assess educational contexts where claims of inclusivity might inadvertently conceal underlying inequities.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Cultivating Inclusive Futures: Unveiling Classroom Cultural Scripts Through Cultural Historical Activity Theory

Key words: inclusive classrooms, cultural scripts, CHAT

Background

Governments and schools around the world often employ the terms “access”, “equity”, and “inclusion” in shaping education policies and practices. However, there exists a significant gap in understanding how teachers understand and translate an inclusive education mandate into practice. Social justice and equity-driven approaches to inclusive education emphasize the need to embrace the divergent histories, capacities, and cultures that students bring to a classroom (Proffitt, 2022; Kozleski, 2020). To foster a sense of belonging and thriving among learners, a classroom must have structures that honor students’ voices, cultures, funds of knowledge, and intersectional experiences (Gutiérrez & Rogoff, 2003). Cultural historical activity theory (CHAT) offers conceptual language and tools to gather significant data on the intricate relationships between teachers and students with and without identified disabilities. It provides a robust approach for understanding the complexities inherent in the educational practices and interactions surrounding historically marginalized learners (Artiles & Kozleski, 2007; Engeström & Sannino, 2021).

Aims

Using CHAT (Engeström & Sannino, 2021), the study aimed to (a) identify cultural scripts, including routines, rules, and participation structures (Gutiérrez & Rogoff, 2003) that were designed to support the learning and foster a sense of belonging for students with identified dis/abilities within the activity arena of a general education classroom; and (b) examine the identified cultural scripts as means to disrupt prevailing notions of what was constituted as an inclusive learning environment in a general education classroom.

Methods

The study employed a qualitative research design, utilizing critical ethnographic inquiry (Atkinson & Hammersley, 2007; Creswell, 2013) and reflective praxis (Naraian, 2014) methodology. Four phenomenological individual interviews, twelve hours of classroom observations, and eight individual video-recall interviews were conducted with two special educators and two general education teachers from an elementary public school in the United States to determine how educators structured their practices to support the education of students with identified dis/abilities in a general education setting. The collected data were analyzed using a grounded theory approach (Charmaz, 2006).

Results

The findings revealed that often, what educators perceived to be an inclusive practice was a distorted notion of inclusivity. Standardization of teaching, cultural tensions, and deficit views toward what constituted learning and teaching led to hierarchies and students’ marginalization. The politics of recitation and homogenization of instruction based on disability labels were dominant cultural scripts in a classroom. Teacher- and worksheet-driven, rigid protocols functioned as structures to police and manage student behavior. In this way, students were recruited into dominant [white, ableist] ideologies, which diminished personalization and opportunities to acquire meaningful learning.

Conclusions

Teachers wield significant influence in shaping the definition of inclusive education for students with dis/abilities in a general education classroom. By fostering teachers' understanding of a classroom as a cultural activity site and the roles they play, opportunities arise to identify socio-cultural conflicts that might prevent students from meaningful engagement in grade-level learning. These conflicts can then be leveraged as potential avenues to challenge prevailing notions of individual differences and inclusive teaching. Consequently, this paper scrutinizes the concept of an inclusive classroom and urges future research to critically assess educational contexts where claims of inclusivity might inadvertently conceal underlying inequities.

Interaction with Participants

The interaction with the participants will be facilitated through a set of prompts designed to stimulate a conversation about fostering inclusivity in education for historically marginalized students with dis/abilities, utilizing CHAT lenses.

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289 Developing Climate Agency within Work Communities: A Methodological Approach

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with climate change

Keywords: transformative agency formative intervention climate change

SHORT ABSTRACT

From both the perspectives of effectiveness and inclusiveness, work communities play a crucial role in addressing climate change. Our research project aims to develop a method that supports climate agency and generates concrete, climate-sustainable practices within work communities – and that could be executed by the work communities themselves. We applied Cultural-historical Activity Theory (CHAT) and Developmental Work Research (DWR), which provide a framework for inclusive and multi-voiced development. Our data comes from a case study involving a multidisciplinary work community in a school. The development process consisted of workshops, in which the current activities were analyzed and the school's near future envisioned before ideating and implementing development experiments. The study analyzes the development process in relation to the theoretical and methodological principles of Activity theory and Developmental work research. The development process utilized principles such as object-orientation and mediation – whereas some other methodological foundations of CHAT and DWR received less attention. The findings, however, suggest that small-scale development experiments prepare work communities for co-creation, and thus, potentially for deeper analysis of work activity and systemic contradictions. As researcher-interventionists, tools can be offered to foster climate agency and promote inclusive, multi-voiced development, potentially reducing the need for external consultants in the future.

EXTENDED SUMMARY

Research and societal discourse on climate change have long focused primarily on societal decision-making and perspectives related to individual consumers. The role of workplaces and work communities has received less attention (e.g. Ala-Laurinaho et al., 2020). However, development initiatives that involve strong collective and local agency in the planning and implementation process are more likely to be practical and accepted by the community itself (Thiele, 2016). Thus, from the perspectives of effectiveness, participation, and fairness, it would be justified to involve work communities as local actors in climate issues as well.

Developmental work research (DWR, Engeström, 2015), based on Cultural-historical Activity Theory (CHAT), is an inclusive and participatory development theory and methodology that utilizes multi-voiced dialogue (Virkkunen & Nevnham, 2013) in its processes. The emerging fourth-generation theory and methodology (Engeström & Sannino, 2021) aim to address major societal and global challenges, such as climate change, by facilitating dialogue among different levels of decision-making. A key role in this is played by the Change Laboratory, a formative intervention method that has been

developed extensively and successfully applied in various industries. The key principle and outcome of Change Laboratory is transformative agency by double stimulation (TADS, e.g. Engeström et al., 2022).

However, at times, there is also a need for more focused projects and interventions aimed at supporting smaller-scale development initiatives and the emergence of agency within workplaces. The first experiences of cross-professional cooperation in ideating and implementing concrete development proposals may act as a foundation for a culture of multiprofessional co-creation. In our research, the objective has been to develop a method for the workplace's own use which supports the climate agency of the work community and generates concrete, climate-sustainable practices. Our data comes from a case in which a multidisciplinary work community in a school aimed to promote climate-friendly practices. The participants included professionals from education and guidance as well as nutrition and facility management. The development process consisted of three workshops and an implementation phase, during which participants 1) analyzed their current and upcoming practices and envisioned a school with more sustainable practices according to their aspirations, 2) generated and implemented development experiments 3) evaluated the results of the experiments and the development process. In the workshops we applied the CHAT's and DWR's principles of analyzing work as object-oriented, shared, and mediated activity. All workshops were recorded and transcribed for research data. Participants were also interviewed twice: before the development workshops and after the implementation phase.

Overall, there were three development experiments: increasing the popularity of vegetarian meals, reducing food waste, and improving waste sorting. During the evaluation phase, participants reported the progress of the experiments and the challenges and successes associated with them as well as assessed participation in collaborative development. When considering future, participants expressed their desire to continue developing climate actions and to have a broader influence in various collaborative groups and municipal decision-making processes.

In our presentation, we critically examine the development process we carried out in relation to the principles of Activity theory and Developmental work research (Engeström, 2015; Virkkunen & Newnham, 2013). The workshops included in the school's development process will be analyzed using theory-based content analysis (Silverman, 2010). As a result of our analysis, we present three perspectives in which the development process deviated from the basic principles of developmental work research: 1) the method of collecting and processing mirror data 2) applying historical analysis, and thus, 3) applying contradiction analysis before the planning of first development experiments. As a result, a) we justify how the process in its current version benefited the promotion of climate agency, and b) we suggest how the process could be further developed (e.g. how the historical perspective and analyzing contradictions may follow the implementation of first experiments and contribute for their further development). We conclude that from the perspective of everyday workplace realities, instead of striving for large individual project endeavors, a viable solution can be to support an iterative continuum consisting of small development cycles. A work community may be more prepared for deeper analysis of work activity and systemic contradictions after the initial small-scale development experiments. As researcher-interventionists, we could then offer tools to foster climate agency and increase the possibility for inclusive, multi-voiced development within the work community – possibly decreasing the need for external consultants in future.

Interaction with audience: The presentation will be divided into two or three sections, with a question or statement presented after each section for the audience to respond to by voting 'Yes / I agree' or 'No / I disagree'. If possible, one or two participants will be asked to provide a brief rationale for their stance. Finally, there will be a collective discussion at the end of the presentation.

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293 Why criticisms liberate partners' views, not threaten their faces? : Bakhtin's on dialogue and love

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Bakhtin dialogue love primary school education

SHORT ABSTRACT

In this paper, I discuss how to empower learners to participate in communications with alien others who have contradictive views in today's culturally diverse world. I investigate on this issue by focusing on the relevant discussions of Russian philosopher M.M. Bakhtin who described the values of communications with alien other. Bakhtin idealized "dialogues" as communications that respect each speaker's different viewpoints, because we can investigate coordinate our ideas multilaterally by dealing with critical comments from others. However, such negations from alien others inevitably cause emotional pain because the speaker's views may be criticised. Bakhtin also pointed that speaker need to have affectionate trust toward critical, because it facilitates dialogue that is respectful of both speakers' perspectives. Utilizing Bakhtin's discussions, I and my collaborative researcher developed the educational programs for primary school pupils promoting their dialogues in Japan. We intended to promote children's productive criticisms by facilitating sense of trust through engaging dialogic tasks that every participant is equally distant from "right" answer. I analysis the concrete conditions to open these critical dialogues in public schools, and discuss the possibilities of educational settings to empower children who participate in diverse dialogues in conflictive world.

EXTENDED SUMMARY

Today, we live in culturally diverse world, and the opportunities of communications between alien others who have contradictive views have been increasing. Such communications can liberate our worldviews from isolation in our own little communities, and we can investigate coordinate our ideas multilaterally by dealing with critical comments from others. However, these others' criticisms also have risks of causing conflicts, because such they might be accepted as threats against faces of people who want to protect their existing ideas. We need to instruct our students how to coordinate with merits and risks of critical communications with alien others. In this paper, I conduct the theoretical investigations on this issue by focusing on the relevant discussions of Russian philosopher M.M. Bakhtin who described the values of communications with alien others in the early- and mid-20th century. Then, by using these Bakhtin's ideas, I analyze the effects of educational trials to promote productive communications between alien others.

Bakhtin (1990) asserted that the cognitive views of speakers about the external world do not align perfectly, and he referred to this irreplaceable originality of each speaker's perspective as "excess of vision" (Clark & Holquist 1984; Tajima, 2017). According to this premise, Bakhtin (1984) idealized "dialogues" as communications that respect each speaker's different viewpoints, and problematized

the interactions isolated in relationship with ideologically homogeneous peers, who ignore or erase perspectives contradicting against their own views. He named the tenet of the latter communities as “self-poisoned”. Critical disagreements with dialogical partners should have productive powers of recreating our views and prevent them from speakers’ self-poisoning (Matusov, 2001; Tajima, 2021a). However, such negations from alien others inevitably cause emotional pain because the speaker’s views may be criticised. Bakhtin (1990) also expressed the word “transgression” to refer to outsiders, suggesting an invasion of safe, familiar environments (e.g. family) from the outside world. Thus, speakers should instil trust in alien others to ensure an accepting environment, and celebrate differences in perspectives to promote critical dialogue (Tajima, 2021b). Bakhtin (1986) referred to such affectionate attitude towards others as “love” or “benevolence”, because it facilitates dialogue that is respectful of both speakers’ perspectives.

We might regard Bakhtin’s “rogue, clown, and fool” as the role model who promote dialogues with such affectionate mood, because they are others who yield cheerful atmosphere in order to critical investigations (Tajima, 2021a). Socrates was one of the earliest philosophers to provide examples of Bakhtin’s fools, as described in the early works of Plato. A key aspect of Socrates’ method was respecting his discussion partner’s ideologies. He explained his partners about the goals of his criticisms on traditional Athenian worldviews as knowing them in new ways that he did not know by himself. Discussion partners who understood Socrates’ intentions were welcoming of his critique of their views. In this way, Socrates was not perceived as an authority figure who teach one-sided “true” ideologies (Bakhtin, 1981). Moreover, Socrates even criticised his own ideas in a light-hearted and ambivalent/non-judgmental manner, thus, his perspectives were open to partners’ criticisms. Therefore, Bakhtin might position him as one of the significant fools, who has ambivalent perspectives allowing him and his dialogic partners to critique their worldviews reciprocally in a lovely air.

Referring to these Bakhtin’s ideas on Socratic dialogues and love, I and my collaborative researcher developed the educational programs for primary school pupils promoting their dialogues in Japan (Tajima, Fujikura, Takemoto, in printing). We designed the open-questioned tasks relating to real social issues, and let the pupils to discuss the solutions by utilizing authentic knowledge written in textbooks. We asked teachers to behave like Socrates who promoted critical dialogues with ambivalent manner, and admire children’s investigations aiming for solutions on social issues that have no final answer essentially. We expect that such dialogical settings should promote children’s productive criticisms, because their negations can be accepted as supports for finding the better resolutions on issues. In fact, we observed the pupil to show the gratitude toward their partners for criticising their own opinions. Many of them appreciated on critical comments as “I was lucky being criticised, because I could see the better ways to complete my missions.” They came to know that reasonable critical comments are beneficial for partners to liberate their views from self-poisoning homogeneous contexts, and such experiences brought them the sense of trust toward critical partners, not the fear of losing their faces.

I analysis the concrete conditions to open these critical dialogues in public schools, and discuss the possibilities of educational settings to empower children who participate in diverse dialogues in conflictive and culturally diverse world.

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296 Creative and inclusive engagement in Art: Intergenerational art-movement-well-being practices

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: art, moving, well-being Aboriginal Artists and Knowledge Holders intergenerational learning

SHORT ABSTRACT

Art resonates with people's social experiences and mirrors the evolution of society (Vygotsky, 1971). Art, movement and well-being are intimately integrated with education, particularly as populations age. COVID-19 pandemic has exacerbated feelings of loneliness across generations. The focus is on creative and inclusive engagement through interdisciplinary, intergenerational art–moving–well-being practices that mitigate loneliness and enhance social connections across generations. Theoretically we explore Vygotsky's (1995) understanding of creativity, specifically the dialectic relation between imagination, emotion and intellect as three generations participate in art-movement-well-being activities together. To enhance our understanding of creativity while generating social connections, we employ salutogenesis where the focus is on *what works* rather than what is deficit in well-being or health (Antonovsky, 1996). Methodologically, an a/r/tographic approach was used, where individuals involved in the study are both researchers and participants. In collaboration with Aboriginal Artists and Knowledge Holders, Teacher Educators, and Pre-service teachers, Physical and Occupational Therapists and young children, data were collected. We report on four workshops (n=16 hours) where 70 participants joined together to complete activities led by Aboriginal Artists and Knowledge Holders to undertake various forms of art-movement-well-being creative endeavors (Wayapa Wuurrk, eco-dyeing and solar printing with seasonal plants). Preliminary findings indicate that bringing together three generations to participate in art-movement-well-being activities, results in positive transformation of most participant's mindset. Each participant group moved through a process of being concerned about the unknown, overcoming their fears, then initiating new friendships. There was a growing cultural awareness of Indigenous Knowledges and connection to country reported.

EXTENDED SUMMARY

Background

Loneliness is an emotion that is prevalent in older members of our society (Gerst-Emerson & Jayawardhana, 2015) and our youth (Eccles & Qualter, 2021) and has been linked with reduced general health including anxiety, depression and high mortality rates (OECD, 2021). According to Duncan et al, (2021) in Australia, poor health associated with loneliness costs approximately \$2.7 billion annually. Research suggests that intergenerational activities can have a positive effect on people feeling socially connected and challenge stereotypes (Alfrey, 2020), and intergenerational

community and art-based practices when learning about health allows for a rich source of knowledge (O'Connor et al., 2019).

Our contribution to literature is bringing together generations, and cultures (Indigenous Knowledge Holders and Artists with non indigenous people) to link health with creativity. Vygotsky (1971) argues that creativity is vital for both humanity and society, and is indispensable for cognitive processes and consciousness. Art influences each persons' emotions and Vygotsky considers art as a social manifestation of the unconscious, serving as a means to liberate emotions. The imagination serves as the primary expression of an emotional response (Vygotsky, 1971), and according to Vygotsky (1995), every human being possesses a creative capacity that serves as the fundamental cornerstone for art, science, and technology. He termed this creative ability imagination and argues that it is the underpinning force behind every creative endeavor. Additionally, Vygotsky suggested that people experience liberation through an emotional outburst, fostering the flourishing of imagination as they consciously interpret their emotions. To further explore creativity in relation to moving and well-being (specifically intergenerational social connections), Antonovsky's (1996) concept of *what works well* is drawn upon, where the focus is on the development and sharing of well-being assets (including arts-based assets) among participants, rather than dwelling on the deficits or locating what was missing from aspects in a person's life.

Aims

Despite facing limited government funding for arts-based initiatives, our aim is to transform, sustain, and share the positive intergenerational community benefits arising from culturally informed art, movement, and well-being practices. To elaborate on this aim, we explore the following overarching research question: How can we transform, sustain, and share the positive intergenerational community benefits that emerge from culturally informed art, movement, and well-being practices?

Methods

Ethical procedures from a university ethics committee and Department of Education permissions were adhered to throughout the study. Using an a/r/tographic lens, participants were positioned as artists, researchers, and teachers, engaging in the creation of artworks and movement that related to well-being. In the process, participants were invited to share their socially engaged practices with each other (Adams et al 2023). The participants of the study included Aboriginal Artists and Knowledge holders, researchers, university students (preservice teachers and occupational therapy students (18+ year olds), University of the Third Age (50+ years), representatives from Rotary (50+ year olds), and primary school children (10 year olds). The data from four workshops were analysed (n=16 hours) alongside video observations, artworks, written responses to provocations during workshops, and incidental interviews with all participants during workshops, and focus groups with the 50+ age groups. The data presented originates from responses to written provocations during the workshops. Clarke & Braun's (2013) iterative process for data analysis was used and included thematic analysis, familiarizing oneself with the data, generating codes, constructing themes, reviewing potential themes, defining and naming themes, and writing the report.

Results

Preliminary findings indicate that bringing together three intergenerational groups to participate in art-movement-well-being activities, results in positive transformation of most participant's mindset and creative art pieces were developed. Each participant group moved through a process of being

concerned about the unknown, overcoming their fears, then initiating new friendships. There was a growing cultural awareness of Indigenous Knowledges and connection to country reported.

Conclusion

Loneliness affects both older and younger generations, and correlates with adverse health outcomes and substantial economic costs. Our research, uniting diverse generations and cultures, aims to link health with creativity, drawing on Vygotsky's perspective concerning the essential role of creativity in human cognition. Combining Vygotsky ideas on creativity, and Antonovsky's strengths-based framework, art is understood as a means to liberate emotions, share well-being assets and initiate a transformative force that seems to foster positive emotions and health assets in intergenerational participants. Preliminary findings indicate that intergenerational engagement in art-movement-well-being activities leads to positive transformations, fostering cultural awareness and building meaningful connections.

How interaction with audience

Introduction to the session, participants will be invited to join in a two minute conversation about loneliness and how intergenerational creative projects could create opportunities for social and cultural connections.

Posters from the project workshops will be displayed around the presentation room for comments. A4 paper and pencils will be positioned underneath the posters so the audience can leave comments or email addresses for future collaborations.

References: Acknowledgements Project artists: Nikki Browne, Bidjara artist and educator, and First Nations Learning and Programs Manager, McClelland Sculpture Park and Gallery, Aunty Karan Kent, Bidjara and local community Elder/Respected person. Founder of Yimba Yumba — in sync with nature through the art of sharing Wayapa Wuurrk, Kylie Colemane, Darug, and Wiradjuri First Nations consultant, artist, and educator. Founder of Your Green Prescription, Kursty Colemane, Darug, and Wiradjuri First Nations knowledge holder, artist, and educator. Research team: Dr Geraldine Burke, Assoc Prof Megan Adams, Assoc Prof Laura Alfrey, Dr Aislinn Lalor, Prof Keith Hill, and Priscilla Pettengell
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297 Learning models enhancing students' reflections about exchange within the place value system

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: learning activity learning model place value system

SHORT ABSTRACT

Research in mathematics education shows a lack of research on empirical classroom studies using the El'konin Davydov learning activity (hereafter ED curriculum) in early mathematics education in Western countries. Anyhow, the few existing studies show results interesting for promoting young students' capabilities to think mathematically. One aspect of the ED curriculum is the specific learning models the students are supposed to construct in these activities. The aim of this presentation is to discuss such learning models constructed by students and teachers in Sweden to enhance understanding of the structure of the place value system (PVS) regardless of what base is used. The PVS is central for deep understanding in mathematics and many students fail to develop a sustained developmental understanding of this mathematical content which can give rise to significant mathematical difficulties later on in the school system. A design study has been conducted with researchers and teachers in collaboration. Results indicate that depending on what learning model the students construct, different aspects are reflected by the students of for example the exchange; when to do an exchange or the transition between number units (e.g. between tens and ones in base ten). When exchanging, each unit can just be counted once and after exchange the changed units have to be removed.

EXTENDED SUMMARY

This paper presents research regarding learning models developed by theoretical principles based on the ED curriculum, in a teaching developmental study. Working with learning models is a response to the challenges that teachers today face in planning, implementing, and evaluating a mathematics education that lays a foundation for the development of the youngest students' number sense, problem solving skills and mathematical thinking. Many students fail to develop such capabilities, specifically in relation to the structure of the PVS (e.g. Howe, 2019). One core concept that characterises the work with the PVS is number units (Howe, 2019), for example ones and tens in base ten. Students need to use knowledge about number units and how they relate to each other, when for example making various operations with multi digit numbers. According to the ED curriculum students already in the first school years should work with and develop knowledge about the overarching structure of the PVS - the structure regardless of what base is used (Davydov, 2008; Venenciano et al., 2015; Vygotsky, 1986).

A learning model is constructed by students collective learning actions (Davydov, 2008) and makes it possible to reflect on theoretical concepts not possible to acquire through a direct experience of an object. A learning model implies some exploratory transformative work from students under the direction of the teachers for constituent relationships to emerge (Davydov, 1990). Hence, a learning model makes it possible to reflect on theoretical concepts; and if they are constructed by tools specific for mathematics, they might enrich the possibilities to develop mathematical concepts (Davydov, 2008). When constructing a learning model and reflecting on what the core of a theoretical concept is, students are taking part in learning actions in relation to the concept, they then have possibilities to make theoretical abstractions and generalisations of the concept (Broman et al., 2022; Waermö & Broman, 2022). In the ED curriculum in mathematics several models are present, for example line-models, area-models and iconic models of for example cups (Davydov et al., 2012). The aim of our presentation is to discuss the learning models proposed by the ED curriculum when students reflect on exchange between different number units in the PVS. Our question is: What do the different learning models add in terms of aspects of exchange in a not specified base?

Data for the paper comes from a design-based research project funded by The Swedish Institute for Educational Research and consists of video documentation from research lessons in Grade two in Sweden. The ordinary teacher was teaching the students, and the researchers documented. The participating students had signed a consent form. In the chosen lessons for this paper different problems were solved, with the use of different tools to jointly reflect on the exchange in the PVS. The analyses were conducted in two steps. In the first step the students' and teacher's actions on different models suggested by the ED curriculum were analysed in relation to the question: Who said and did what using what tools (Eriksson, 2021) to reflect on what aspect of exchanging between different units correlating exchanging in a multi digit number in a number in any base (Björk, 2023). The second step was to code the participants' actions that focused on the same aspects of exchange according to respective tools.

The results show that through the work with different models the students were able to reflect on different aspects of the PVS. In this paper the analysis is delimited to focus the exchange in a base system. The models were constructed by the students, using tools as line segments, area models, and Cuisenaire rods. Depending on which tool was used different aspects of the exchange process appeared:

Line segments: Where to make the exchange between the different number units

The different number units

Area models: Each unit can just be counted once

Cuisenaire rods: When making an exchange, the set of rods cannot be used over again To conclude, the results show that the theoretical concept – exchange – one of the core concepts for the students to understand regarding the PVS when operating multi digit numbers, can be reflected in different ways depending on what tools are used to construct the learning model. Different aspects of exchange are reflected depending on what kind of model is used. These aspects are not possible to grasp without reflecting on them, thus they are theoretical in their nature. Many research studies are handling exchanging as one important concept of PVS but seldom discuss what aspects exchanging consists of. However, these aspects are added by the ED curriculum. But, one might discuss if exchange is generalised from the three different tools in these actions of modelling, or if the

exchange is high-lighted as including different aspects. Do the students generalise exchange and do they make theoretical abstractions?

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303 Integrating learning into real life: A Change Laboratory to expand school instruction

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: cultural-historical activity theory school instruction Change Laboratory

SHORT ABSTRACT

Using a *Change Laboratory* method, this study aims to explore how *expansive learning* for teachers can be generated and supported in the context of a school reform effort at an elementary school in Japan. Change Laboratory is an experimental research method in which practitioners and researchers transform their work practices through bottom-up, collaborative negotiation sessions. It is a *formative intervention* methodology rooted in *cultural-historical activity theory* and seeks to replace the typical top-down linear interventions that dominate school reform.

This study analyzes data from ten Change Laboratory sessions of two to three hours each conducted between March 2023 and March 2024 at Seijo Gakuen Elementary School.

Through the Change Laboratory, participants articulated the contradictions that had historically accumulated in the school's activity system. The principal contradiction here is the systemic tension between the encapsulated and compartmentalized subject lessons and subject-teacher system, and the cross-curricular, integrated learning and school-wide curriculum development. In the Change Laboratory, new forms of activity that could resolve this contradiction were sought. What became such a new model was one that dialectically overcame the opposition between teacher-led instruction in the subject matter and cross-curricular integrated learning, which de-encapsulated such compartmentalized instruction. It is a new model of school instruction that integrates learning into children's real lives, fostering the inquiring child. The expansive learning generated by practitioners in the Change Laboratory can be seen as a path through which a simple, abstract model initially grasped is gradually concretized into new, complex objects and forms of practice.

EXTENDED SUMMARY

Background

In the field of school reform, traditional standard intervention studies are reduced to linear causality, wherein the top-down view regards teachers as entirely passive agents of policies, while policymakers and researchers create a grand design that teachers then apply or revise, resulting in more positive changes for students. Conversely, the basic principle of *formative intervention studies based on cultural-historical activity theory* is that teachers gain agency to control the intervention and lead the process. Activity theory studies how agents collaboratively redesign, change, and transform their collective activity systems, which have been culturally and historically constructed (Engeström, 1987/2015, 2008, 2016, 2018; Leont'ev, 1978, 1981; Sannino et al., 2009; Sannino & Ellis, 2013;

Yamazumi, 2021). Here, the focus is on triggering and sustaining an expansive transformation led and owned by teachers.

Moving beyond the limitations of linear intervention, activity–theoretical formative interventions in teacher learning and development attempt to facilitate teachers’ *expansive learning*, as theorized by Yrjö Engeström (1987/2015, 2016)—that is, expanding the object of teachers’ collaborative learning from below to change the broader structure of an entire school as a collective activity system. These *collaborative interventions* encourage teachers to develop interventions to independently transform their activity systems (Yamazumi, 2021). Through such interventions, the teachers’ *transformative agency* (Sannino, 2015, 2022) can be generated and exercised. In other words, collaborative formative interventions based on activity theory enable teachers to become responsible activity agents who collaborate in shared inquiries regarding desired objects, forms, and patterns of practice, resulting in the redesign of schools.

Aims

Using a research method called *Change Laboratory* (Engeström, 2007, 2016; Engeström et al., 1996), this study aims to explore how expansive learning for teachers can be generated and supported in the context of a school reform effort at an elementary school in Japan.

Change Laboratory is an experimental research method in which practitioners and researchers transform their work practices through bottom-up collaborative negotiation sessions over potential contradictions. This represents a formative intervention methodology rooted in activity theory and seeks to replace the typical top-down linear interventions that dominate school reform. Thus, formative interventions aim to facilitate teachers’ expansive learning as concept formation “in the wild” in which “functional concepts” are formed (Engeström, in press; Engeström & Sannino, 2012). Therefore, teachers are empowered to create new designs and transformations for their school’s activity system.

Methods

This study was conducted at Seijo Gakuen Elementary School in Tokyo. Founded in 1917, Seijo Gakuen Elementary School is an “experimental school” for “the construction of elementary pedagogy” (Sawayanagi, 1920, p. 9) with a history of over 100 years as a pioneer in the elementary education reform movement in Japan. This study analyzed data from ten Change Laboratory sessions of two to three hours each conducted between March 2023 and March 2024 to examine the generation of and support for teachers’ expansive learning.

Results

Through this Change Laboratory, participants articulated and grasped the contradictions that historically accumulated in Seijo Gakuen Elementary School’s activity system. The principal contradiction here is the systemic tension between the encapsulated and compartmentalized subject lessons and subject-teacher system, and the cross-curricular, integrated learning and school-wide curriculum development. This contradiction is precisely “*the double bind potentially embedded in the everyday actions*” (Engeström, 1987/2015, p. 138).

In the Change Laboratory, new forms of activity that could resolve this double binding were identified in the *zone of proximal development*. When forming such a new activity system step-wise, it is important to grasp an abstract, simple explanatory relationship that can be set as a starting point for the development of a new form of practice, like a *germ cell*, and a new abstract idea or concept that is the most concise and refined. The Change Laboratory intervention developed an expansive third

model that dialectically overcame the opposition between teacher-led instruction in the subject matter and cross-curricular, integrated learning that de-encapsulates such compartmentalized instruction in the subject matter. This new model of school instruction seek to integrate learning into children's real lives and support them in generating and exploring their own questions.

Conclusions

The expansive learning generated by practitioners in the Change Laboratory can be seen as a path through which simple, abstract ideas that are initially grasped are gradually transformed and concretized into complex objects in a new form of practice.

From this, teachers envisage the future of their school's activity system, reimagine its object, and enact school reform. A new research framework for school reform using the Change Laboratory method has important potential for supporting "enactments research" (Ball, Maguire, & Braun, 2012) on school reform that deserves much more consideration than traditional linear intervention research.

How interaction with the participants is planned

After the 20-minute presentation, there will be a 10-minute discussion with the participants.

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304 Back to the roots: Rethinking the role of imagination in child development, play and learning

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: Imagination Play Child Development and Learning

SHORT ABSTRACT

This symposium brings together researchers studying imagination and child development in playworlds. The cultural-historical concept of play is grounded in Vygotsky's (1966; 2004) theorizing of children's creation of the imaginary situation. Through imagination, children change the meanings of objects to create something new that imitates their previous experience (Elkonin, 2005). To answer how children's creative imagination arises in play and can inform educational practices, we draw inspiration from Guilla Lindqvist's (1995) playworlds approach. Researchers from Australia, China and Lithuania collectively present studies of imagination as a psychological function supporting children's development in playworld contexts. Paper 1, as a leading presentation, theoretically discusses the key concepts of cultural-historical theory in early childhood, including personality development and creative imagination. Paper 1 further explains how these concepts drive educational practices and argues that Narrative Playworld in Finland/Lithuania and Fleer's Conceptual PlayWorld in Australia are possible solutions for supporting children's development. Paper 2 and 3 illustrate how the intervention of Fleer's Conceptual PlayWorld supports mathematics and engineering concept learning and development, whilst paper 4 analyses three cases to discuss entrance strategies into a collective Narrative Playworld, highlighting emotional co-regulations as a starting process for intervention. Drawing upon different cultural values, societal demands, and intuitional practices, the four papers presented in the symposium offer new insights into the theoretical understanding of imagination in child development and merge theory into educational practices through playworld interventions.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Vygotskian Vision of Early Childhood Pedagogy: Focus on Personality Development and Creative Imagination

Based on the published chapter: Reconstructing the Vygotskian vision of play, learning and development in early childhood

Cultural-historical and activity theory has proposed many important theoretical ideas for educational sciences, inspiring the creation of different pedagogical approaches worldwide. It is worth noting that many important theoretical concepts of cultural-historical and activity theory have become widely accepted and used in educational contexts. In this presentation, I will examine how Vygotsky's

followers, El'konin, Bozhovich, Il'yenkov, Davydov, and Podd'iakov, further elaborated his ideas and main concepts relevant to early development and learning. I focus on the "play age" (from approximately 3-7 years of age), when play is a *leading activity* according to El'konin's (1999) stage model of human development. Vygotsky and his followers claimed that early childhood pedagogy must focus on *personality development* and *creative imagination* as the core psychological function of early age. Theoretical analysis revealed that such creative activities as *explorative experimentation* and *imaginative play*, giving the child a leading role, must become central elements in early education. I would argue that Narrative Playworlds developed in the Play Research Lab in Finland/Lithuania and Conceptual PlayWorlds developed in the Conceptual PlayLab in Australia and elsewhere is a possible solution. Many years of research in these laboratories suggest that dynamically evolving, high-level play has the most significant developmental and educational potential for young children.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

The problem of the child's personality development was, for Vygotsky (1997), "the pinnacle of all psychology." He saw creative imagination as the driving force of personality development and claimed that "children at play represent examples of the most authentic, most accurate creativity" (Vygotsky, 2004, p. 11). Imagination evolves from developing memory. Developing memory, along with imitation, "gives birth" to the imagination, which manifests itself in play activity. The real "blossoming" of imagination is seen in imaginary play. Vygotsky (1998) described children's play (ages 3-5) as "imagination in action"; as the child grows and matures, their active and visible imagination becomes their inner psychological tool.

Vygotsky's former student Bozhovich (2004a) defined the stages of personality development in terms of new psychological formations (neoformations) associated with the crisis periods at 1, 3, 7, 11, and 15 years of age. She emphasized that a child's "consciousness is the center in which all new psychological functions are integrated, determining the individual's personality as a 'higher psychological system'" (2004b, p. 85). Personality formation occurs not as an adaptation to the demands of the environment but as a constant creative activity aimed at restructuring the environment and the self.

Davydov (1986) proposed that the essence of an individual's personality lies in his creative potential and ability to create new forms of social life and himself. This process can be observed at about three years of age when the child becomes a conscious subject of his activity. Along with Vygotsky, they all agreed that play is a leading activity of early development, and that imagination is the main neoformation resulting from the crisis of seven.

Podd'iakov (1977) focused on cognitive development in early childhood and claimed that spontaneous learning is crucial for forming children's early thinking. Through his research, Podd'iakov (1996, 2012) discovered that qualitatively different degrees of organization and maturity of thinking processes coexist in young children. The unevenness and inconsistencies in knowledge create a situation where children must independently fill the "gaps" and make new connections between incompatible sides of the phenomenon. The developing imagination, the central mental function of 3-5-year-old children, solves this task. Podd'iakov concluded that personality development in childhood is explorative and experimental. He suggested that explorative experimentation is the first

leading activity in a child's life, and play comes next. He argued that playfulness and a playful attitude are more substantial than play for child development. We can assume that explorative experimentation occurs in imaginative situations through role interactions in play activities.

Aims

This theoretical paper discusses the main concepts of cultural-historical activity theory relevant to early development and learning: play and explorative experimentation as the leading activity and creative imagination as young children's main psychological formation (neoformation).

Methods

Theoretical analysis of the most important early childhood personality development concepts within the cultural-historical activity theory framework.

Results

Vygotsky's followers continued to deepen his theoretical conception of imagination and sought to realize and explore it in educational practice. Creative imagination as the core of a child's personality development makes Davydov demand joint play of adults and children as the prime educational method. This is combined with the proposal for creating a children's world in early childhood education.

The main traits of Davydov's model of early childhood educational culture that support personality development should:

- Create a feeling of safety, trust in the world, and joy in life.
- Form the basis of personal culture and support individual differences.
- Understand that knowledge, skills, and abilities are only tools for personality development, not final goals.
- Understand that educational interaction should start from children's point of view without minimizing their feelings and emotions.
- Understand that a child is an equal partner in interactions with adults.
- Play is an appropriate tool to organize children's lives.

Playworld (Lindqvist, 1995) is a collaborative adult-child play activity that fosters a culture of play in children, developed in Finland/Lithuania at PlayLab and in Australia. Conceptual PlayWorlds seeks to explore the potential of imaginative play and the importance of play for children's STEM-based conceptual thinking (high-level thinking) and learning at an early age before school.

Conclusion

Based on years of research, I argue that dynamically evolving, high-level play activities have the most significant developmental and educational potential for young children. Teachers must continually reflect more deeply on the theoretical concepts that guide their practice. Knowledge of the principles of child development and learning liberates teachers. It adds a creative dimension to the profession by allowing them to develop their educational practices more freely, considering individual needs and cultural contexts.

How interaction with the participants is planned:

In planning interactions with participants, I intend to allocate time to discuss how teachers use the concepts of imagination and personal development to advance their practice. I would ask to reflect on the relationships between imaginative play, intentional teaching, and personality development.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Imagination in mathematics and children's imagination in play-based learning

Empirical studies have been undertaken to advance the understanding of children's development of imagination and play. Yet, little attention has been directed to the role of imagination in children's mathematics concept learning. To better understand how children's imagination in play supports their mathematical problem solving and thinking, this paper draws upon the cultural-historical concepts of imagination and play, and the development of motives to study collective imagination for young children's mathematical learning in play. An innovative mathematical intervention, Fleer's Conceptual PlayWorld approach in Mathematics, will be investigated to illustrate the intentional teaching process of the mathematical concept of direction in a 3-year-old classroom. The 10.5 hours of video observation and reflective interviews have been applied to analyse one teacher and a group of young children's collective imagination in the exploration of the concept of directions in an educational experiment of *What the Ladybird Heard* PlayWorld. Ethical approval was achieved, and informed consent from teachers and families was received from participants to have their images and visual data used for education and research purposes. Rather than a static view of children's mathematical learning as a cognitive process of an individual, through exploring the dynamic interactions between teachers and children, this study found building mathematics narratives through dramatised conceptual problems in imaginary situations can develop children's wondering and motives in mathematics learning in play-based activity settings. It is argued that children's collective imagination promotes young children's mathematics exploration and learning.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

Previous studies have been undertaken to advance the understanding of children's development of imagination and play including play being learned cultural practice (Lillard, 2011), conceptual play (Fleer, 2011), moral imagination (Vadeboncoeur, 2019; Li, et al, 2021), play development in narrative playworld (Hakkraainen, et al., 2013) and Conceptual PlayWorld in science and engineering (Fleer, 2018). However, little attention has been directed to imagination in children's learning of mathematics concepts.

There is international attention on increasing the quality of young children's mathematics learning (MacDonald, 2018), with a special focus on a range of mathematical ideas to develop children's mathematical capacities including numeracy abilities (Reid & Andrews, 2016), the mathematical environment (Worthington & van Oers, 2016) and noticing children's everyday mathematics in play (Pandreaou & Tsiouli, 2020). However, there is less research exploring the imagination in children's mathematical concept exploration and learning.

Aims

This paper aims to investigate how children's imagination in play supports their mathematical problem solving and thinking. An innovative educational intervention drawing upon Fleer's (2018) Conceptual PlayWorld (CPW) has been developed over the study to support 3-year-old children's mathematical concepts learning through their imagination in play. A CPW approach starts with a selected storybook, where children and teachers build emotional connections with the story characters, taking character roles, before they enter the PlayWorld environment. Once in this space, teachers act as an active co-player and dramatis the conceptual problem, which children and

teachers collectively solve in the imaginary situation. This paper draws upon the cultural-historical concepts of imagination and play, and the development of motives to investigate collective imagination for young children's mathematical learning in CPW.

Methods

We use Hedegaard's (2008) educational experiment as a research methodology in implementing mathematics education for young children. The collaborative work has been done over the educational experiment through the focus-group discussion, pre and post implementation interviews with the teachers and video observation of the implementation of CPW. The lens of this paper is centred on how children are motivated to develop the concept of directions through collective imagination in the playworld. The 10.5 hours of video observation of one focus teacher's mathematics intervention practices with 22 children at 2-3 years of age from one early learning centre in Melbourne, Australia and 2 hours of reflective interviews with the teacher have been collected. Fully informed consent was obtained from all participants, and pseudonyms were applied to protect privacy. During video filming, researchers withdrew from the situation if children showed signs of discomfort. The spirals of analysis (Li, 2014) and three levels of interpretations (Hedegaard, 2008) have been centred on the focus teacher and children's collective imagination in the exploration of the concept of directions in an educational experiment of *What the Ladybird Heard PlayWorld*.

Results

Within the *What the Ladybird Heard PlayWorld*, the focus teacher, Mary, acted as a farmer, specifically Farmer Jill's friend, and was invited to fix the farm after robbers had created a mess. Children acted *as if* they were farm animals from the storybook, such as ladybirds, horses, cats, etc. Mary dramatised the mathematical problem inviting children to find their home and draw a map of the farm (the PlayWorld environment - the outside area of the kindergarten). Collectively, the animals counted their walking steps between each other's homes to find out each location on the farm and draw a map. Within this process, one-to-one correspondence and the cardinal principle were applied to measure the distance. Children, *as if* they were animals, found their houses and considered directions, supported by the teacher (as Farmer Mary) asking questions such as, "Who is next to the cow"? and "Can we draw a pathway from the farmer's house to the pig house" etc. Directional language (i.e. behind, before, turn left etc.) was applied to collectively draw arrows on the map showing pathways among the animal houses. The CPW in mathematics provides opportunities for teachers and children through their imagined characters in play to develop a mathematics narrative, investigate mathematics problems, find mathematics solutions, and deepen mathematical thinking through collective imagination.

Conclusions

Rather than a static view of children's imagination and concept learning in play, the children's mathematical learning process illustrated in this paper highlights the dynamic interactions between children and the focus teacher by co-constructing mathematics narratives within the collective imaginary situation. The data show the collective imagination within CPW promotes children's development of mathematics narratives and drives children's exploration of mathematical problems.

How interaction with the participants is planned

We will show a short video clip of Conceptual PlayWorld in mathematics, and then we will develop interactive dialogue by inviting the conference audience to discuss the following two reflection questions:

- How do you see the imagination as a driving force in children's mathematics concept learning in play?
- How does the cultural-historical concept of play, imagination and motives inform teachers' practices?

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Chinese children's development of Engineering thinking in a Conceptual PlayWorld

Despite being one of the most practical and real-world domains all children can engage in, engineering learning is a significant yet underrepresented field in early education. Previous researchers have shown the importance of interactions and materials in promoting young children's engineering thinking. However, little attention has been paid to play pedagogies that promote Chinese children's engineering thinking in kindergartens. As part of an educational experiment, a Conceptual PlayWorld was implemented which consisted of an imaginary scenario where young children were invited to go on imaginary journeys, solve challenges (bridge building) and learn engineering concepts. Video observations of two teachers interacting with 28 children (4-5 years old) during Conceptual PlayWorld activities (27.91 hours), as well as children's interviews (4.02 hours) were analysed. Informed by a cultural-historical perspective of play and conceptual learning, this paper examines the conditions the Conceptual PlayWorld created for Chinese children's engineering thinking during their bridge-building processes. Analysis of one focus child was presented as an example of how the children met the demands of the new practices. Based on their everyday understanding of bridges, children in Conceptual PlayWorld sessions were motivated to learn engineering concepts by exploring concrete materials within imaginary situations. In addition, by integrating engineering concepts (e.g., structure) into meaningful social contexts, the Conceptual PlayWorld created conditions for the development of children's engineering thinking. Therefore, we argue that Conceptual PlayWorld provides a possible model for the development of Chinese children's engineering thinking within play-based settings.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

Early childhood is an ideal time to lay the groundwork for engineering understanding and to provide children with rich learning opportunities for engineering knowledge (Bagiati, 2011; English, 2018). Recently, early engineering education has gained increasing importance internationally, including in countries such as the US (Bagiati & Evangelou, 2016; Gold et al., 2020), Australia (Fleer, 2020), Sweden (Boström et al., 2022; Hallström et al., 2015) and Turkey (Ata-Aktürk & Demircan, 2021). What is common to previous early childhood engineering studies is that they mainly focused on early engineering learning through blocks (Bagiati & Evangelou, 2016), construction kits (Hallström et al., 2015), tangible materials (Bairaktarova et al., 2011) and loose objects (Gold et al., 2015). In line with the international trend, early engineering learning in Chinese early childhood education emphasises construction activities (Cai et al., 2021; Liu et al., 2022). However, there are limited studies on early engineering learning in China, and little is known about the development of Chinese children's engineering thinking in play-based settings.

Aims

This study aims to explore how Conceptual PlayWorld created conditions for the development of Chinese children's engineering thinking.

Methods

This study adopted the methodology of an educational experiment from a cultural-historical perspective (Hedegaard, 2008), which aimed to create optimal conditions for children's learning through play. Two teachers and 28 children within one class participated in this study. Ten sessions of PlayWorld, based on the book *Breg's Tornado (La tornade de Bregoulou)* (Boy, 2004), were implemented in this class.

The digital video observation method was used to capture children's conceptual learning during the Conceptual PlayWorld implementation. Specifically, this study utilised three cameras to capture the perspectives of children, teachers, and the entire activity setting respectively. Stimulated-recall interviews (Lyle, 2003) were conducted with the children during and at the end of the process, where children were shown photos and short video clips and invited to share their experiences. A total of 27.91 hours of PlayWorld video observation and 4.02 hours of children interview data were collected. Ethical approval of this study was obtained from the researchers' university.

Results

Firstly, this study found that imagination was the foundation for children's Engineering thinking in the Conceptual PlayWorld. By imagination, a PlayWorld serves as a prerequisite for consciously realising new roles and rules (Fleer, 2021). While the focus child, Xing, imagined himself to be an engineer building a bridge during play, he explored the rules of bridge building. During the bridge building in the collective imaginary situation, Xing started to think about how to make use of the materials, which further informed the exploration of the bridge structure (e.g. more bridge piers and a thicker bridge deck).

Secondly, children's everyday knowledge is the foundation for learning engineering principles. In this study, the teachers learned about children's everyday understanding of bridges by introducing an imaginary problem scenario (helping the forest animals rebuild a bridge that was destroyed by the tornado). The focus child, as an animal engineer, brainstormed the bridges seen in everyday life and planned for rebuilding the bridge. Everyday knowledge is necessary for young children to develop their scientific knowledge (Vygotsky, 1987). In this study, the teacher carefully considered children's everyday knowledge about bridges to further promote their development of engineering thinking.

Thirdly, The Conceptual PlayWorld can promote children's engineering thinking by integrating engineering concepts with meaningful social purposes. The core engineering thinking attribute is "making 'things' that work and making 'things' work better" (Lucas & Hanson, 2017, p. 5). In this study, the focus child Xing focused on constructing a bridge that was both strong and capable of bearing significant weight, continually thinking about the engineering concept of the structure during their process. Furthermore, aiming to ensure the safe passage of animals, people and cargo over the bridge, Xing and peers adapted their previous structure by incorporating railings, a modification inspired by new demands in play to meet the new social purpose.

Conclusion

Based on everyday knowledge, children's engineering thinking developed in the collective imaginary situation of the Conceptual PlayWorld, which was shown through the focus child Xing's understanding of the engineering concepts. By continuously modifying the materials and structure of

their bridge, Xing and peers, not only enhanced their bridge design but also advanced their engineering thinking. In summary, the Conceptual PlayWorld provides a possible way to develop children's engineering thinking through dramatised problems, tangible materials and meaningful social contexts in the Chinese context.

How interaction with the participants is planned:

In planning interactions with participants, we encourage discussion about children's engineering thinking by sharing photos of their bridge-building process, focusing on the roles of play and imagination.

Possible questions for discussion:

- How do play and imagination create conditions for the development of children's engineering thinking?
- How can teachers encourage children's scientific knowledge development based on their everyday knowledge in play?

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Entrance to a Narrative Playworld: from Emotional Co-regulation towards Imaginary Play

This research aims to analyze the entry strategies into a collective playworld. Studies (Bodrova, 2008; Elkind, 2007; Smirnova & Gudareva, 2017) have shown a decline in children's play skills, although play is the first autonomous activity (Hakkarainen, 1990) that a child can do on his or her own. It forms a crucial role in the child's development and education. In a cultural-historical framework, the pedagogical adult play strategies that help young children participate in collective imaginary play based on emotional self-regulation are still questioned (Fleer & Hammer, 2013; Fragkiadaki et al., 2021). The research used a qualitative case study design. Playworld sessions occurred in the Play Research Laboratory and a kindergarten group setting. The play intervention involved creating dramatic events for the child to experience with an adult. All participants gave informed consent following university ethical procedures; children could withdraw at any time and were aware of the camera recording. Microanalysis of ethnographic digital visual data (Hedegaard, 2008) captured adult and child behavior changes. Three cases of entering the imaginative playworld were analyzed. Any interaction or intervention starts from emotional attunement and adjustment to the child's/children's emotional state and evaluation of their zone of proximal development. The second step involves capturing children's attention and turning it towards an imaginary situation through familiar cultural objects, signs/symbols, etc. Detailed research has shown that children's ability to engage in and create imaginative situations facilitates their adaptation and helps transform undesirable behavior positively.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Background

Play is the first autonomous activity (Hakkarainen, 1990) that a child can do on their own, and it plays a crucial role in the child's development and education, however studies have shown a decline in children's play abilities and that results in the underdevelopment of imagination, self-regulation, and other mental functions. If early educators could adequately engage in play activities with children, it would create a space where shared emotions and experiences between children and adults are formed – *soperezhivanie* (Vygotsky, 1999; March & Fleer, 2016). After the analysis of theoretical

works and empirical research, a theoretical mechanism of the development of emotional self-regulation is constructed (Sujetaite-Volungeviciene, 2022) as follows: emotions are collectively created during play through co-regulation (shared activity); using a shared technique for experiencing emotions (perezhivanie), adults' model emotional reactions during play; and gradually adult transfer responsibility to the children. It is important to refine and analyze the actions of adults that help children enter the world of imagination and solve difficult situations such as adaptation, children's shyness or inappropriate behavior, and others.

Aim

The main project analyzes qualitative changes in play activity, through which the process of integrating higher mental functions of emotional regulation unfolds. This research aims to analyze entrance strategies into a collective Playworld.

Methods

The research involved a qualitative case study design. Playworld sessions took place in the Play Research Laboratory and kindergarten group environment. Play intervention involved creating dramatic events for the child to experience with an adult. All participants provided informed consent in line with university ethical processes; children could withdraw at any time and were aware of camera recordings. The microanalysis of ethnographic digital visual data (Hedegaard, 2008) has captured adult and child behavior changes.

Results

Three cases of involvement in the imaginative Playworld were analyzed and discussed. The first case focuses on inviting children to a shared imaginary field through book reading. Ten children (0.5-4.3 yrs) participated in the morning circle area. Researcher No. 1 was reading a book, and researcher No. 2 reacted to the story with a teddy bear. Both researchers modeled emotional states arising from the picture book plot. Microanalysis showed four steps of entering the collective playworld: 1) Attunement to the children's emotional state. 2) Attracting attention (through body language, eye contact, vocalization, and cultural objects) and using the ability to signal the expression of an emotional state in the context of play. 3) Co-regulation to a collective emotional field and experience of emotional togetherness. 4) Readiness to enter imaginary play space.

The second case involved inviting a child into a shared Playworld using a cultural object (familiar toy). A boy (2 yrs) in a kindergarten group environment had difficulty engaging in activities. After a year, he still cried in the morning and did not want to attend kindergarten. Teachers created an individual Narrative incorporating imaginary characters and contexts familiar to the child. Three collective Playworld entrance steps were important: 1) Recognition of the child's zone of proximal emotional development. 2) Co-regulation in joint play with an adult. 3) Individual narrative Playworld as an adaptation strategy.

The third case analyzes adult intervention in children's play actions (shooting), intending to transform the undesirable course of children's actions into a joint imaginary play - Putting dangerous ocean snakes to sleep! A boy (2.2 yrs) arrived at PlayLab carrying three cardboard pistols he made with his father. Another two-year-old boy took a keen interest in the pistols, and within a few minutes, the boys started shooting. After observing the situation, investigator No. 2 put on her pirate hat and, sitting in a cardboard lifeboat, invited them to join her in a fight against the dangerous ocean snakes. We elicited three Playworld entrance steps: 1) Attunement to the children's emotional state and zone of proximal development. 2) Attracting children's attention and inviting them to a new imaginary

situation through a familiar cultural object (Pirate ship). 3) Collaborative co-creation of an imaginary Playworld.

Conclusions

Analysis of three cases shows that entering collective imaginary play requires sensitive pedagogical attention. The teacher can take several sequential steps to help the children engage in the collective Playworld. Firstly, any interaction/intervention starts from emotional attunement and adjustment to the participants' emotional state and evaluation of their zone of proximal development. The second step involves capturing children's attention and turning it towards an imaginary situation through familiar cultural objects, signs/symbols. Our case studies have shown that children's ability to engage in and create imaginative situations facilitates their adaptation and helps transform undesirable behavior positively.

How interaction with the participants is planned

In planning interaction with participants, we intend to share a short video of collaborative imaginative play and encourage discussion about the concept of emotional co-regulation and the entrance of an adult.

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315 An expansive learning investigation into inclusion in the agrarian political economy value chain, SA

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: agrarian political economy expansive learning formative intervention

SHORT ABSTRACT

In 2019 a Constitutional Court decision to legalise cannabis revived and recentered debates the role of this high value product in the South African agrarian political economy, raising many complex questions around access, skills, policy, beneficiation and more. This research, using third generation Cultural Historical Activity theory, seeks to generate learning-oriented developmental pathways that are socio-economically sustainable and commercially viable premised on principles of inclusion and equity, especially black women farmers who are facing ongoing exclusion and marginalisation, despite high potential for inclusion in the emerging cannabis value chain. The paper reports on phase 1 of this research, which identified a complex range of interacting activity systems, and some significant contradictions which, if not engaged could lead to further marginalisation and exclusion of black women farmers in South Africa. Key to these is the need to address policy contradictions, as well as contradictions related to the means of empowerment for black women farmers. It also raised questions as to 'who is a farmer' given the cultural historical production knowledge of black women farmers in the Eastern Cape, but who are not being seen or supported to become beneficiaries of this value chain, due to the contradictions identified. The paper will show how these contradictions emerge, and also how I plan to engage them further through a second phase of research where the involved activity systems will potentially join into expansive learning processes to generate potential solutions to the contradictions identified.

EXTENDED SUMMARY

Background

In 2019 a Constitutional Court decision to legalise cannabis revived and recentered debates the role of this high value product in the South African agrarian political economy, raising many complex questions around access, skills, policy, beneficiation and more. This emerges against a background of historically structured race and gender inequalities that continue to influence and or shape the land, agriculture and development debates in South Africa, particularly affecting black women farmers. With ongoing market failures to support inclusion, a more people centred economic framework that attends to the cultural historicity of agrarian praxis in South Africa and "how knowledge is built up" (Poole et al., 2013, p. 157) through legitimization of contextually rooted knowledge production (Feldmand and Biggs 2012) is needed.

The study is located in the Eastern Cape (EC), where the government is allocating ZAR 45 million to the development of the industry. A draft cannabis master plan has been released by the government with measures to lift the restrictions on the commercialisation of cannabis and hemp. Here a long cultural history of production of this plant exists, with over 900 000 small scale farmers cultivating the plant. There are also efforts to formalise training for cannabis production through a cannabis college pointing to a rapidly emerging industry with high potential for meaningful empowerment and inclusion.

Aims

The aim of my PhD study is to generate learning-oriented developmental pathways that are socio-economically sustainable and commercially viable premised on principles of inclusion and equity. The aim of this paper is to elaborate findings on the first phase of the research, which identified activity systems and emerging contradictions, informing the emergence of the potential developmental learning pathway referred to above.

Methods

Aligned with a critical perspective on political economy analysis in South Africa, the study adopts cultural historical approaches, specifically third generation Cultural Historical Activity Theory, with its potential to transcend dichotomies in the “micro and macro, mental and material, observation and intervention in analysis and redesign of work” (Engeström 2000, p. 900), and its potential for engaging participants in the formation transformed activity (in the cannabis industry) that will potentially be enabling to the “democratisation of social, economic, political and cultural life” (Fiorelli 2012, p. 274).

As a formative interventionist researcher my role involves surfacing insights into the activity systems and their relations (including contradictions) with stakeholders from diverse activity systems (phase 1). Following this, I will work with women farmers and other activity system actors through an expansive learning process to respond to the emerging “contradictions, conflict and breakdowns in the coordination of new systems” (Foot 2014, p. 134) (phase 2). Phase 1 fieldwork has focussed on identifying vertical, horizontal and bilateral forms of engagement and associated activity systems that draws on cultural-historical understandings of human functioning. This was done through interviews and field-based examinations of the emerging value chain, at local, provincial and national levels.

Results

Through this I have identified the various interacting activity systems, and I have analysed some of the emerging contradictions. Results of this phase of the research show that:

There are a complex range of activity systems (governance activity systems; donor activity systems; market activity systems; farming activity systems; and extension and training activity systems) that are meant to be interacting across levels to advance the emergence of the cannabis / hemp value chain. There are, however, significant structural or systemic contradictions that are disrupting the possibilities for black women farmers to access the emerging cannabis value chain. Key amongst these are blatant policy and skills system contradictions. Rhetoric from state and private sector indicates that the emerging value chain has potential to create jobs (i.e. access into the value chain). But there is contestation around who the beneficiaries are, and there is a lack of recognition of the long histories of production of this product in the EC amongst rural communities. Another key contradiction relates to the means of empowerment of black smallholder farmers, particularly inadequate access to the forms of literacy necessary for accessing and participating in the agrarian

political economy. And, there is an inability from the state to support sustainable business incubation i.e. transitioning and skilling pathways for black women farmers.

Conclusion

The lack of attention to the cultural histories of the primary activity system (black women farmers), and the misrecognition of them as capable farmers in this value chain points to a continued culture of marginalisation and exclusion in the agrarian political economy. Furthermore, continued knowledge extraction coupled with lack of adequate empowerment tools for accessing the economic potential of the value chain exacerbates the marginalisation and exclusion.

This opens up possibilities of co-engaging the governance, farming and skills development activity systems along a possible expansive learning pathway for black women farmers.

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318 From “emergency room” to “ecological transition”: responsive collaboration in child protection

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Ecological transition Responsive collaboration Child protection

SHORT ABSTRACT

Pronto Intervento is an Italian expression that can be translated as “emergency response”. In the Italian child protection system, it is usually referred to as *Pronto Intervento Minori* (PIM), a primary resource for dealing with emergency situations and responding rapidly to children and families living in a situation of vulnerability.

The research aims to explore the reconceptualization of the PIM motive during a Change Lab as an expansive learning process. PIM work is configured as a new metaphor that describes PIM professionals as actors who not only attend to individual needs but also to the developmental potential of systems during transitions.

Furthermore, the ethnographic research was an opportunity to use the reflective activities and tools already used by the PIMs as second stimuli, moving from a reflective to an expansive stance in reconceptualizing their motives and positioning within the local welfare network.

EXTENDED SUMMARY

Background

Pronto Intervento is an Italian expression that can be translated as “emergency response”. In the Italian child protection system, it is usually referred to as *Pronto Intervento Minori* (PIM), a primary resource for dealing with emergency situations and rapid response involving children and families in a situation of vulnerability.

Our case study focuses on Milan, where PIM has gradually defined its function and methods in a unique way and within a network involving social workers, health systems, civil registry offices, courts and law enforcement agencies. PIM aims to support children and their primary caregivers during transitions that require immediate professional assistance, such as family homelessness, children and families arriving in the city as undocumented migrants, or the removal of children from the family ordered by the court in cases of severe risk. The key concept we have used to understand the rationale of the PIM’s work is ‘transition’, specifically Bronfenbrenner’s ecological transition (Bronfenbrenner, 1979; 2005). This concept refers to actors’ experience of the expansion and change of their environment and its affordances, seen as a space for learning and development.

Following a major reorganization of emergency social interventions in the municipality, the PIM working group has launched a Change Lab (Virkkunen, Newnham, 2013) with two researchers to precisely define its approach and function within the welfare system in Milan.

Aims

The research aims to explore the reconceptualization of the motive of PIM during a Change Lab as an expansive learning process. This objective includes a knowledge level that aims to capture the key aspects of PIM's identity, methods, values and positioning through a multivocal perspective involving all actors inside and outside the local network, and a transformative level that aims to create a new set of guidelines that can better represent the current PIM approach than the commonly used metaphor of "emergency room" that did not seem to represent it adequately.

Methods

The data collection and analysis followed two interconnected lines:

- 1) an ethnographic research using observation of team meetings, document analysis, interviews and focus groups with key stakeholders (PIM team, social workers from the municipality, psychologists, coordinators, local welfare manager, consultants from the municipality, educators and psychologists working in residential care, and a mother) was aimed at both describing the organizational culture of PIM and identifying key elements that could be used as second stimuli during the Change Lab sessions.
- 2) the Change Lab sessions, which were recorded and analyzed, included group discussions with key stakeholders of the PIM system and focused on the historical analysis of PIM and its changes due to new global phenomena (migration, wars...) that have shaped the identity and functions of PIM; on current professional practice, highlighting the key aspects and tools that perform their activity, relations with local community actors, rules and division of labor.

Results

In the course of the Change Lab sessions, professionals seemed to recognize a distance between their work and the current representation of themselves and their organization as "emergency experts" whose intervention is limited to responding quickly to immediate, mostly instrumental needs, and focusing instead on the complex, emotionally challenging and systemic work of supporting children and families who are in a process of transition, often associated with disruptive events. Exploring the actors' experience and trajectories during this phase led the group to work on a new metaphor to configure PIM's focus: while previous narratives defined it in a medical language as an "emergency room" focused on providing first aid and referring the "patient" to a social care service once stabilized, the new metaphor describes PIM professionals as actors who take care not only for individual needs but also for the developmental potential of systems during transitions.

Conclusions

During the Change Lab sessions, PIM emerged as a collective actor embedded in the local welfare system. Being at the forefront of emergent phenomena and social challenges, it calls on the whole system to engage in 'responsive collaboration' which, according to Edwards (2011, p. 33), requires 'an additional form of expertise which makes it possible to work with others to expand understandings of the work problem as, in activity theory terms, an "object of activity"'.
Furthermore, the Change Lab was an opportunity to use the reflective activities and tools already used by the PIM as second stimuli, moving from a reflective to an expansive stance in reconceptualizing their motives and positioning within the local welfare network.

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321 Studification as the expansion of inclusive practices of the youth workshop

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: activity concepts contradictions multi-professional networks

SHORT ABSTRACT

Aim

Youth workshops are coaching communities for young people at risk of social marginalisation or in a weak labour market position. The studification of workshop means identifying the learning environments and setting up the practices for recognising learning, demonstrating competence and granting diploma in cooperation with educational institutes. Studification is a new activity concept alongside other workshop activities setting pedagogical and collaborative challenges for professionals. This study was interested in the consolidation of the non-traditional learning activity and the problem discourses produced when striving for the expansion of inclusiveness of young people through education.

Method

The interview data were collected from the professionals of workshop, vocational school and social services having participated in the development of studification. The analysis explored the expansive solutions of the studification activity and defined the problem discourses related to the consolidation of studification.

Results

The case of studification in one Finnish regional workshop cast light on the possibilities to expand inclusion of young people through education. The development of a new activity concept in the collaborative network takes place at the intersection of contradictory social discourses that require consideration and resolution to establish alternative learning opportunities to young people.

EXTENDED SUMMARY

Background

The extended compulsory education (age 18) in Finland highlights the need for alternative and supported forms of learning for young people. The case of studification (in Finnish, "opinnollistaminen") of youth workshops partly answers this need. The youth workshop is a flexible environment adapting to the changes of the societal structures and legislation while helping young people (and adult participants, as well) to live a good everyday life and promoting their education and careers (Paving the Way, 2017). Cooperation with the local network of workshops, vocational training and services is active. However, the production of a new social activity in the intersection of professional fields forms a challenge for professionals. Their collaborative efforts to expand inclusive

practices involve transcending the boundaries of expertise to combine education, social and health care, employment services and social policy support measures for the benefit of young people's learning paths (Ylimaula & Suorsa, 2023).

Aim

The study analysed the preconditions for the consolidation of non-traditional learning activity in the youth workshop (studification) and the problem discourses produced when striving for the expansion of inclusive practices to that of education (Ylimaula & Toiviainen, 2022). We propose that the networked co-construction of the studification activity means the development of a new *activity concept* (Virkkunen, 2007) demanding wider scope of multiprofessional collaboration. The development and implementation of a new activity concept is an expansive process in which developmental contradictions take shape. Research questions were: RQ1: What type of expansive solutions have been created in the development projects for the youth workshop studification? RQ2: What are the problem discourses emerging in the consolidation of the new activity concept (studification)?

Methods

The methodology of the cultural historical activity theory and the developmental work research (Engeström 2015) offers this research conceptual tools. The notion (the 'concept') of activity concept refers to the operational logic underlying the practices and structures of the unit analysed (Virkkunen, 2007), such as an organisation or a collaborative network. An activity concept reflects the entire mode of production and the way of constructing the object of activity, such as a client's needs of care or a youngster's learning. The changing activity concept can be analysed by relating it with the elements of present, historically evolving activity and identifying its expansive and contradictory future potential. The analysis was carried out through two phases. First, the expansive potential of the elements of the studification activity were identified based on the professionals' accounts. The second phase applied the discursive expressions of contradictions (Engeström & Sannino, 2011) to analyse the problems emerging in implementing the new activity concept.

Results: The analysis of studification as an activity concept revealed the collaboratively developed expansive solutions transforming the elements (the subject, the object, tools, rules, communities, and the division of labour) and their mutual relationships. The analysis of problem discourses, on the other hand, showed that the promotion of educational opportunities and the recognition of learning by young people at risk of social exclusion take place in a contradictory field of diverse societal demands. Different interests shape new learning concepts and set conditions for their implementation. The problem discourses can also be interpreted as the quaternary contradictions evolving in the consolidation phase between the workshop and its neighbouring activities (Engeström, 2015). For the new activity concept this meant clashes and discontinuities related to project-based development, networking, bureaucracy, and the models advocating the indicators of profit, educational impact, and capacity-building.

Conclusions

This study is the first effort to model the youth workshop studification as an expansive activity concept developed through multi-professional and -institutional collaboration. In addition, the problem discourses addressing the consolidation of a novel learning/education concept outside the formal education system help in understanding the conditions for further development of learning possibilities that promote social inclusion of young people.

How interaction with the participants is planned?

Stirring up discussion with statement and question:

Education has a significant impact on gaining recognition, and in the everyday experience of education and schooling, some learn to work (Willis, 1977) and others learn to take positions of power (Choudry & Williams, 2017).

Question: Can everyone develop their abilities and influence society, and if not, what are the implications for society's functioning?

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323 Expansive learning and framing of enabling learning pathways for youth and work for the common good

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: Youth development expansive learning formative intervention

SHORT ABSTRACT

In South Africa the crises of youth unemployment (>60% youth unemployment rates) intersects with ever-increasing water quality issues (massive failure of waste water treatment plants for example), and dysfunctional governance systems. In response, community-based, collaborative community-public-private programmes using citizen science tools are being conceptualised to create work for young people while addressing water quality issues, framed as 'work for the common good'. Using cultural historical activity theory research approaches, and interviews with different activity systems, especially the EnviroChamps who are youth being employed to undertake community-based citizen science projects, this research seeks to find out how these programmes can be more effectively situated in the national landscape of skills development and beneficiation for youth. A first phase of the research shows emerging challenges and contradictions, most notably linked to poorly articulated learning pathways for this important form of work, which affects opportunities for recognition of the work, skills gained, and the occupation itself in the national landscape. The next phase of the research will engage stakeholders in expansive learning engagements with these contradictions. Ultimately we hope to expand the notion of work for the common good by articulating river health monitoring as a viable work practice and to model a future's focused learning pathways for young people into this form of work

EXTENDED SUMMARY

In South Africa the crises of youth unemployment (>60% youth unemployment rates) intersects with ever-increasing water quality issues (massive failure of waste water treatment plants for example), and dysfunctional governance systems. In response, community-based, collaborative community-public-private programmes using citizen science tools are being conceptualised to create work for young people while addressing water quality issues, framed as 'work for the common good' (Phillip, 2013; The Presidency, 2023).

In this context, Environmental Champions (EnviroChamps) take on the role of community activists who contribute to national mass employment programmes premised on the concept of 'building a society that works' (to date three national pilot programmes employing >2000 young people have been put in place). However, the contribution made by a large, distributed network of youth EnviroChamp collectives is undermined by short government project funding cycles and insignificant reward from a training and professional progression perspective. Research on education for sustainable development in South Africa shows that despite well-crafted policies on sustainable

development and vast rhetoric on a just transition, there are no clear implementation mechanisms; poorly defined [environmental] learning pathways and a largely reactive skills development system (Lotz-Sisitka and Ramsarup, 2017) that fails to recognise new and existing practices/occupations such as that being filled by the EnviroChamps. It is this problem that this study seeks to address.

Aims

The aim of my PhD study is to employ an expansive learning process in the development of new occupationally directed learning pathways in community-based water quality monitoring in KwaZulu Natal.

The aim of this paper is to elaborate findings on the first phase of the research, which identified activity systems and emerging contradictions, especially from the perspective of the EnviroChamps.

Methods

The study will employ third generational Cultural Historical Activity Theory, through a formative intervention research approach that uses activity system and contradictions analysis and works with participating activity systems through a series of change laboratory workshops that follow an expansive learning process. In my study, these Change Laboratory workshops are being used to collaboratively expand the shared object of activity which is to work towards recognition of the work and learning pathways of EnviroChamps in the national system of skills development.

As a formative interventionist researcher my role involves surfacing insights into the activity systems and their relations (including contradictions) with stakeholders from diverse activity systems (phase 1), especially the EnviroChamps. Following this, I will work the EnviroChamps and other activity system actors through an expansive learning process to respond to the emerging contradictions and challenges that we may identify. Phase 1 involved interviews and field-based examinations of the experiences of the EnviroChamps and associated groups who are involved in the citizen science practices.

Results

Results of the phase 1 fieldwork are indicating that:

Within the EnviroChamps activity system there exists primary contradictions within the 'tools' of the activity system. Reflecting on their years of experiences within their scope of work, EnviroChamps expressed challenges associated with achieving the roles necessary to do their work. Data collection using a dual mode [mobile phone and book reporting] is major component of river health monitoring in the EnviroChamps projects, but this also requires stakeholder and community engagement processes to make sense of the technical data collection processes amongst the communities where they work. A limitation for many EnviroChamps is the inability to translate technical data and to communicate [often] scientific data with ordinary citizens. There exists a [shared] intellectually understood motive between NGOs, private sector and local government for community based water quality monitoring and engaged activism yet there is little clarity on the positioning of EnviroChamps from a labour market demand point of view. Key stakeholders are able to articulate the benefit from collaborative efforts addressing water quality, environmental restoration and weaving a social fabric through various EnviroChamps programmes however it is not clear where the training of EnviroChamps will lead. Within the community of practice, as the citizen science work is expanding, training is offered according to the needs of organisations with little to no clear alignment to existing occupations which has led to no retention or recruitment of EnviroChamps. This aligns with EnviroChamps concerns. The lack of accredited training offers them little except years of experience

which cannot be utilised in any other field of employment. A 2nd generation activity system analysis of envirochamp community based river health monitoring practice indicates that inadequate funding or sustainable funding flows perpetuate the short termism of conventional mass employment programmes.

Conclusion

Despite widespread appreciation of the community based, citizen science water quality monitoring and management work, there are challenges from a training and funding perspective. In the next steps of this research, we will use the emerging contradictions to model solutions as interventions in addressing capacity building and innovations around funding mechanisms.

Interaction with participants

Presentation with question and answer session

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324 Developing a team's collective tactical knowledge and understanding: a cultural historical approach

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Galperin Zone of proximal development Learning

SHORT ABSTRACT

The purpose of this study was to critically adopt Piotr Galperin's cultural historical theory (Galperin, 1992) to further develop a football team's conceptual knowledge and understanding. His pedagogical phases were implemented during video analysis sessions at a semi-professional football club over the course of a season. Using an action research design, data was collected using a combination of videos from analysis sessions and semi-structured group interviews. The findings suggest that the pedagogical phases acted as a meditational tool to transform social activities into internal activities. This created a zone of proximal development (Vygotsky, 1978) for coaches and players to develop an intersubjective tactical understanding of maintaining appropriate balance between in possession and out of possession actions. Although the findings suggest tactical consciousness was enhanced, each pedagogical act also became a test of social competence, as players aligned their solutions with coaches' expectations to be considered for selection. This highlights that a coach's choice and use of language, plays a significant role, in 'framing' pedagogical interactions and shaping the team's intersubjective conceptual understanding (Thomas et al., 2021). These findings advance the worth of Galperin's cultural historical theories as a 'foundation for action' (Jones, 2019) to better understand, support and develop both the act and process of sports coaching.

EXTENDED SUMMARY

Background

During the last 20 years, innovative developments in team strategy and technological advancements have had a significant impact on coaching pedagogy and how team sport is played (Brümmer, 2019; FIFA, 2020). Despite the increasing use of video analysis by coaches to develop tactical understanding, there has been limited research of pedagogical practice under which such potential can be realised (Cuevas, Quilon & Garcia, 2020; Jones, Rand & Butterworth 2020). In an attempt to advance the conceptualisation of coach and player learning, tentative steps have been taken using the work of cultural-historical theorists (e.g., Vygotsky and Leontiev), as a foundation to develop the pedagogical practice of coaching on and off the field (Jones, Edwards & Viotto Filho., 2016; Jones, Thomas, Nunes & Viotto Filho, 2018). It was another cultural-historical theorist, Piotr Galperin (Galperin, 1992), however, who further developed Vygotsky and Leontiev's ideas, explaining how a structured pedagogical process can guide learners' cognitive development for practical and theoretical improvement (Engeness & Lund, 2020). He explained that a person's ability to think in

abstract terms are mediated and meaningful actions, and engaging in such actions, reflects the advanced organisation of an individual's world (Galperin, 1992).

Aims

In response, the purpose of this study was to critically adopt Galperin's theory to further develop a team's tactical knowledge and understanding. Here, his pedagogical phases were implemented to analyse video sessions over the course of a football season. Given the widespread view of a progressive socio-pedagogical activity, the research objectives focussed on examining: (1) the players' and coaches' conceptual development; and (2) if and how this learning was influenced by relational and contextual factors.

Methods

The design of the project was drawn predominantly from tenets of action research to develop practical solutions to everyday issues that coaches and players face, and to bridging "the gap between research and practice" (Price & Polister, 1980, p. 7). The research, through which Galperin's pedagogical framework was delivered, took place at a semi-professional football club during the regular season. The focus was on the reserve XI, where 16 players participated in the analysis sessions, while the researcher adopted a facilitative role, acting simultaneously as facilitator and authority figure (Kaner, 2002). The principal methods utilised to gather data were those of video recordings and focus group interviews. In total, eleven analysis sessions were recorded using a video camera and six semi-structured focus group interviews were conducted with the coaches and two groups of five players. Due to the study's sequential nature, analysis was an ongoing process through a unified relationship between collecting data and its analysis (Costello, 2003). This was an iterative process, alternating between etic and emergent (i.e., emic) readings of the data, allowing for the combined analysis of video sessions and focus group interviews (Tracy, 2013). Data analysis, therefore, throughout the research was ongoing and inclusive of both "theoretical discovery" and "theoretical refinement" (Puddephatt et al., 2009, p. 15).

Findings and Conclusions

The findings provide evidence that Galperin's theory acted as a meditational tool to transform social activities into internal activities, developing the team's shared tactical understanding. Galperin's pedagogical phases formed a ZPD (Vygotsky, 1978) allowing players and coaches to identify tactical solutions using a scheme of action, collaborative discussions and interacting with technology. Through this 'visibility' of thought, intersubjective consciousness appeared for coaches and players, rather than individual interpretation of tactical situations (Roth & Radford, 2010). This insight into the ZPD in action, presents coaching as a progressive and transformative socio-pedagogical activity, which enhances players' conceptual understanding and agentic capacity to contribute meaningfully to complex situations (Thomas et al., 2021).

The findings also add a layer of complexity when merging the social with the pedagogical. Despite the enhancement of tactical consciousness when utilising Galperin's phases, the dominant 'defensive' discourse greatly influenced what the players were 'seeing', acting as key performance 'descriptors' (Livingston, 2008). Each word in these interactions, therefore, also reflects a social, political, and theoretical position influencing collective thought and analysis of tactical situations (Roth & Radford, 2010). Consequently, each pedagogical act became a test of social competence, with players having to align tactical solutions with coaches' expectations to be considered for selection (Brümmer, 2019).

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326 A cultural-historical analysis of Interaction in a collaborative classroom

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: perezhivanie inclusion collaborative classroom

SHORT ABSTRACT

Perezhivanie, social situation of development, subjective configurations, and dramas (dramatic events) are used as the conceptual lens to explore interactions and change in student participation in a collaborative classroom. The teacher researcher (second author) implemented social practices in her year 3 collaborative classroom to support student participation and decision making on action. The social environment as a source of development only exists when the person "participates in this environment, by acting, interacting, interpreting, understanding, recreating and redesigning it". Veresov (2016) further explains it is factors in the environment refracted through the prism of the person's emotional experience (perezhivanie) rather than factors in the environment by themselves that determine how they will influence the course of a person's development. In focusing on the generative character of emotions Gonzales Rey (2014) argues that emotions always lead to the emergence of new symbolic processes. Dramas create opportunities to transform the social situation of development and the students' individual and group understandings of themselves. The research involved a year-long ethnographic study with data sources of video recordings of class activities, interviews with students and their parents, and written reflections by students, teacher researcher and researcher. The Vygotskian concepts helped explain how students' participation in activities increased in number and complexity over the course of the year. Interactions created dramas which challenged students to participate in different ways and rethink their understandings of themselves and how they learn. Their social situation of development was transformed, and each found a place to learn and develop differently.

EXTENDED SUMMARY

This paper uses Vygotskian cultural-historical concepts, such as perezhivanie, social situation of development, subjective configurations, and dramas (dramatic events) to explore interactions and change in student participation in a collaborative classroom. The teacher researcher (second author) implemented social practices to support student participation and decision making on action in her year 3 classroom. These included a daily social circle where students identified and expressed their emotions, a weekly class meeting where identified issues were discussed, solutions suggested and then tested, and collaborative groups (Tribes) with a leader and vice leader selected by group members.

The social environment as a source of development only exists when the person "participates in this environment, by acting, interacting, interpreting, understanding, recreating and redesigning it" (Veresov, 2016, p.132). Veresov explains it is factors in the environment refracted through the prism

of the person's emotional experience (perezhinvanie) rather than factors in the environment by themselves that determine how they will influence the course of a person's development. In focusing on the generative character of emotions Gonzales Rey (2014) argues that emotions always lead to the emergence of new symbolic processes, which in turn evoke emotions and “configure endless chains of subjective senses that are organised as subjective configurations in the course of human action” (p. 434). These reflect a person’s history of experiences. Dramas, characterised by challenging interactions, create opportunities to transform the social situation of development and the students’ individual and group understandings of themselves (Rubtsova & Daniels, 2016).

The research involved a year-long ethnographic study with data sources of video recordings of class activities, interviews with students and their parents, and written reflections by students, teacher researcher and researcher. Transcripts of students’ interactions in the classroom, interviews and reflections were analysed to identify perezhinvanie experiences, and particularly dramas, and students’ expressed feelings and subsequent actions. The concepts were used to explain transformation in the classroom, following a similar approach to Rubtsova & Daniels (2016).

Martin and Gemma had a small social circle and preferred to learn in the background. Martin was a gifted student and past experiences created a subjective sense that peers did not support his learning because he already knew more than they did. He preferred working independently. But in a new context where students were actively creating and recreating the social situation of development with their peers, during the social practices and team building activities, Martin changed his perspective and realised the social benefits of working with others. Martin was voted leader in Tribes 1 which he refused but compromised to become vice leader instead. He said, “I like working by myself as it is a bit annoying to help others catch up” (Martin, Tribes 1). He didn’t “want too much control over people” – but may have meant responsibility. By end of the year, he reflected “I’m an organiser and ideas person...people don’t always agree with me, but later in year I was more confident and listened to other people ... then people would listen to me a bit more since they got to know me from Tribe in term 1”. In contrast Gemma struggled academically and developed a subjective sense that she had few ideas to offer peers. But being in a collaborative classroom with opportunities to be a leader which was about ‘helping others’ aligned with her personality and subjective sense and she became keen to become a leader. Gemma stated, “I don’t want to be selfish, I wouldn’t boss people around, I would support them and do anything they needed me to do” (Interview, end term 1). Gemma was voted leader for Tribes 2, with her friend as vice leader. The teacher promoted strategies for leaders in term 2, and Gemma tried to support members of her tribe, initially with some difficulties as she was undermined. She reflected “I encourage them saying they can do it... try ideas, telling more things for the group ... I have learned that I can really do it” (Interview, term 4). Reflective communication supported transformation for both students.

The classroom focus was on the generative character of emotions, creating new symbolic processes. Students embraced opportunities to express their emotions during social practices, collaborate and learn from peers which created a dynamic social situation of development. Students reframed their subjectivities which is argued increased their participation with peers and enhanced development. Students were willing to try new things, take responsibility and value the different ideas generated through group discussion. Thus, the interactions created dramas which challenged students to participate in different ways and rethink their understandings of themselves and how they learn, as well as their potential for change. The different classroom practices provided opportunities for

dramas followed by reflective communication, resulting in the social situation of development being transformed for these students.

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327 Students, partners and staff: Boundaries and transformations in Community Engaged Learning

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Community Engaged Learning University Education Learning Potential

SHORT ABSTRACT

In universities worldwide, community engaged learning (CEL) gains traction, motivated by the idea that the university needs to respond to societal issues of today and tomorrow. As a result, we see growing engagement of staff, students and larger communities in CEL. CEL has transformative learning potential for all actors. According to boundary crossing theory, transformation is regularly realized when confronted with boundaries between disciplines, organizational units, roles of students, staff, professionals and education, science and society. This study aims to identify boundaries and learning potential of CEL in order for universities to foster responsiveness. We conducted interviews with students, staff and partners engaged in 35 CEL initiatives across a large university in The Netherlands. Our preliminary findings show that three types of boundaries are meaningful for learning in CEL initiatives: boundaries in terms of (1) actor roles, (2) academic disciplines, (3) systemic practices. We found that boundaries seem to encourage (new) insight into the roles of actors, disciplines and practices involved although roles and perspectives may remain separate. In other instances boundaries encourage new hybrid roles, hence transformation. For example, roles of students and societal partners seem to shift from more passive receiver of knowledge to active agents during the CEL initiative. Implications of this study can help university education in being or becoming (more) responsive to current and future societal issues.

EXTENDED SUMMARY

Background

University education faces the challenge of how to organize and structure education to adequately respond to issues of today and tomorrow with and for society (Vereijken et al., 2023). Community engaged learning (CEL) is a means to the end of responsiveness that universities are after. The need for CEL in university education arises from relevance, societal issues at hand, which call for meaningful engagement of staff, students and their larger communities (local, regional, national or global) in addressing a particular issue (Akkerman, Bakker, & Penuel 2021; Farnell, 2020; Preece, 2017). According to boundary crossing theory, the development of new ways of doing and thinking for individual staff, students, partners, groups, teams or parties and/or the university is anticipated to appear when actors cross boundaries (cf. transformation, Akkerman & Bakker, 2011). In CEL it is to be expected that actors involved, depending on the initial system(s) they participate in, cross and explore boundaries between disciplines, organizational units, roles of students, staff, professionals and on system level boundaries between education, science and society. Previous studies show that

for example disciplinary and role boundaries carry learning potential of which transformation is only one way of learning (Baumber et al., 2020; Cai & Lönnqvist, 2022). In another extreme form, these boundaries can manifest in hesitancy or confusion, for instance about work processes and roles, but also in conflicting opinions about what is at stake in CEL initiatives (identification, Akkerman & Bakker, 2011; Hannon et al., 2018; Shephard & Santhakumar, 2024).

Aim

The domain of university education still seems to struggle to define and identify CEL (Farnell, 2020; Kelly & Given, 2023; Nguyen & Jessen Condry, 2023). To take it even further, it may seem that CEL is becoming a new objective of university education (Salam, 2019; Tijmsa et al., 2020). Other scholars argue that the meaning of CEL can only be understood in relation to what is at stake, hence the object of collaboration, albeit a problem, issue, theme or discipline (Brabant & Braid, 2009; Preece, 2017). With this study, we aim to identify the positions and learning potential of CEL through the eyes of students, staff, partners and parties involved in CEL initiatives across our university. Deeper insight into meanings of CEL can help university education to being or becoming more responsive to current and future societal issues. The research question is *What boundaries do students, staff and partners cross in a rich diversity of community engaged learning initiatives and what is the learning potential of those boundaries?*

Methods

In this explorative interview-based study we interviewed students, staff, partners and parties of 35 CEL initiatives across our university. The interviews were about the issue(s) at hand, ways of working and learning in the initiative. All interviews were transcribed and analyzed using a matrix approach (Miles et al., 2014). Currently, the cross-case analysis is in completion.

Results

Our preliminary results show three types of boundaries with implications for the emerging learning potential. First, boundaries between roles of student-staff-partner. Actors seem to have separate roles, namely the student as the one who goes from the university into the 'real' world collaborating with partner(s), the staff as facilitators and the partner(s) as client with an issue to which the student is looking for an answer (identification). In other initiatives and over time, differences between roles seem to fade (transformation). As one staff member puts it, when discussing the partner role: "Last year [partners] were more like the backdrop against which students learned [...]. Now from the very beginning we have invited [partners] to be part of the process and join the course. [...] How will this unfold [this year]?"

Second, there are differences in boundaries between disciplines. On the one hand, there are initiatives where disciplinary perspectives coexist without integration as completely different perspectives. On the other hand, we see transformation. Boundaries between disciplines are permeable - perspectives coexist and integrate in order to understand the issue at hand: "[We learn from] multi- and interdisciplinary approaches to sustainable development. This is done so that students from various academic backgrounds can participate as there are many different approaches to sustainable development." (student)

Third, there are initiatives in which the object of practice is systemically defined as education or research (identification), whereas in other initiatives the object of practice is a social intervention.

Conclusion

So far, we conclude that boundaries exist and affect the learning potential on three levels. Namely, on the level of 1) humans involved, manifest in how roles are addressed potentially shifting over time, 2) content-wise on the level of disciplines and 3) on system-levels of education, research and society.

How interaction with the participants is planned

To spark a plenary discussion we will ask the audience to share their initial thoughts on this study in pairs during and after the presentation.

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328 In the immigrant women's integration process, learning to cycle can be an important activity.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: integration culture differences cycling

SHORT ABSTRACT

Based on The Activity theory, this study emphasizes cultural differences when it comes to cycling. Three activity systems collaborate to help adult immigrant women learn cycling. This study aims to provide knowledge about cultural differences related to cycling. Our findings can bring knowledge in an overall perspective about how a quite simple activity such as learning cycling can be a helpful tool in an integration process.

We did qualitative interviews with immigrant women about experienced cultural differences in cycling, and about what they describe as their outcomes after learning cycling. We have an inductive approach to the data material through constant comparative analysis - by coding and categorization. We got interesting findings about the importance cycling for themselves, their integration process and, for society. The two women who came from countries where it was forbidden for women to cycle, saw the cycling women in Norway as an expression of equality and freedom. One of the others described cycling as a major health benefit for herself. Through cycling courses in a voluntary organization, they were social with both Norwegian women as instructors and other immigrant women, and they improved their language. Cycling gave them great mobility as they could cycle quickly to school, leisure activities, meetings and to manage shopping in their daily life. Some mentioned that cycling could be a door opener to get a job. Several of them were aware that cycling can contribute to a better climate and environment in society.

EXTENDED SUMMARY

Background

Our research is about immigrant women who come from Africa, Afghanistan, Iran, and Turkey to Norway where there is a different culture for cycling than in their home countries. We want to present our findings about how adult immigrant women get help to learn cycling, and what kind of outcomes mastering cycling gives when they are in their integration process.

In Norway, immigrants meet a cycling culture where people of all ages are cycling. Public documents emphasize that increased use of bicycles brings cross-sectorial benefits related to health, green environment, and economy (Civitas, 2012; Directorate of Public Roads, 2012; Ministry of Transport, 2017). Those public documents do not mention adult immigrants and other ones who do not master cycling. There are no official documents which provide guidelines about a public course to teach immigrants to cycle, nor in the curriculum for adult education of immigrants (Norwegian Directorate of Higher Education and Skills, 2021). It seems to be taken for granted that adults master cycling.

In our culture, it is expected that parents or other adults teach their children to cycle. The primary school organizes cycling days, based on that the children have learned basic cycling. In an earlier DWR project, one of the findings was that young boys aged 16-18 years from Afghanistan did not master cycling (Dalland, 2020). Findings and knowledge from that project inspired us to get more knowledge about adult immigrant women who learned cycling after moving to Norway. This led to our research question:

What kind of outcome do adult immigrant women have when they learn to cycle in their new country?

We wanted to provide more knowledge about cultural differences related to cycling, and how do they describe their outcome? In this case, there is a collaboration between three activity systems (Engeström, 2001): The female volunteers organisation, The immigrant women themselves, and The local municipal represented by a coordinator and the local school for adult immigrants. The systems are collaborating about the object: learn to cycle.

Aims

In this study, the aim is to provide knowledge about cultural differences related to cycling and to provide findings that can give an overall perspective about how quite a simple activity as cycling can be a tool in integration process for adult immigrants.

Methods

To answer the research question, we did qualitative research interviews based on a guide with open questions. As the seven participants come from different countries and cultures, we interviewed them alone, except in one, where the one participant helped the other one with the language. The interview with the Turkish woman was done in Turkish, as one of the researchers come from Turkey. In the first interviews we were two researchers together. After the interviews, we have done transcriptions and used the constant comparative method of analysis (Postholm, 2010; Strauss & Corbin, 1998). We did inductive analyses with open coding in a dynamic process.

Findings

Our preliminary findings suggest that learning to cycle is of great importance for the immigrant women which influence their integration into Norwegian society. Especially for two of them coming from Afghanistan and Iran, where women are not allowed to cycle, cycling as a woman in Norway is a big cultural difference. Their first meeting with all the cycling women in Norway, was an image for gender equality for them. Others come from countries where it was legal, but not a culture for cycling as a women, or it was too risky to cycle in traffic. In their personal level, learning to cycle led to mobility and independence when they can cycle to city centre, school, leisure activities and meetings. One had a great health benefit with a significant weight reduction after training with her bicycle. She said: *Cycling gives joy in life.*

When it comes to element that society describes as important for being integrated, this study suggest that cycling makes it easier to get a job, and that cycling reduce transport costs. Through cycling, they gained a better understanding of the traffic system, and they discovered other parts of the local area. Some of them argued about that cycling is good to reduce emission. They also improved their language through the interaction with others in the course and through greater opportunity to be mobile and participate in leisure activities.

Conclusions

Our preliminary conclusion is that public authorities must become more aware about that many immigrants do not master cycling and ought to be given equal possibilities to learn cycling all over the country. Authorities should be aware of cycling as a good tool in integration processes and introduce cycling course for immigrants in public plans and curriculum about education of adult immigrants, early in their integration process.

Interaction with participants

Start with a dialogue about cycling culture in the participants' home country.

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330 The “Momentum Project” - Students’ and teachers self-realization in organic process of learning

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: organic learning self-realization incomplete teaching

SHORT ABSTRACT

The aim of the paper is to analyze the conditions of the organic learning process of teachers and students using the example of a three-year educational initiative, the Momentum Project, implemented in a private school in Poland. Our study is based on Vygotsky's concept of education as an organic process within a social situation. The organic and functional nature of education reveals not only its unique and inimitable, but also its often unpredictable nature. We will present transformations in the social context of development in the area of: relationships, social and physical space, time organization, actions. We used formative interventions to develop the "Momentum Project" together with teachers and students. The participants were a group of students consisting of the two final grades of primary school and the first year of high school (aged 13-15), two tutors, and experts-researchers. The main results of our intervention research were to identify the complex conditions influencing teachers and students learning and development, including organic deepening and broadening relationship (with parents, local community, academic teachers and students, professionals), psychological unity, shared *perezhivanie*, agency (from recipients to co-creators), self-realization.

EXTENDED SUMMARY

Background

Our research is theoretically underpinned by the concept of education as an organic process in social situation. The organic and functional character of education reveals not only their unique, inimitable but also their often unpredictable nature. The trajectories and forms of transformation are dynamic and dependent not only on actual conditions but also on the historical conditions of their origin and development. This means that education must be creative in its essence. The subject in his actions (students, teachers, community), in the acts of his creative self-activity is not only revealed and manifested; he is created and defined in them. Education is thus the site of the creation of the organic unity of the child and its environment. Consequently, those who undertake formative interventions aimed at creating a social situation find themselves in a special role, as they have to avoid putting themselves in a position of authority. Their task is not so much to design the education as to create unity of them, not so much to tie them as to stimulate the natural, organic processes of their formation.

Aims

We analyze transformations in several closely related areas of teachers' and students' everyday activities. The first is the uniqueness of the relations between teachers and students. The second is the classroom timetable with specific actions and educational solutions. We also focused on changes in the social environment as well as in the physical space of the classroom. Our intention was to identify the conditions of the organic learning process of both teachers and students.

Methods

We carried out our project over three years. The intervention research took place in five phases: a preparatory phase and four cycles linked to the subsequent semesters of classroom work. In the first part, which lasted one year, two teachers and the headteacher developed the concept and detailed solutions for the Momentum Project. They cooperated with educational experts and researchers, teachers from foreign schools and staff. The school year was organised in three phases: I. Introducing students and parents to the Momentum working methods (pedagogical tools: Project Based Learning, eduScrum, Growth, Mindset). II. Individual or team projects carried out with a tutor and mentor. III. Interdisciplinary projects carried out independently. Students completed two projects per semester. Each intervention cycle lasted one semester and consisted of: regular, twice-monthly meetings with tutors, a group discussion with students, observations of different student and tutor actions, short interviews with parents.

Results

- **becoming universal learners:** students identified interesting and important problems (what?), set goals (why?), planned problem-solving strategies (how?), cooperated with a mentor (with whom?), realized their project and evaluated the whole work (for whom and what next?)
- **linking personal experiences and interest of students in formal education:** the students themselves defined the topic of the project, which required them to integrate knowledge from various areas of formal education, including: art, science, social science, civil responsibility, personal development, and climate awareness.
- **students' self-realization by interpersonal interactions:** during the implementation of the projects, students could try different roles (researcher, organizer, creator, partner, co-worker) in various social environments (local community, university, business, social media).
- **teacher's and student's agency:** school projects were linked to social engagement and participation in national and international projects: Odyssey of the Mind, Samsung.
- **teaching as teachers' self-realization:** teachers created an international community of teachers (regular workshops), reflected on the meaning of education and looked for answers to the teacher's role.

Conclusion

The "Momentum Project" was a social development situation created by "incomplete orientation activities". It was an example of organic education, in which the world of the student and the world of the teacher are mutually embodied. The teacher makes room in himself and in his actions for the actions of the student, and the student incorporates the meanings and actions of the adult. This education is not strictly linear and imitative. Teacher and student are mutually attuned to each other and to the socio-cultural conditions of their actions. El'konin calls such adult actions incomplete because they are supplemented by the actions of children. The socio-cultural process provides tools

and supports the development of students and teacher's agency, self-regulation and self-realization, both intrapsychically and socially. By reinterpreting and demonstrating the possibilities of using one's own experiences and those of the surrounding world, teachers strengthen the agency of students.

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333 Abduction and Ascending from the Abstract to the Concrete

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Creative ways to do research

Keywords: Ascending from the abstract to the concrete Abduction Imaginative theorizing

SHORT ABSTRACT

The method of ascending from the abstract to the concrete (AAC) is a classic methodological approach applied in activity theory. Abduction, on the other hand, is a “weak” form of reasoning developed by C. S. Peirce at the turn of 19th-century which is central on analyzing how ideas are generated. Abduction was for long a neglected topic but nowadays often used in methodological literature. We argue that novel formulations of abductive methodology have interesting parallels to the method of AAC. The aim of the paper is to analyze abductive elements in the formulations of the method of AAC in order to develop analytic elements in the AAC method further. On the other hand, the AAC method brings forth ways of developing abduction in relation to research on practices and activities. The methodologically oriented presentation is based on an analysis of different interpretations of abductive methodology and the method of AAC. We use examples from our own empirical research on the formation of theoretical concepts to specify the usage of these methodologies, that is, we aim at bringing reconstructions of the AAC method and abduction closer to the “logic-in-use”. Despite differences, we argue that abductive methodology and the AAC method can enrich each other and provide conceptual tools for understanding concept formation and “imaginative theorizing” in the research on transformation of activities.

EXTENDED SUMMARY

Abduction and Ascending from the Abstract to the Concrete

Background

The method of ascending from the abstract to the concrete (AAC) is a classic methodological approach applied in activity theory to depict non-linear and creative processes on how theoretical concepts emerge and are developed in thinking (Ilyenkov 1982/2008). It has provided a powerful model for activity theoretical formulations of research methodology based on dialectics (Miettinen 2000; Engeström et al 2012; Dafermos 2018; Vetoshkina & Paavola 2021).

Miettinen (2000; cf. Dafermos 2018, 258) has succinctly depicted the whole process of AAC in three basic steps on the basis of Marx’s depiction in Grundrisse (1858/1973): a) The first step starts from the concrete, chaotic conception of the whole. b) The second step is the formation of theoretical abstraction. It descends to the abstraction of the basic determining categories. c) After this it ‘rises’ again to the concrete whole as ‘a rich totality of determinations and relations’.

We argue that novel formulations of abductive methodology have interesting parallels to the method of AAC (see e.g. Paavola 2021). Abduction is a form of reasoning developed by Charles S. Peirce at the turn of 19th-century as a “weak” form of inference which is central how ideas are developed. We interpret abduction as a logic of discovery (Paavola 2023). Abduction was for long a neglected topic in methodological literature but nowadays often used in various ways to depict controversial and unclear processes of generating fertile hypotheses and theories during the research process (e.g. Timmermans & Tavory 2012).

Aims

Methodological literature is often more about “reconstructed logic” than actual “logic-in-use”, to use Kaplan’s classic distinction (Kaplan 1964). Both AAC and abduction aim, however, to depict “possibility knowledge” (see Engeström 2007) in methodology, that is, concepts and ideas in movement and transformation. The aim of this paper is to analyze abductive elements in the formulations of the method of AAC in order to develop analytic elements in the AAC method further. On the other hand, the AAC method brings forth ways of developing abduction in relation to research on practices and activities.

Methods

The presentation is based on an analysis of different interpretations of abductive methodology and the method of AAC. We use examples from our own empirical research on the formation of theoretical concepts to specify the usage of these methodologies, that is, we aim at bringing reconstructions of the AAC method and abduction closer to the “logic-in-use” (see Kaplan’s distinction above).

Results

First, we discuss the relationships between abduction and the AAC method. Both are targeted at opening up creative processes of concept formation. A clear difference is that formulations of abduction has typically been targeted at a kind of research where the aim is to find hypothetical, causal explanations (as in “classic” natural science) whereas the AAC method is aimed at finding practical, “germ cell” kind of ideas to be developed further (see also Paavola 2021).

Second, we analyze parallels with the formation of theoretical abstraction according to the AAC method and abduction. Davydov has made a distinction between the empirical generalization and the theoretical generalization (Davydov 1990, 130-137) which has an affinity with Peirce’s distinction between induction (targeted at empirical generalizations) and abduction (targeted at new ideas) respectively. Both abduction and AAC require the use of sensitizing concepts (Blumer 1954).

Third, we analyze the step of rising to the concrete whole in the AAC method. In the standard forms of abductive methodology this corresponds to testing a hypothesis. We argue, however, that the natural scientific model of testing is not the most apt methodological model for research on transformations of activities or practices. This part of the AAC method challenges standard models of abductive methodology and is more in line with the idea of a working hypothesis than “testing”.

Conclusion

Despite differences, we argue that abductive methodology and the AAC method can enrich each other and provide conceptual tools for understanding concept formation and “imaginative theorizing” in the research on transformation of activities. Our presentation is a part of our broader aim at developing usages of abductive methodology in the analysis of empirical research (Hofmann et al, 2024).

How interaction with the participants is planned

The presentation is planned as a traditional PowerPoint-based paper presentation with questions and comments in the end of the presentation.

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338 A cultural-historical approach to caring for infants and toddlers in early childhood education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Care Infants and toddlers Early childhood education

SHORT ABSTRACT

With reference to the Brazilian context, this paper examines the concept of care in educational processes of infants and toddlers. Building on the cultural-historical perspective, we argue that care is not limited to basic needs of feeding and hygiene in themselves, but instead it involves social and cultural development. Care is a social situation of development that dialectically intertwines the physical-biological condition, the disposition for communication, and the activity of the human infant with the social environment. We bring an empirical case of a 10-month-old baby in their first transition to early childhood education. Through microgenetic analysis, the findings illustrated actions of care as a processual, shared and negotiated effort of multiple others around a developmental trajectory that required relational, material, and temporal support for bolstering further autonomy and security of the baby in a new educational context. The case highlights the role of shared and collaborative activities in cultural development and demonstrates that care requires meeting infants and toddlers as human subjects through attentive observation and responsiveness to their demands in various situations. Therefore, care also entails supporting the infant's transition from a family space to an educational one, promoting actions with objects that generate new interests in the cultural environment, and facilitating shared activity between the child, the adult and their others. Care in the early years is thus manifested in interdependent relationships between infants and adults, in a continuous process of monitoring changes and in ways of relating to developmental characteristics and trajectories in this life stage.

EXTENDED SUMMARY

Background and aims

In the Brazilian context, there is an effort to overcome stereotypes in early childhood education that imply a primarily biological perspective of early childhood and reduce the act of caring to mere hygienist and assistance practices (Maranhão, 2000; Dumont-Pena & Silva, 2018). This interpretation of care in the early years often results in a narrow focus on basic hygiene and feeding needs of children, which are inaccurately considered peripheral in pedagogical actions and prove to call for further elaboration on the theme (Barbosa, 2000; Winther-Lindqvist, 2021). Given this scenario, this work aims to analyze the dimension of care in educational processes of infants and toddlers from a cultural-historical perspective.

Methodology

The cultural-historical tradition conceives human development as process of intense transformation, which, through mediation, converts the condition of a biological being into that of a cultural being. Vygotsky (1996) posits that in the first year of life, the human infant, in order to guarantee their own survival, depends on the more experienced other – the adult – to satisfy vital needs. As this condition of physical-biological and communicational dependence can only be established through the attention and care of adults, such dependence is affirmed to be an aspect of human life and a cultural achievement of the relationship established between those who care and are cared for. Therefore, care provided by the adult is a social situation of development that characterizes this lived moment and is a central route of the baby's activity. This means that their physical-biological condition is inserted and intertwined with the social environment and, therefore, from the first months of life, the child-world relationship is socially mediated. Given this, caring is not an act merely of meeting physical-biological needs, but an action that, by satisfying such needs, inserts the baby into a relationship with others which Vygotsky (1996) describes as a moment of maximum sociability. This way of reading the dimension of care, especially in the first year of life, guides new ways of interpreting, understanding, and acting in educational institutions.

Building on this theoretical foundation, we analyze care through an empirical case (Costa, 2021) of an infant's first transition to early childhood education. Employing the methodological lenses of microgenetic analysis (Góes, 2000; Rossetti-Ferreira et al., 2008), we compose a "micro story" detailing the processes of developmental change of a focal subject and seek to explore the relation between macro and micro aspects of development in/through social interactions of care by discussing how elements of culture come to dialectically support and organize development trajectories (Lavelli et. al, 2005; Rossetti et al, 2007).

Findings and analysis

The case in question refers to a 10-month-old baby who began attending an institution of early childhood education. Throughout their developmental trajectory across the transition process, the focal infant constantly required physical proximity to adults. This need was met with significant support from relational, material, and temporal resources from both the institution and family members in a relationship of shared, complementary, and negotiated care. Against this backdrop, we highlight an episode from the second month of attendance. Subsequent to the mediation of one of the teachers in encouraging the children to engage with the group and the material surroundings, the focal baby put down a plush brought from home and proceeded to choose a ball to explore. Faced with a momentary departure from the teacher, the baby cried briefly and hugged the stuffed animal again, but soon stopped crying and returned to manipulating the ball out of their own initiative. Such findings elucidate that care in early childhood education is associated with ensuring the wellbeing of these young human subjects through attentive observation and reflection on how to respond to their demands in various situations. These include transitioning from a family space to a collective educational one, promoting actions with objects that generate new interests in the cultural environment, or facilitating shared and collaborative activity between the infant and adult across various aspects of daily school life. Specifically, this shared and collaborative activity (Elkonin, 1969; Mukhina, 1996) is a unique form of the baby-adult relationship, in which the progressive approximation of the baby to the social world relies on the mediation employed by the adult, which ranges from attending to immediate physiological needs to the formation of cultural development

capabilities (e.g. locomotion and exploration, action with objects and forms of communication) – all of which are important achievements of this first year of life.

Conclusion

Thus, care comes about as actions and responsibilities that are shared among multiple parties connected across the overlapping contexts of children's everyday life (Barbosa, 2010). In the spirit of interdependence between relations and the developmental processes of children, the ways in which care is envisioned, negotiated and established pertains to proposals of a joint educational project (Hedegaard & Edwards, 2023; Singer, 1993).

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340 Bridging theory and practice through collective peer teaching in teacher education

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Presentation: Poster presentation (presented in person at the congress)

Theme: Bringing together theory and practice

Keywords: Collective peer teaching Theory and practice Teacher education

SHORT ABSTRACT

Norwegian teacher education is experiencing a deep crisis. Teacher students increasingly report dissatisfaction with the educational program and the number of applicants to the study is dropping. There is reason to question the success of the introduction of an obligatory five-year Master's program for primary school teachers in 2017. The official political motive behind the reform was to strengthen both the quality of the teaching subjects and the practical training. However, there seems to be a contradiction between the ideal of strengthening the quality and the reality of student dissatisfaction. Our working hypothesis is that this contradiction is triggered by the increasingly strong focus on fostering teacher students' research skills towards mastering the master thesis, at the expense of more pragmatic professional development towards mastering occupational challenges. Teacher students experience a huge gap between the lesson content and teaching at the Campus and the actual didactical, systemic and social challenges they are faced with when teaching in primary school. Therefore, in the spring term 2022 we initiated an activity theoretical self-study project at the Oslo Metropolitan University to address this issue. The purpose of the ongoing project is to model a new form of pedagogical practice at the Campus through collective peer teaching, which simply means letting teacher students take on leadership roles in the teaching activities. An interesting result from our latest evaluation show that our teacher students evaluate peer teaching as more engaging, meaningful and relevant than the teaching they receive from Faculty members.

EXTENDED SUMMARY

Background and Research aim

Our poster highlights collective peer teaching in teacher education. This is a unique instructional design that involves all students in being teachers for each other. The aim is to describe how collective peer teaching can bridge the gap between theory and practice in teacher education. One dilemma in teacher education is how to integrate theoretically based knowledge that has traditionally been taught on campus with the experience-based knowledge that students acquire in their placement periods in schools. Student teachers learn more effectively when ideas are reinforced and connected both in theory and in practice. However, it has been difficult to create this kind of coherence in teacher education. One of the main challenges has been that a lot of the course work at campus has been isolated from teaching practice (Baltzersen, 2023, Darling-Hammond, 2006).

Collective peer teaching addresses this challenge by transforming campus into a teaching practice that allows for active training of teaching skills. It is suggested that this type of instructional design can help teacher educators strengthen the link between theory and practice in ways that theorize practice and make formal learning practical (Darling-Hammond, 2006). Today, peer teaching is receiving increased attention as studies identify associated positive learning results across educational areas (Duran, 2017; Duran & Topping, 2017; Kobayashi, 2019). Little research exists, however, on what role collective peer teaching can play in teacher education.

Methods

Our poster presents empirical research conducted with pre-service teachers who are assigned to be teachers for each other in a collective peer teaching design. Building on Vygotsky's (1987) sociocultural theory of human learning and perspectives on collective peer teaching (Baltzersen, 2023), collective peer teaching is introduced as an activity with significant learning potential that has not yet been fully examined or realized as an expansive model of practice (Engeström & Sannino, 2010) in teacher education. Potential future consolidation of collective peer teaching in teacher education requires moving beyond dominant political discourses of the status quo (Stetsenko, 2016). Our interventionist design is inspired by the theoretical and methodological framework of cultural-historical activity theory (Engeström, 1987/2015; Engeström & Sannino, 2022), change laboratory (Virkkunen & Newnham, 2013) and self-study in teacher education (Cochran-Smith, 2005). In the fall semester 2022, we introduced a first model of collective peer-teaching in the pedagogy subject in the fifth year of the master's program for primary school teacher students at Oslo Metropolitan University. We have collected data from two semesters respectively in 2022 and 2023. Data consist of qualitative and quantitative student evaluations of collective peer teaching and observations of peer-teaching lessons. Colleagues from the department of physical education and students have acted as "critical friends", who have observed and discussed the lessons with us. We have used mirror data from student evaluations and observations from the first semester in 2022 as stimuli to revise the structure and content of the model the subsequent semester 2022. An interesting effect of the continuous development of the model is that student evaluation was significantly more positive the second semester.

Preliminary results

Our pre-liminary results from two cycles of developmental work during two student semesters, show that collective peer teaching stimulates professional learning and student engagement from within three learning positions (Baltzersen, 2023):

1. Learning by teaching your peers seems to have a positive effect on intrinsic motivation, higher order teaching skills and attitude towards collaborating with others.
2. Learning by being taught by peers seems to engage students by being closely connected to students' professional interests and learning needs.
3. Learning in a collective environment of peers seems to empower students. The learning environment is characterized by equity and diversity which stimulates individual reflexivity and sense of collectiveness rather than individual student competitiveness.

Interaction and dialogue

Our poster presents perspectives on how collective peer teaching can strengthen both student empowerment and deeper forms of learning in teacher education. The pedagogical principles related to collective peer teaching will be further developed in the teacher education program at Oslo

Metropolitan University, in the fall 2024. We suggest that important learning processes in teacher education have largely been overseen because of existing systemic contradictions and conflict of motives. We would like to discuss such contradictions and the possibility of transforming teacher education towards better integration of theory and practice. Finally, we would like to connect with people interested in transforming teacher education to better meet the contemporary and future challenges of the teaching profession and in schools.

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341 Do spiders share webs? Re-knowing nature through collaborative affective work

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with climate change

Keywords: energy communities common sensing democratic participation

SHORT ABSTRACT

The “green” transition from fossil fuel to renewable energy is vital to curb global emissions and yet socially contested. Locally this contestation emerges as seemingly irresolvable conflicts around solar and wind power projects. Findings from an empirical research collaboration with a public utility company highlight the challenges with establishing participatory community-based energy practices given the current technocratization and commercialization of renewable energy. Subject-scientific psychological insights reveal that the intersubjective work of reconfiguring existing *profit/stock* understandings and practices of energy sourcing toward understandings and practices of *commons/flows* of energy requires collective affective work that needs further theorizing. The paper proposes *common sensing* as the proto-conceptualization for this kind of *re-knowing* nature through work/energy.

The paper argues that, by revisiting Leontjev’s seminal spider example of our internally related ecology, a general need for shared exploration of environments can be traced: “threading webs” is not a solitary activity on given the state of the singular organism (for example, a person’s subjective reasons for action), but concurrently a social anticipatory and an evaluative sensing of possible (re)configurations of shared practices/environments. Empirical examples will underline how moments of *common sensing* hinge upon shared differences and thus a matter of developing each other’s possibilities for participation. Democratic inclusion in reconfiguring energy systems can accordingly not alone be juridically determined; it must (also) acknowledge the indeterminacy of shared embodied engagement in common causes.

EXTENDED SUMMARY

Background

The effects of global climate change are unequally distributed and so are the possibilities for partaking in the attempts at counter-acting the warming of planet Earth. Issues of inclusivity and participation have become matters of environmental and climate justice: whose voices and which lifeforms have a say in *how* we attempt to sustainably develop human praxis?

The paper presentation presents first findings from Jørgensen’s PhD-project *The sustainable development of human praxis*, which investigates the challenges and possibilities of counter-acting the global ecological crisis through the sustainable development of local practices. The project draws on subject-scientific practice-research (Højholt & Kousholt, 2019) and is founded upon a collaboration with a municipally owned utility in Denmark. The utility’s ambition is to cultivate collective climate

action and response-ability for the local environment, which is in turn challenged by different expressions of “local opposition” or rather: “power struggles” around issues of inclusion in and ownership over local energy transition processes (Franquesa, 2018).

In response to dominant decontextual and individualizing approaches within mainstream climate psychology the project’s theoretical framework is developed through a critical dialogue with various strands of practice-based, critical psychologies (Adams, 2021; Rätzkel & Uzzel, 2019), some of which share foundational roots with cultural-historical theorizing (Chimirri & Pedersen, 2019). This has led to theorizing the ecological crisis as *common cause*: a theoretical notion pinpointing how global crises, in their concrete mediateness, become aspects or concerns within everyday practices. Framing the ecological crisis as a common cause serves the purpose of highlighting how the ecological crisis cannot be isolated or abstracted away as pertaining to the singular individual or singular social practice.

In order to approach the development of practices as an exchange in the metabolic interrelationship with human natureculture processes (Stetsenko, 2019), the project specifically draws on transdisciplinary efforts within the environmental humanities to reconfigure the concept of *energy* (e.g., Daggett, 2019). Of specific relevance to the present paper is the seminal work of environmental historian Richard White (1995): By specifying the Columbia River as an *Organic Machine*, White demonstrates how humans throughout history have come to know nature through work. It is in this intersection that environments are trans-formed and thus human knowledges (of nature) are continuously re-shaped.

Aim

Subject-scientific psychological insights reveal that the intersubjective work of reconfiguring existing *profit/stock* understandings and practices of energy sourcing toward understandings and practices of *commons/flows* of energy requires collective affective work that needs further theorizing. The paper proposes *common sensing* as the proto-conceptualization for this kind of *re-knowing* nature through work/energy. The paper argues that, by revisiting Leontjev’s (1977) seminal spider example of our internally related ecology, a general need for shared exploration of environments can be traced: “threading webs” is not a solitary activity on given the state of the singular organism (for example, a person’s subjective reasons for action), but concurrently a social anticipatory and an evaluative sensing of possible (re)configurations of shared practices/environments. Empirical examples will underline how moments of *common sensing* hinge upon shared differences and thus a matter of developing each other’s possibilities for participation.

Methods

Findings are based on analyses of a two-year lasting, ethnographically documented research collaboration. The empirical material consists of qualitative interview data, participatory observation logs and workshop recordings. The presented theoretical developments emerged in dialectical exchange with the empirical material. Theory is thus approached as a function of becoming, and accordingly aims at developing more generalized possibilities for action.

Results

Empirical material indicates *trajectories of development* during the collaboration on a local ‘renewable energy community’, where participants via their *affective practices* (Wetherell, 2011) were able to transgress what they considered common sensical. These are prototyped as moments of *common sensing*, of open-ended social explorations of shared practices, whereby, through

differentiated engagements and distributed concerns, a *common cause* unfolded. The paper will highlight two instances of *common sensing*: 1) A meeting with a local district heating company, where “the wind-turbines sitting outside the play fields” became identified as *some-thing meaningful* in the development of a community of energy; 2) an instance during a community meeting, where the *affective work* of the participants led to the inclusion of additional participants and concerns, despite the risk of losing control over the projects future development. These empirical examples are argued to have allowed for *situated reconfigurations* of the concrete relations between forces of nature/energy, including land-ownership, people's participation, and the values or rather motives at stake.

Interaction

The presentation prototypes theoretical developments on the basis of first analytical findings. It explicitly invites the audience to a concluding critical dialogue about these tentative propositions.

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342 Dreaming a dream: Slow sleep in the future of Early Childhood Education and Care

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Imagining future worlds

Keywords: sleeping practices caring-with slow pedagogies

SHORT ABSTRACT

Based on cultural-historical theory (Engeström 1987/2015, Dafermos 2018, Levant 2018), in this presentation we will provide a speculative theoretical investigation of what alternative sleep practices in early childhood and care settings could possibly look like. Specifically, we will contrast our speculation with Clark's (2023) notion of slow pedagogies in early childhood education and with Tronto's (2017) democratic theory of caring-with, which acknowledges young and old as 'equally needy' citizens. We will enrich our investigation with our own empirical work regarding Danish and Finnish kindergartens and their sleeping practices (e.g. Chimirri 2024, Hilppö 2023). By this, our goal is to challenge and further develop current discussions about utopias which thus far have not touched on what the future of sleep could look like. In particular, sleep is discussed as a relational and material practice, which has the potential to question the artificial ideal of a societally well-functioning and productive individual contra a seemingly unproductive and 'needy' Other.

EXTENDED SUMMARY

Aim and background

Based on cultural-historical theory (Engeström 1987/2015, Dafermos 2018, Levant 2018), in this presentation we will provide a speculative theoretical investigation of what alternative sleep practices in early childhood and care (ECEC) settings could possibly look like. Specifically, we will contrast our speculation with Clark's (2023) notion of slow pedagogies in early childhood education and with Tronto's (2017) democratic theory of caring-with, which acknowledges young and old as 'equally needy' citizens. We will enrich our investigation with our own empirical work regarding Danish and Finnish kindergartens and their sleeping practices (e.g. Chimirri 2024, Hilppö accepted).

The rationale for our work stems from the apparent lack of sleep-focused studies in cultural-historical research, in the current educational literature on ECEC, as well as in educational research more broadly. While the importance of sleep, for example, on children's learning is well known (Walker 2008), a recent review identified only 38 studies that directly dealt with sleep practices or what impacted them in early childhood education (Hilppö accepted). Importantly, sleep and sleep practices are also curiously absent from our visions of future societies that circulate in and outside the academic literature. Apart from the hibernation of space travel, sleep is either fully lacking from these visions or pushed to serve progressivist agendas (with at least one notable SciFi exception: LeGuin

1972). While applaudable in other respects, these visions thus offer little direction or room to think differently about how we and our societies will sleep in the future.

Results

From a cultural-historical perspective, sleep-time in ECEC can be conceptualised as a practice or an activity setting embedded in the activity system of ECEC (Engeström 2022, Hedegaard 2012). As such, sleep-time consists of assemblages of concerted actions by the teachers, staff and children which aim at resting and relaxing as well as creating possibilities for this in ECEC. These actions are mediated by various sociomaterial artefacts/tools (beds, blankets, sleep toys, music, ways of soothing etc.), the division of labour between the adults and the children, as well as the rules of the group and follow a shared routine or a stable script of how sleep-time proceeds. Sleep-time and how it is enacted aspires towards the object of ECEC, supporting and guiding the learning, development and wellbeing of the attending children. Moreover, sleep-time practices are part and parcel of the activity system of the ECEC group and as such integrally extend and relate to other activity systems (Engeström & Sannino 2021). That is, sleep-time in ECEC is part of a broader network of proximally or distally connected activities, their objects and activity systems (like other groups and activities in the kindergarten, children's home's, etc.) nested in their particular societal and historical conditions.

While offering a robust conceptualization of sleep practices, this does not suffice to understand and challenge the more overall setup of ECEC's institutional embedding in overall ideals of what a well-functioning society could alternatively look like. By discussing this latter question with the help of Clark's (2023) insistence on (re)discovering the potentials of slowness in ECEC activities, in combination with Tronto's (2017) analysis of democracy as deeply dependent on trust and solidarity given the deep vulnerability and fragility of all citizens' existences, we come to propose sleep as a potentially emancipatory activity.

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343 ONLINE - Using developmental teaching to teach concepts for summary writing

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Meaningful education

Keywords: Developmental Teaching summary writing V.V. Davydov

SHORT ABSTRACT

Paraphrasing and summarization are foundational skills for academic literacy (Carson, 2001; Cumming et al, 2000) The research has focused on linguistic analysis of summaries (Keck, 2006, 2014), paraphrase accuracy (Du, 2019, Newman et al, 2018), and the effect of summary instruction on improvement of summaries (Ahn, 2022; Newmann et al, 2019). However, writing instruction that utilizes V. V. Davydov's developmental teaching approach (Davydov, 1988a,b,c,d) is scarce (Ferreira; Lantolf, 2008; Ferreira, 2018, 2021). This study aimed at investigating 10 Brazilian undergraduates' conceptual needs related to summarization based on a writing diagnosis and a summary test given after extensive feedback on summary features and how a developmental teaching task (model, problem solving task application of the model) could meet these needs. A germ cell model was designed to lead students to develop writing concepts (communicative situation comprised of goal and audience) that could lead them to understand summary as part of a general principle of communicative situation that affects linguistic choices. The data analysis reveals that two parallel processes occurred: a) significant learning characterized by linguistic changes; b) limited development of writing concepts such as communicative situation and audience. The study can shed light on traditional studies on summarization which are more limited to empirical linguistic analysis and propose a pedagogical intervention that can combine both learning of linguistic and genre features of academic texts with the development of key concepts that are tools to foster more agency in students' language use in general and in writing more specifically.

EXTENDED SUMMARY

Writing studies from a vygotskian perspective are still scarce (Antón & DiCamilla, 1998; Buescher, 2018; Ferreira; Lantolf, 2008; Ferreira; Mayrink, 2024) despite the increasing influence of a vygotskian view in the teaching and learning of additional languages (Lantolf et al, 2018; Lantolf; Poehner, 2014). Although paraphrasing and summarization are foundational skills for academic literacy (Carson, 2001; Cumming et al, 2000; Horowitz, 1986) the study of students' paraphrasing and summarization practices in an additional language has focused on linguistic analysis of summaries (Keck, 2006, 2014), paraphrase accuracy (Du, 2019, Newman et al, 2020), and the effect of summary instruction on the improvement of summaries (Ahn, 2022; Du, 2019; Newmann et al, 2019). However, to the best of my knowledge, writing instruction that utilizes V. V. Davydov's developmental teaching approach is scarce (Ferreira; Lantolf, 2008; Ferreira, 2018, 2021). This study aimed at investigating 10 Brazilian ESL undergraduates' conceptual needs related to summarization based on a writing diagnosis and a

summary test given after extensive feedback on summary features and at how a developmental teaching task (model, problem solving task application of the model) (Davydov, 1988a, b, c, d) could meet these needs. A germ cell model (Davydov, 1988a, b, c, d) was designed to lead students to develop writing concepts (communicative situation comprised of goal and audience) that could lead them to understand summary as part of a general principle of communicative situation that affects linguistic choices such as reporting verbs, reminder phrases, the amount of information reported and the level of summarizer's opinion present in the summary. The data analysis reveals that two parallel processes occurred: a) learning characterized by linguistic changes such as more use of reporting verbs, use of a topic sentence in the beginning of the summary, the level of neutrality due to this appropriate feedback received; b) limited development of writing concepts such as communicative situation and audience. In other words, students responded well to feedback on language and summary features while not so much to tasks that led them to identify communicative situations of different summaries and how they affected the linguistic choices. The developmental teaching intervention revealed how basic crucial concepts of writing are needed to be developed so that the very concept of summary can be fostered. This intervention needs to focus more extensively on how the germ cell model given can be more effectively used by the students to write and understand how language works in summaries. The study can shed light on traditional studies on summarization which are more limited to empirical linguistic analysis and propose a pedagogical intervention that can combine the learning of linguistic and genre features of academic texts with the development of key concepts, that are tools to foster more agency in students for language use in general and in writing more specifically. A conceptual investigation of this genre can improve its teaching, and as a result, can bring inclusiveness to college students who have academic literacy as the foundation of their assessment. Moreover, this conceptual focus can also assist the higher education sector in preventing plagiarism.

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347 Navigating diversity and inequality in early education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Early Years Inequality Teachers`Practical Knowledge

SHORT ABSTRACT

Equity as means to reach inclusiveness has become one of the main goals in education. To intertwine equity skills, knowledge and attitudes in pre-service teacher training is thus critical, since students must be prepared to work effectively (and fairly) in complex contexts marked by intersectional diversity and inequality.

We present preliminary data collected within the evaluation of a pre-service teacher training program. From the analysis of representations of students of what it means to be an early childhood teacher, how they deal (or not) with critical issues like diversity and inequality, their personal practical theories in use when beginning practical training and the way these practical theories can be (re)configured during training process, we seek to generate some contributions to the understanding of how concerns about equity are being dealt with in the processes of construction of professional knowledge of future early childhood teachers.

Data result from the content analysis of internships reflective diaries of 15 pre-service teachers with a special focus on which personal practical theories are mobilized to sustain their practices and, on the presence, or absence of equity related concerns.

Preliminary results reinforce the relevance of explicitly addressing equity, diversity, and inequality issues in early-childhood teacher training programs, as they seem frequently invisible to students, who tend to look and act based on the unspecified group development characteristics, dismissing relevant social and cultural characteristics. The role of communicative processes during internships and the supervising process seems to be critical to reconfigure the representations of students and trainers.

EXTENDED SUMMARY

Background

We support our analysis within a conceptual framework that assumes that reflecting on practice and the ability to theorize (Schön,1983 Shulman,1986, 1987) can make the teacher more competent in the production of knowledge and the reorientation of his own practice. The role of internships in real work contexts and the roles of supervising teachers has also been highlighted in research focused on the development of teachers' practical theories - "gaining insight into teachers' practical knowledge is just one element in the process of learning to teach" (Meijer, Zanting & Verloop, 2002, p.417). In this process, we recognize supervision as a support for the construction of personal and professional

knowledge, in which there is an intertwining of all those involved (students and supervisors) (Sá-Chaves, 2000).

Figueiredo (2013) reflects on the components of pedagogical content knowledge of early childhood teachers referring the "monopoly" of the theories of child development as the basis of the professional knowledge of early childhood teachers. The value of content knowledge has been emphasized by influence of sociocultural theories that recognize the importance of transmitting to new generations the heritage built from human activities in society and the possibility of the child to actively participate and become more relevant in the society integration (Dahlberg et. al, 2003, Pasqualini, 2006, Rogoff, 1990). However, equilibrium between these two contributions seems difficult to achieve. This is even more critical as inclusive education paradigm, towards a more equitable distribution of the educational common good, demands that reductive views of educational diversity are deconstructed, towards an intersectional perspective that includes all kinds of diversities and inequalities (Cerna et al., 2021).

In addition to the research on the components of the professional knowledge of teachers, the research about the practical knowledge that originate from experience (implicitly or explicitly) through personal practical theories (PPTs) indicate that they can influence teachers' action in the classroom and the opportunities that students must learn (Levin & Ye Ho, 2008).

Buitink (2009, p.119) refers to practical theories of teachers contain all the terms, notions, perceptions, opinions and beliefs that teachers use in curriculum development and when you think about the process of teaching and learning. One practical theory will be the sum of experiential knowledge that has been accumulated with personal and academic experiences and you could say that a teacher with a well-developed theory and practice have achieved explicit educational intentionality in their actions and is not limited to everyday aspects of classroom routines. The scientific dimension of their practical theories, supported by a robust rupture with common sense, prejudice and pre-conceptions, seems, however, difficult to consolidate.

Aims

With the aim to promote a better fit between what is learnt in pre-service teacher training and the increasingly diverse and complex contexts they will face as professionals; we conducted a study that addresses teacher practical knowledge at the early staged of pre-professional practices with children in early childhood educational contexts. Our objectives are:

Examine practical theories mobilized to frame practices and the construction of their professional identity; Explore the representations and attitudes toward diversity and inequality; Explore underlying concepts of child/children; individual/group.

Methods

The study draws on a categorical content analysis of 15 reflective portfolios of pre-service teacher students within their pre-professional practices, which are supervised in collective settings and individual in-person moments. Reflective diaries should reflect how knowledge is appropriated and articulated in their practices and provisional professional identity. As they deal with specific groups of children, they are forced to deal with diversity and equity issues, contributing to their personal practical theories.

Results

Preliminary results reinforce the relevance of explicitly addressing equity, diversity, and inequality issues in early-childhood teacher training programs, as they seem frequently invisible to students,

who tend to look and act based on the unspecified group development characteristics, dismissing relevant social and cultural characteristics.

In fact, these students' underlying conceptions about children often place them on a level of uniformity (e.g. all 3-year-old children are considered to have the same development, behavior and attitudes, as students often say "they are a "homogeneous" group") and young teachers' first dilemmas are associated to the perplexity caused by the diversity (developmental, cultural, economic) they find when observing their groups with the aim of building a curricular project. Dealing with diversity (and inequality) is then at the core of their curriculum development and defies traditional practices that are designed for the group, which they seem more comfortable with. Although it's just the reality of contemporary societies, this is frequently seen as an obstacle or a problem by students. Therefore, supervisors should be (pro)active participants in this process of professional knowledge construction and in the understanding of the issues and dilemmas inherent in the process of learning and teaching (Nolan & Francis, 1982). Despite all theoretical and technical training background, evidence of the students' practical theories reveals difficulties.

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349 Spearhead projects for the scholarship of university professionals: An online Change Laboratory

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: online Change Laboratory professional learning learning technology

SHORT ABSTRACT

This presentation will consider spearhead projects developed within an online Change Laboratory research-intervention. It will first consider the process by which the spearhead projects were developed in online workshops; and then highlight what these spearhead projects tell us about the contradictions the participants are facing in their practices and how they are expanding the object of their activity.

The initial aim of the project was to collaboratively re-design a facilitated, reciprocal national mentoring scheme for people involved in learning technology research and evaluation work. The project deployed a variant of the Change Laboratory methodology used by CHAT scholars for many years, but with workshops taking place online due to the geographical distribution of the participants and their constrained professional schedules.

Over the course of the research-intervention the participants expanded the object of their activity to consider broader issues of reward, recognition and resourcing for the scholarship of university professional staff (across the UK) and the potential for developing a supportive online community supported through the national Association for Learning Technology.

They developed a range of spearhead projects to address these aims, including a national award scheme for public recognition of good work, a charter of values which participating institutions would be asked to sign, and an online community platform for live online seminars and informal blog posts.

EXTENDED SUMMARY

Recent discussions have highlighted the conflicted roles and identities of university professional staff. Sometimes called third space professionals or blended professionals, such staff—including those concerned with libraries, estates or, in the case of this project, learning technology—face many work challenges in universities, including difficult career development paths, under-recognition, and professional isolation (e.g., Obexer, 2022). One particular issue is that many such staff are interested in carrying out research projects but receive little support or encouragement to do so despite working in academic research organisations. An established initiative, the *ALT ELESIG Research and Evaluation Scholar Scheme*, has for some time paired staff from different institutions who wish to develop their

experience in such work (mainly, but not exclusively, from across the UK). Occasional online webinars have supported the networking of the participants. Yet this Scheme, while well-appreciated and worthwhile, was proving insufficient to meet the scale and variety of participants' challenges. The initial aim of the project *ALT ELESIG Research and Evaluation Scholar Scheme 2.0* was to use a Change Laboratory research-intervention (cf. Engeström et al., 1996; Virkkunen & Newnham, 2013) to collaboratively re-design the existing Scheme, though with the work occurring entirely online. The existing slots for online webinars were repurposed to facilitate the delivery of synchronous online Change Laboratory workshops using the Zoom videoconferencing and Miro visual workspace tools. Around 20 participants from universities across the UK attended these workshops at approximately monthly intervals, where they addressed tasks oriented towards aspects of the expansive learning cycle (cf. Engeström, 2016). Over the course of the research-intervention, the participants expanded the object of their activity to focus beyond the re-design of the Scheme. They progressively concerned themselves with broader issues of reward, recognition and resourcing for those university professional staff wishing to undertake research and scholarship work. The presentation will focus primarily on two linked aspects of this project.

The first aspect is the design and enactment of an online Change Laboratory research-intervention to explore and reach towards potentiality in highly constrained professional circumstances. Change Laboratory projects have historically involved intense collaboration in co-present workshops (Virkkunen & Newnham, 2013). That has sometimes been done in university settings (Bligh & Flood, 2015), including for technology-related projects (Bligh, in press). Yet such work is difficult to achieve for collaborators who are geographically dispersed and/or time-constrained. In recent years, therefore, a small number of projects have explored how the Change Laboratory approach might be used in online settings (Spante et al., 2023; Moffitt & Bligh, in press). The present project explored the use of an online Change Laboratory to engage participants in expansive learning because the practice dilemmas they experienced included being isolated in disparate locations and with little institutional support for travelling to discuss research and scholarship-related problems. This part of the presentation will consider how double-stimulation tasks were adapted to the online settings and how participants engaged with those tasks to generate new knowledge. The audience will be invited to engage with an example of an online task on the Miro visual workspace using their own personal devices.

The second aspect is the use of spearhead projects as a means for the participants to address intimidating and immense contradictions in work activity systems. The concept of 'spearheads' has been developed as part of Sannino's (2020; 2022) work on warping in expansive learning. We understand spearhead projects as a mechanism by which participants purposefully disaggregate the situation they face. Collectively, spearhead projects address the contradictions that the participants have identified; indicate paths through the Zone of Proximal Development of their activity system; and serve as catalysts for pursuing the expansion of their object of activity. In the present work, participants developed nine spearhead projects. We will consider examples of these projects, including a national award scheme for public recognition of good work, a charter of values which participating institutions would be asked to sign, and an online community platform for live online seminars and informal blog posts. These projects will not be considered in detail, but rather taken as indicative of how participants sought to address specific contradictions in their activity systems and

expand the object of their Change Laboratory activity.

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350 Mediating The Development of ESP Communicative Competence Through S-L Approach in Indonesia

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Meaningful education

Keywords: mediation ESP communicative competence Service-learning approach

SHORT ABSTRACT

This research examines how and to what extent the S-L approach, implemented in an ESP course at the university level in Indonesia, benefits students in enhancing and improving their ESP communicative competence. It also aims to address the issue of what mediation-related activities, drawn from sociocultural theory, might occur during S-L activities, as well as the impacts of those mediation processes on the development of ESP communicative competence. Using a case study as the research design, observation, document analysis, questionnaire, and focus group were used to gather the data. The data collected from an Applied English study program at a university in Indonesia consisted of 59 second-year students in an English for customer service class, a module lecture, and ten community partners. The data collected was then analysed as one entity by employing the second version of the Activity Theory analytical framework. Findings show that S-L mediated the development of ESP communicative competence by having all three types of mediation: human mediation, material tools, and psychological mediation. Another finding was that S-L appeared to have mediated students' motivation by giving them the chance to apply their knowledge gained in the class to be used directly to help the surrounding community solve real problems.

EXTENDED SUMMARY

1. INTRODUCTION

Bringle & Hatcher (1999) define service-learning as a course-based educational experience where students engage in community service activities, reflect on their learning, and develop personal values and civic responsibility. This study aims to understand the extent to which S-L mediates ESP communicative competence development in an English-specific purposes class at the university level.

2. CASE STUDY

The study utilized an Applied English study program in Indonesia, focusing on English for business and tourism. 59 students, aged 20-21, participated, implementing the S-L approach. The S-L approach produced products such as a CS guidance book, training video, bilingual WhatsApp bot, and frequently bilingual QnA.

3. DATA ANALYSIS

3.1 Thematic analysis

The study employs thematic analysis, a qualitative analytical framework, to investigate observation results, document analysis, and focus group data. Thematic analysis involves six phases: familiarization, coding, theme search, review, definition, and writing up (Braun & Clarke, 2006).

3.2 Activity theory

Activity Theory (AT) Engeström (1999) was used in this study to analyze thematic analysis, document analysis, and focus group results from observation, document analysis, and focus group, providing a holistic understanding of students' activity systems for communicative competence development.

4. FINDINGS

4.1 Subject, object, and outcome

S-L enhanced students' ESP communicative competence by exposing them to English for customer service theory and practical implementation, emphasizing efficiency in museum greetings and mastering English vocabularies.

4.2 Mediation in S-L

For this study, the data collection results showed that various tools helped students mediate their ESP communicative competence from the S-L project. Those different tools were analysed in this research on three kinds of mediation (Vygotsky, 1978). Those are material tools, psychological tools, and other human beings.

Digital platforms

Participants used digital platforms like WhatsApp and Google Docs for collaborative work, following three rules in the AT analytical framework. They found product examples on social media and used language applications like grammar checking and CAT for proofreading and translation.

Teaching materials

The study highlights the importance of teaching materials, with focus groups using the Oxford Express Series textbook English for Customer Care. Participants used the book to create S-L products and modify it for specific field needs. The book provides comprehensive materials, expression, vocabulary, and strategies for effective English use in business contexts.

Psychological tools

The research found that participants used English as their target language and Bahasa Indonesia as their second language (L1) for communication and group discussions. L1 served as a mediation tool for interacting with local partners and discussing difficulties with English.

Human mediation

The study reveals that learning is a socially mediated process, involving interaction, shared processes, and individual and social aspects, making it crucial for effective ESP communicative competence development.

4.3 Contradiction

In this research, the secondary contradiction between the rules and community of activity is apparent in the data. The students and community partners mentioned that the S-L activity duration was insufficient.

5. CONCLUSIONS

The study found that the S-L activity outcome improved ESP learners' professional competence through three mediation methods: material tools, psychological mediation, and human mediation. The second version of Activity Theory was used to analyze the complex process. However, a contradiction was found in the S-L approach's duration and bureaucracy process, suggesting a longer duration for maximum effectiveness.

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353 "I wanted her to study, because I didn't have an education". Higher education and family support.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Higher Education Symbolic resources Inclusion

SHORT ABSTRACT

Access to higher education can be seen as a liminal experience, marking a significant disruption, suspension, or transformation of everyday life. This experience, characterized by both rupture and continuity, allows various actors to support new students through material and symbolic resources. Significantly, actors outside the institutions of higher education, such as family members, play a crucial role in the educational process. They provide essential messages, narratives, and sometimes directives to students as they navigate the process of being and becoming higher education members. This presentation will examine the learning experiences of Chilean students who are the first in their families to pursue higher education. It aims to uncover how their experiences are shaped by the support, expectations, and pressures exerted by their families throughout their educational paths. Employing a sociocultural psychology approach, we consider the families' perspectives to understand the plots and narratives students use to make sense of their educational experiences, acknowledging that individuals are immersed in diverse symbolic currents and resources to mediate these experiences. This presentation will share findings from a multiple case study conducted in 2021, which included 36 interviews with 18 students from a Chilean technical-professional institution and interviews with 15 family members.

EXTENDED SUMMARY

Being a student in higher education represents a challenging learning and development process. The realization of education at this level unfolds through educational devices, symbolic resources,

relationships, narratives, and practices, capable of involving and integrally transforming each student (Damsa & Jornet, 2016). Diverse forces render higher education today a space in crisis, strained by the recognition of this education as a human right (McCowan, 2013), while simultaneously grappling with the persistence of elitist practices (Gallardo et al., 2014).

Noting the global massification of higher education and the need to articulate socially inclusive educational practices, it is relevant to deepen the understanding of the higher education experiences of those who are the first generation of their families to reach this level. In the case of Latin America, this is urgent, considering the significant expansion of access to higher education.

Formation experience as a relational and situated process.

Access to higher education can be considered a liminal experience, representing a significant disruption, suspension, or transformation of everyday life (Stenner, 2018). In the face of this type of experience, which encompasses both rupture and continuity, various actors can provide support to new students. Within educational institutions, notable forms of support can be offered by teachers, student affairs professionals, mentors, and the students' peers. From outside the institutions, the presence and support of family members, neighborhood friends, and others with experience in higher education are important. They can provide advice, guidance, and symbolic resources (Zittoun et al., 2003).

This presentation will specifically focus on the learning experiences of Chilean students who are the first generation in their families to attend higher education. It will explore how their experiences are influenced by the support, expectations, and pressures offered by their families during their educational journey. In Chile, and generally in Latin America (Marzana et al., 2010), it is common for students to live with their families while pursuing their studies. Understanding this influence can be crucial in organizing articulation efforts by educational institutions.

To address this phenomenon, sociocultural psychology represents an interesting framework.

Sociocultural psychology recognizes that people are positioned in diverse symbolic currents (Zittoun, et al., 2003), being educational experiences a relevant space where to investigate the symbolic resources used by human beings to mediate their experiences through ruptures and transitions (Zittoun and Gillespie, 2015). The perspective of families of students in higher education could help to understand the plots and narratives available for making sense of this formative experience by new students in this educational level.

Method

To inquire about the pressures and support offered by family members of higher education students in Chile, a multiple case study (Stake, 1998) was carried out in 2021 with undergraduate students of a Chilean technical-professional higher education institution. Eighteen students were contacted and interviewed twice to explore their life and learning trajectories. Additionally, 15 family members or significant connections of the interviewees were also contacted to understand their expectations, apprehensions, and the support actions they provided. Each case was analyzed separately by a research team and then contrasted with the other cases. For data analysis we used different qualitative techniques (v.g. Bertaux, 2005; Flick, 2004). In the case of this paper, I will present findings derived from the inter-case analysis developed.

Results and Conclusions

As a result of the analysis, an important gender difference in the support received by the students was observed. Among the cases interviewed, mothers played a fundamental role, providing

emotional support and work in domestic tasks, ensuring study times and spaces, and financing some training costs. In many cases, the families offered guidance for the decision to study and encouraged, supported, and helped to give meaning to the process. For students, being the first members of their families in higher education represent both a source of pride and a burden or pressure.

In many instances, higher education is considered a family endeavor, with parents contributing support through motivational messages, assistance or by modifying home environments to facilitate learning. Conversely, there are occasions where families can hinder the pursuit of higher education, either through their absence or by directly conveying discouraging messages against choosing higher education.

The findings support the notion that the relationships, symbolic resources, and expectations provided by family members play a crucial role in students' higher education experiences in Chile. Describing this dimension is valuable, as it highlights how students' learning experiences are not isolated events. Instead, they are interwoven with a variety of experiences and 'life worlds' that play a role in their ongoing process of becoming students (Ramírez, 2023).

At the end of my presentation, I would like to compare the findings from the Latin American context with the training and teaching experiences in higher education of those attending the Congress. To initiate the dialogue, I will ask questions to the audience, projecting them on my last slide.

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355 Promoting Talk and Thought in Classrooms for Indigenous and Marginalized Children

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: classroom interactions marginalized children education

SHORT ABSTRACT

This symposium presents research on the Center for Research on Education, Diversity, and Excellence (CREDE) model that is based on Vygotsky's theory. The model includes seven principles of instruction for culturally and linguistically diverse children: (a) Joint Productive Activity: Educators and children collaborating to create products together; (b) Language and Literacy Development: Promoting the development of language and literacy throughout the day; (c) Contextualization: Connecting what learners already know from their home and community backgrounds to new learning experiences; (d) Complex Thinking: Developing learners' higher-order thinking; (e) Instructional Conversation: Engaging children through small group discussions; (f) Modeling: Providing examples as inspiration for what children will do; and (g) Learner-Directed Activity: Promoting children's decision-making in the learning process. The presentations highlight use of the CREDE model in classrooms for Indigenous and marginalized children in preschool, elementary, and middle school settings. The first presentation focuses on research on the model's use in Greenland, where educational leaders selected CREDE to reform their daycare centers and preschools and adapted it to fit their cultural context. The second presentation describes research that investigated the effects of professional development and school support on teachers' use of Instructional Conversations with Native Hawaiian learners, kindergarten to Grade 8. School support predicted teachers' use of Instructional Conversation, which in turn predicted students' constructing ideas together and contributing meaningfully. After the discussant's comments, the presenters will engage the audience in Instructional Conversations about the CREDE practices and how audience members might apply the practices in their own settings.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

In the 1990s, Greenlandic policy makers chose the Center for Research on Education, Diversity, and Excellence (CREDE) model, known as Tunngaviit, to reform education, birth to higher education in their country. This study examined how Tunngaviit developed in Greenland and ended in schools, but continued in many EC centers. We applied sociocultural theory by analyzing how the sociohistorical context influenced education in Greenland and how educators created settings to influence its use. Data included audio-recorded interviews with 10 educational leaders about how participants learned about Tunngaviit; the model's effects; and what facilitated and created barriers for its use; and video

recordings of nine EC educators using Tunngaviit and discussions with them about it. Educational leaders chose Tunngaviit as part of decolonization to improve outcomes for Indigenous Greenlanders. There were mixed responses to the reform. Some Grade 1-10 teachers liked the model and saw that it engaged students. Other teachers resisted it, and the teachers' union leaders said that educators had academic freedom to teach in the ways that they wanted. After the reform agency moved from the Ministry of Education to Greenland's University, the new rector ended the school reform. Despite the school reform ending, Tunngaviit continued at EC centers, as leaders learned from previous mistakes. In 2021, use of Tunngaviit was voluntary and while some educators were familiar with Tunngaviit, others, particularly those without formal certification, were not. Tunngaviit continued at some EC centers when center leaders prioritized its use and educators collaborated with each other to improve enactment.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Tunngaviit: Creating a Foundation for Cultural Values and Activities in Greenlandic Early Childhood Centers

Lois A. Yamauchi, University of Hawai'i, Naussunguaq Lyberth, Sermersooq Municipality, Greenland (retired), and Leah Gazan, University of Hawai'i

In the 1990s, Greenlandic policy makers chose sociocultural strategies developed for Indigenous and marginalized students to reform education, birth to higher education (Olsen & Tharp, 2012). Known as the CREDE model (Tharp et al., 2000), it is called Tunngaviit (foundation) in Greenland. Tunngaviit is part of decolonization to improve outcomes for Indigenous Greenlanders. This study examined how Tunngaviit developed in Greenland and ended in schools, but continued in many EC centers serving children birth to age 5. We applied sociocultural theory (Vygotsky, 1978) by analyzing how the sociohistorical context influenced education and how educational leaders created settings to influence its use. Our research questions were: Why did Greenlandic educational leaders select Tunngaviit for national educational reform? Why did the school reform end, but continued in EC centers? How did EC educators sustain efforts to implement Tunngaviit?

Method

Data included audio-recorded interviews with 10 educational leaders about: how participants learned about Tunngaviit; the model's effects; and what facilitated and created barriers for its use. Data also included video recordings of nine EC educators using Tunngaviit and discussions with them about it. We analyzed documents and websites related to EC education in Greenland and applied iterative analytic procedures (Saldaña, 2016).

Results

In 1998, educational leaders began a national reform process to improve education for Greenlandic children (Olsen & Tharp, 2012). Fourteen percent of youths dropped out of secondary education, and many others did not matriculate to higher education (Olsen & Tharp, 2012). Greenlandic leaders visited US schools that were using Tunngaviit and contracted the CREDE Director Roland Tharp to guide their efforts.

There were mixed responses to the reform. Many educators liked the model and saw that it engaged students. Participants Naussunguaq and Paartoq said that Tunngaviit helped teachers integrate Greenlandic culture into education. Kattie, a principal, viewed it as a way to reach children who were active learners. Kaali, the head of Greenland's educational evaluation, said that children were more

active and happier and contrasted Tunngaviit with “traditional instruction . . . [that] can kill even the brightest students because they’re sitting and waiting [to be called on.]”

Some Grade 1-10 teachers resisted the reform. Kunnunguaq said that the reform occurred too quickly and with too much pressure on teachers. Paartoq, Kunnunguaq, and Jens felt that resisters were mainly Danish teachers, but others noted that resisters included both Danes and Greenlanders. Educational leaders originally called the reform “Methods for Effective Pedagogy,” taken from the English translation. Some teachers asked, “Do you think we are not effective since you introduced some methods for [effectiveness]?” The teachers’ union leaders said that teachers had academic freedom to teach in the ways that they wanted. Paartoq stated that resisters misunderstood the reform, but it was difficult to change perceptions. After the reform agency moved from the Ministry of Education to Greenland’s University, a new rector was appointed. She ended Tharp’s contract and diverted money intended for the reform. The country also decreased the number of municipalities from 18 to four, and Jens said that school leaders’ efforts to retain power distracted them from the reform.

Despite the school reform ending, Tunngaviit continued at EC centers, as leaders learned from previous mistakes. They consulted with union leaders throughout the process and changed the model’s name to Tunngaviit. Jens thought that people were less concerned with EC education, which resulted in less resistance. Kattie said that Tunngaviit was a creative approach, and EC educators tended to be more creative than school teachers.

In 2021, use of Tunngaviit was voluntary and while some educators were familiar with Tunngaviit, others, particularly those without formal certification, were not. Regardless of certification, educators at Soralu appeared to be familiar with Tunngaviit. Soralu staff met monthly for Tunngaviit planning. Leader Hansine grouped educators who were familiar with Tunngaviit with others who were less familiar, which, from a Vygotskian perspective, may have promoted assisted performance from peers (Tharp & Gallimore, 1988). The planning meetings included non-instructional staff, like cooks and custodians, and the cook conducted Tunngaviit activities with children about meal preparation. Consistent with research on the influence of educational leadership (e.g., Cheung et al., 2019; Hallissey, 2017), center leaders influenced the extent to which educators used Tunngaviit. Hansine and Juliane encouraged their staff to use Tunngaviit. Observing peers’ use of Tunngaviit facilitated educators’ use of the model, and those who had been coached on Tunngaviit appeared to have developed skills. Tunngaviit use was mediated by a planning handout developed by Greenlandic EC leaders. Having three adults in each classroom also promoted Tunngaviit use because while educators facilitated an activity with small groups of children, their partners could supervise others.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Instructional Conversations are small group discussions between a teacher and students with a goal of greater conceptual understanding. Instructional Conversations have been shown to increase marginalized students’ engagement and learning. This mixed-methods study investigated how professional development and administrative and broader school support affected teachers’ use of Instructional Conversations and their students’ equitable participation in those conversations. Participants included 19 teachers who taught at public schools in Hawai’i, serving large concentrations of Native Hawaiian students. The teachers participated in the professional development in teams with others who taught similar grades or subjects at the same school.

Participants also included 121 kindergarten to Grade 8 students in the teachers' classrooms. The professional development involved workshops, weekly team meetings, and monthly meetings with a university consultant. Data across two years included: (a) video recordings of the teachers' Instructional Conversations; (b) ratings of students' equitable participation as a group; (c) ratings of school support, and (d) recordings of teacher team meetings with the consultants. Results indicated that administrative and broader school support predicted teachers' use of Instructional Conversation, and Instructional Conversation predicted students' constructing ideas together, authoring ideas with their everyday languages, and contributing meaningfully to the discussions. Instructional Conversation mediated the effects of school support on students' equitable participation. Teachers shared ways that their administrators and the broader environment supported and hindered their collaborative learning to use Instructional Conversations.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Enhancing Equitable Student Participation through Instructional Conversation within a School Support Framework

Lois A. Yamauchi, Seongah Im, Mary Lennon, Ateisha Norton & E. Brook Chapman de Sousa, University of Hawai'i

Instructional Conversations (ICs) are small group discussions between a teacher and students with a goal of greater conceptual understanding (Tharp & Gallimore, 1988). This study focused on ICs with Native Hawaiian students, who are the second largest ethnic group (22.6%) in Hawai'i public schools (HIDOE, 2023). Compared to other peers, Hawaiian students tend to perform poorly on standardized tests, drop out in higher numbers, and are held back more often (Kana'iaupuni et al., 2021; Office of Hawaiian Affairs, 2015).

When teachers implement IC, students display higher levels of engagement and learning (e.g., Portés et al., 2018; Hilberg et al., 2000; Saunders & Goldenberg, 2007). Previous research noted that the success of professional development (PD) on IC and other pedagogical innovations is related to administrative and other environmental support (Gallimore et al., 2009). For example, teachers need time and space to initiate and sustain innovations and this is affected by administrators' support. This study focused on the effects of PD and school support on teachers' use of IC and students' equitable participation during the conversations. By equitable participation, we are referring to students sharing personal connections, constructing ideas together, authoring ideas with their everyday languages, and contributing meaningfully to the discussion (ICEPs, 2023). Our research questions were: How did school support and teachers' participation in PD workshops affect educators' use of IC? How did school support, PD workshops, and IC predict students' equitable participation?

Method

Data Sources

Participants included 19 teachers who participated in IC PD in teams with others who taught at the same school. Participants also include 121 kindergarten to Grade 8 students in the teachers' classrooms. The PD included workshops, weekly IC team meetings, and monthly meetings with a university consultant.

Each teacher submitted 1-6 video recordings across two years for a total of 47 recordings. Two coders independently coded and discussed ratings of 20 recordings for use of IC and students' equitable

participation to ensure inter-rater reliability and shared understanding of the rubrics (CREDE, 2013; ICEP, 2023). The coders rated the remaining recordings separately. Interrater reliability coefficients for equitable participation were acceptable to high (McGraw & Wong, 1996), ranging from 0.74 for contribute meaningfully to 0.96 for share connections. There was a high level of agreement among the raters, with a coefficient of 0.88. Data also included consultants' ratings of each teams' school support and audio recordings of meetings with the university consultants which were transcribed and coded for teachers' perspectives regarding school support and IC.

Model, Variables and Analysis

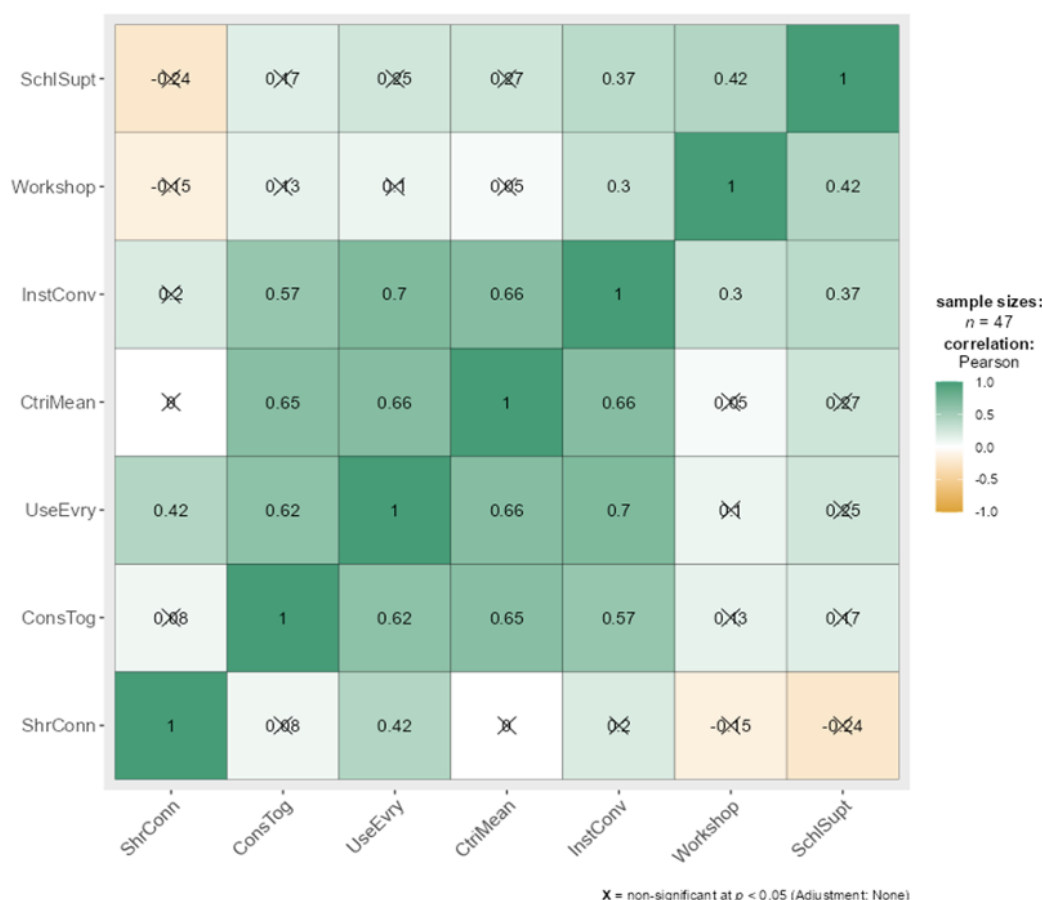
We proposed a model that emphasized the role of teachers' IC as a mediator. We examined the direct relationship between IC and teachers' workshop attendance and school support, and the direct effects of IC on students' equitable participation scores. Furthermore, we examined how workshop attendance and school support indirectly affected student scores within the model. The mediation analysis was performed using JAMOVI Version 2.3.28 (Galluchi, 2021).

Results

The relationships among the seven exogenous and endogenous variables are presented in Figure 1.

Figure 1

Correlation Coefficients Among Seven Exogenous and Endogenous Variables



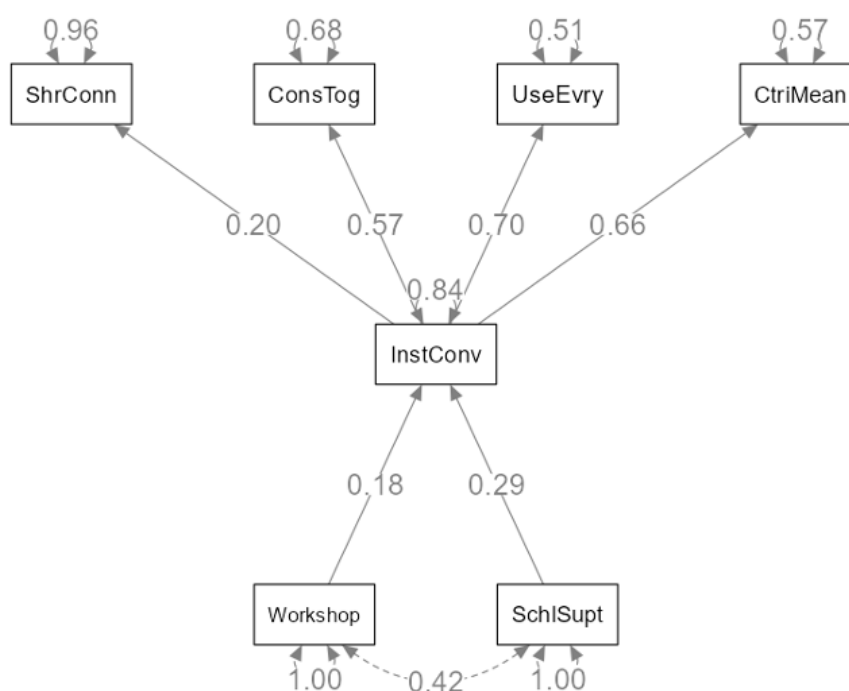
Direct and Indirect Effects of the IC Mediation Model

Coefficients marked with x indicate non-significant associations. Teachers' IC score was moderately related to student equitable participation scores, except for share connections, as well as school support and workshop attendance. Workshop attendance and school support were not related to students' scores.

Table 1 and Figure 2 present standardized regression coefficients of direct effects of endogenous and exogenous variables. The first column of Table 1 shows the directionality of the relationship. IC directly affected three student scores of author ideas using everyday language, construct ideas together, and contribute meaningfully. School support affected IC.

Figure 2

A Path Diagram of the IC Mediation Model



Correlation Coefficients Among Seven Exogenous and Endogenous Variables, A Path Diagram of the IC Mediation Model

Figure 2 showcases the role of IC as an endogenous and also exogenous variable affecting students' participation and interactions. The goodness of fit statistics of the IC mediation model was acceptable. Correlations among the four equitable participation scores are not included in the path diagram, but are estimated. Coefficients ranged from -0.04 to 0.44, taking into account the IC mediation model.

As shown in Table 1, we also examined indirect effects, which were not displayed in Figure 2.

Table 1

Direct and Indirect Effects of the IC Mediation Model

Model Effects	β	z	p
Direct effects			
InstConv \Rightarrow ShrConn	0.20	1.40	0.16
InstConv \Rightarrow UseEvry	0.70**	6.75	< .01
InstConv \Rightarrow ConsTog	0.57**	4.70	< .01
InstConv \Rightarrow CtriMean	0.66**	6.00	< .01
Workshop \Rightarrow InstConv	0.18	1.23	0.22
SchlSupt \Rightarrow InstConv	0.29*	1.96	0.05
Indirect effects			
Workshop \Rightarrow InstConv \Rightarrow ShrConn	0.04	0.92	0.36
Workshop \Rightarrow InstConv \Rightarrow CtriMean	0.12	1.20	0.23
Workshop \Rightarrow InstConv \Rightarrow UseEvry	0.13	1.21	0.23
Workshop \Rightarrow InstConv \Rightarrow ConsTog	0.10	1.19	0.24
SchlSupt \Rightarrow InstConv \Rightarrow ShrConn	0.06	1.14	0.26
SchlSupt \Rightarrow InstConv \Rightarrow CtriMean	0.19 [†]	1.86	0.06
SchlSupt \Rightarrow InstConv \Rightarrow UseEvry	0.20 [†]	1.88	0.06
SchlSupt \Rightarrow InstConv \Rightarrow ConsTog	0.16 [†]	1.81	0.07

Note. [†] $p < .10$; * $p < .05$; ** $p < .01$

The influence of school support exhibited marginal significance on three equitable participation scores. Considering the small sample size, these marginal significances may have substantive implications when additional recordings from Year 3 are analyzed. The correlation between school support and workshop attendance was 0.42, with $p < .05$.

The teachers shared how their administrators and the broader environment supported and constrained their learning. For example, one principal offered to substitute for teachers while they observed each other conducting ICs. Whereas some school environments were consistent and teachers had a regular time to meet, other environments were more chaotic and created difficulties for teachers to meet and routinely collaborate together.

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Preschool Children Engaged in Topic of Wonder Activities



360 Extending funds of identity to collaborative lesson planning in secondary mathematics education.

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: dialogue funds of identity freedom

SHORT ABSTRACT

As a mathematics teacher and researcher, I have both studied and experienced the inequalities that are present in the English education system. Mathematics success is measured by attainment in GCSE exams which creates two problems. Firstly, students who are not represented by this narrow success criteria are at an unfair disadvantage, and this tends to fall along lines of race and class, further widening structural inequalities. Secondly, the prioritisation of these tests encourages the use of transmission approaches in teaching – what Freire refers to as the banking model. This creates passive students who lack agency and freedom. These two problems call for an approach to teaching which both recognises that students have different starting points, and challenges transmission approaches. In my PhD, I will attempt to bring together a Funds of Identity approach with Freire's work on critical consciousness to imagine an education system which starts from where students are at and gives them a genuine voice in their mathematics education. I will use Funds of Identity techniques to find out more about what matters to students. I will then use what I am calling a 'dialogic maths codesign approach' to meet regularly with a group of students and collaboratively plan blocks of lessons. In this presentation, I present my initial pilot study and talk about how I will begin my main study in September.

EXTENDED SUMMARY

As a mathematics teacher and researcher, I have both studied and experienced the inequalities that are present in the English education system. On average, students from higher socioeconomic backgrounds have higher attainment levels (EEF, 2022). A significant factor in this attainment gap is the priority that is given to GCSE exams. In England, government policies have resulted in an education system built on competition and consumer choice; schools publish their exam results and these can be used by families to choose a school (Bowe et al., 1992). As a result, schools are under pressure to achieve high exam results and this pressure is also felt by teachers and students. This emphasis on exam results creates two problems. Firstly, students who are not represented by the type of teaching and learning required to succeed in a GCSE mathematics exam are at an unfair disadvantage. The narrow success criteria tends to align with white middle-class culture, resulting in segregation along lines of race and class, further widening structural inequalities (Douglas & Attewell, 2017). Secondly, the emphasis on exam results encourages the use of transmission approaches as teachers attempt to 'teach to the test' (Reay, 2017). Freire refers to this as the banking model as teachers become bankers who deposit knowledge into students, creating passive students who lack

agency and freedom (Freire, 2000). We therefore have two problems – students from marginalised groups are misrepresented by the narrow success criteria, and students learning by transmission are lacking agency. These two problems call for an approach to teaching which both recognises that students have different starting points, and challenges transmission approaches. In my PhD, I will attempt to tackle this problem by bringing together a Funds of Identity approach (González et al., 2005; Esteban-Guitart, 2021) with Freire’s work on critical consciousness (Freire, 2000). A funds of identity approach recognises that students have different identities and ways of thinking and doing mathematics, both inside and outside of school, challenging deficit models which imply that students are lacking in knowledge. Freire’s work on critical consciousness calls for a dialogic approach to education, where teachers and learners are in dialogue together across power divides, and students come to understand themselves and their place in the world and act to fight the injustices they discover. Starting from September, I will work with a small group of students from a class of low-attaining 15-16 year olds. I will use Funds of Identity techniques to find out more about what matters to these students, through the use of creative activities like drawings, diaries and photography. I will then use what I am calling a ‘dialogic maths codesign approach’ to meet regularly with the students and collaboratively plan blocks of lessons. Focusing on their starting points and what matters to these students, we will make decisions together about how to structure their mathematics lessons and what kinds of activities to include. I plan to embed this approach by repeating it across a whole year, looking for contradictions and opportunities for development. This paper will explore the possibilities and challenges in trying to implement such a project in a context where the curriculum is highly regulated and, to a large extent, centrally controlled. I consider the spaces for possibility as I begin to implement this project and reflect on findings from my initial pilot of collaborative planning sessions.

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361 Historically different activity systems in interaction: Conditions for a shared object

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Development research object of activity Interaction

SHORT ABSTRACT

This paper sets out to investigate whether an emerging collaborative research practice between university and schools, takes shape as a new activity or not. There is a growing interest in the interaction between social practices and thus a need to understand what promotes and constrains the formation of a shared object.

In 2017 the Swedish government initiated a pilot (ULF) to promote collaboration between schools and researchers. This paper explores what factors promote or constrain the development of a shared object and identifies tensions and contradictions that arise during the construction of local ULF projects. Additionally, it addresses the challenges related to different traditions and perspectives regarding developmental work and research.

The study utilizes data from interviews with representatives from Örebro University and the collaborating schools, video recordings and meeting notes. The third generation of Cultural Historical Activity Theory (CHAT) is used as a theoretical framework, with a particular focus on the concepts of the object of activity, institutional actions, and contradictions in and between activity systems.

Preliminary results suggest that there are different understandings of developmental research and different expectations. The studied local ULF has not yet developed a shared object and can thus be seen as two activity systems with a boundary object.

In conclusion, this paper explores the challenges and potential opportunities in the interaction between schools and universities. The ULF initiative aims to create a new activity that promotes collaboration and the production of new knowledge. However, further development is required to establish a shared object.

EXTENDED SUMMARY

In the 21st century, development research in interaction between social practices, such as schools and universities, has become a topical issue. New forms of interaction are emerging which call for new research practices. Hence, there is a growing need to understand what promotes and constrains the interaction and the formation of a shared object in these new practices.

In 2017, the Swedish government launched a pilot activity (ULF) to promote a new type of interaction between schools and universities on issues of development, learning and developmental research.

The government expects that schools, teacher education and researchers should collaborate on developmental research in a way that is both symmetrical and complementary. One way to theorize the challenges that arise from such a collaboration is to talk about a *third space*. The formation of a

third space can be understood as the creation of a hybrid arena where knowledge from a first and a second space (such as school activities and academia) is united. This requires changes in the historically and culturally developed activities of schools and universities with regards to traditions, tools and institutional protocols. While both relate to education, schools and universities have emerged within separate institutional worlds, with separate societal needs and motives driving the development of traditions and practices. Schools have developed primarily to meet society's need to transfer knowledge, experience, values, and norms to future generations. Universities, by contrast, have developed primarily to respond to the need for *new* knowledge, expertise, and a high skill work force. This means that, for collaboration to work smoothly, roles and expectations have to be reconsidered and, ideally, a new *activity*, in Engeström's sense, for developmental research has to take shape. The interaction between two different activity systems can lead to tensions and contradictions, creating challenges and dilemmas but also opportunities.

This paper sets out to investigate whether a concrete collaborative practice such as ULF takes shape as a new activity or not. What can promote or constrain the development of a shared object of activity? What indications of tensions and contradictions can be identified in the construction of one of the local ULF? What can indicate that new institutional actions directed towards a shared object are developed? How are challenges related to the school's tradition of doing developmental work and the universities' view of the differences between development and research addressed? What is the potential of seeing development projects carried out in schools as an engine to produce new knowledge?

The study draws from two data sources. The first consists of interviews with representatives from Örebro university and the schools with which it is meant to collaborate. The second consists of video-recordings and notes from meetings with the participants. In addition, we analyze obstacles and opportunities in some of the concrete research projects conducted during the first years of a new emerging practice referred to as Örebro-ULF.

The third generation of Cultural Historical Activity Theory (CHAT) is used as a theoretical framework. The concepts of the object of activity, institutional actions, and contradictions in and between activity systems are focused on. Star and Griesmer use the term 'boundary object' to describe collaboration where a consensus does not necessarily have to be reached for the collaboration to work and produce results that the collaborating parties are satisfied with. What Engeström calls a shared object is not the same as a boundary object, but a shared object can arise when a new, and possibly temporary, activity takes shape. Research projects where researchers and teachers have the same agenda and the same need to develop new knowledge can be conducted in relation to a shared object.

The ULF participants have to develop a new object of activity in the construction of a new arena for development research. Such an object can be either a boundary object or a shared object. The preliminary results show, among other things, that the collaborating participants have different understandings of what developmental research is and can be. Furthermore, we see indications that there are different expectations of what different parties should contribute. Overall, the analyses show that Örebro-ULF has not yet developed a shared object and can only be seen as two activity systems with a boundary object.

362 What happens when students gain power? Adolescents' initiatives and decisions in a Change Laboratory

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Power adolescent students Change Laboratory

SHORT ABSTRACT

This study investigates what happens when adolescent students gain power through object-oriented collective activity in the Finnish school context. Specifically, the notion of object-related power as a productive emancipatory force is explored. The issues of power and control in schools are central. Nevertheless, power is seldom discussed, acknowledging its relation to an object. From the perspective of Cultural-Historical Activity Theory, the notion of power is closely connected to the object of activity, which emphasizes the importance of focusing on the object for which power is required. To explore this issue, fourteen eight-graders participated in a Change Laboratory (CL) intervention to redesign their activities by producing projects that were significant to them. This study focuses on a Documentary film project on bullying and acceptance of others created by four students. During one school year, CL sessions were conducted within regular school hours, but without the constraints of the regular curriculum and the pressures of testing and grading. The aim was to facilitate a process in which the students could identify, select, and work on an object that they find significant, not only individually but also for others and society. The data collected from the CL sessions were analyzed qualitatively. The results show how students' initiatives and decisions enable them to gain power through object-oriented collective activity to influence the school and society. The results also indicate the potential of the notion of object-related power in understanding power as an emancipatory force and as a novel approach to control in schools.

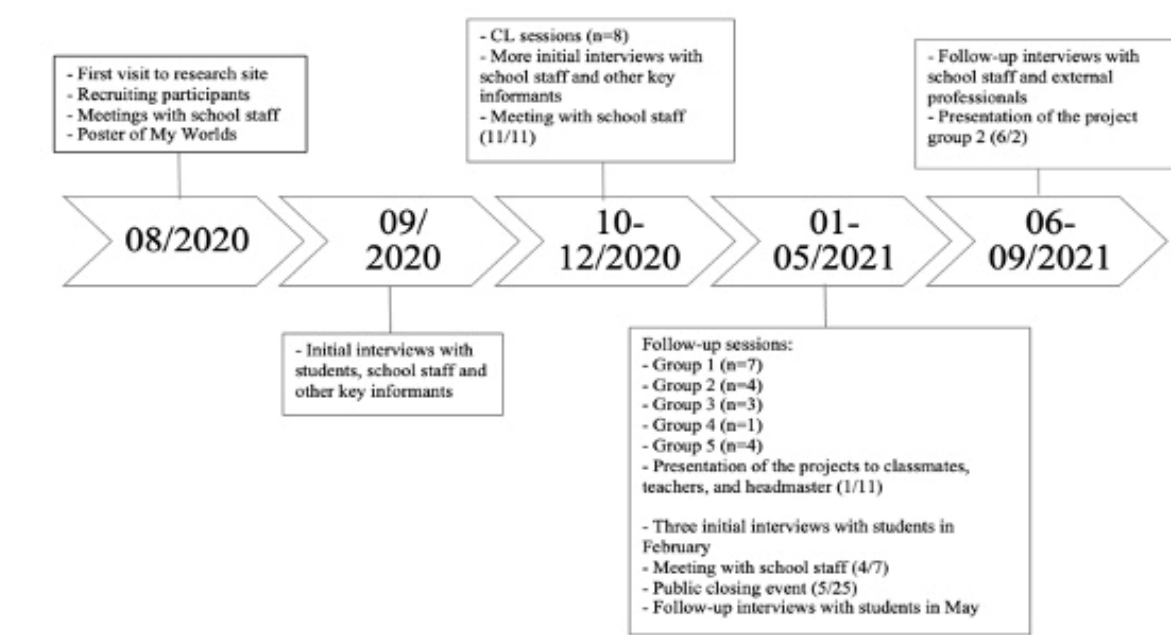
EXTENDED SUMMARY

This study explores what happens when students gain power through object-oriented collective activity in the school context. The issue of control in schools is central with adults typically holding more power than adolescents (Bertrand et al., 2020) and teachers primarily responsible for the control in the school. Adolescents often view power as a means of control wielded by adults (Feldman & Marshall, 2020). In school, power is often discussed without acknowledging its relation to an object or without considering why it is needed, especially from the students' viewpoint. The concept of power, as viewed through the lens of cultural-historical activity theory (CHAT), is closely connected to the object of an activity. CHAT perspective emphasizes the need to focus on the object for which power is required, rather than just seeking freedom from control. Empowerment for students cannot be achieved simply through eliminating or relaxing control. Rather, the alternative to

schools' controlling role is finding an object to work towards. Through this process, students can find meaning in their activities, leading to power generation.

This study aims to explore the concept of object-related power as a productive emancipatory force, which is often hidden, unrecognized and suppressed yet still generated in various ways (Sannino, 2023). In this study, adolescents were central agents who redesigned their activities by producing projects that are significant to them (Engeström et al., 2023). We conducted a Change Laboratory intervention in a comprehensive school with 8th grade students during one school year (Figure 1).

Figure 1. Timeline of the Change Laboratory intervention.



The Change Laboratory sessions were held during regular school hours and in a typical classroom space. However, students were free to select, design, and implement the project topics, contents, and means without the constraints of the regular curriculum and the pressures of testing and grading (Figure 2).

Figure 2. Students' projects.

Name of the project	Topic of the project	Product of the project
Anguis	Learning to code a game	A new version of the snake game, called Anguis
Small action, big world	How do positive and negative words and actions affect other people?	A booklet and posters
K-pop	The meaning of music, especially K-pop, for people	A questionnaire and a presentation on K-pop
Everyone should be accepted as one is	Equality, bullying, and mutual acceptance	A documentary film.
Brotherhood of Steel (BOS)	A tabletop role-playing game that combines history and science fiction; in the game, you have a possibility to either be yourself or whoever you want	A tabletop role playing game.

The aim was to facilitate a process in which the students could identify, select, and work on an object that they find significant, not only for each of them individually but also for others and possibly for the society at large. We assumed that such a process will generate power, manifested as initiatives and decisions taken by the students themselves.

The study focuses on a project, named 'Documentary film,' which was carried out by four students who wanted to focus on issues related to equality, diversity, and bullying. The group created a documentary film to show the perspectives of the bully and the victim. The data consists of recordings of Change Laboratory sessions (n=8), follow-up sessions (n=4), and public closing event that were transcribed and analyzed using qualitative methods. Process analysis was used to examine initiatives and decisions, and a new analysis method was developed to identify the students' manifestations of power.

The Change Laboratory in this study served as an open-ended search for and tentative construction of potentially meaningful new activities that the school can activate and support. The results show how students' initiatives and decisions enable them to gain power through object-oriented collective activity to influence the school and society. The results also indicate the potential of the notion of object-related power in understanding power as an emancipatory force and as a novel approach to control in schools. The findings offer insights into the development of daily teaching and learning practices by illuminating the possibilities for adolescents to overcome the irrelevance of school instruction and learning by creating projects they themselves find significant.

Interaction with participants:

Throughout the presentation, there will be three instances where I would appreciate the participants' input. Firstly, in one word, please describe the concept of power. You can respond through this electronic platform. Secondly, jot down one initiative that you would have liked to take during your adolescent years in school. Finally, towards the end of the presentation, I will pose a question about how we can support student-led initiatives within the current school setting. What steps would be necessary?

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364 Fostering Emergent Career Agency: Moving Forward When Young Adults' Career Development Stalls

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting interaction in social practices

Keywords: Career agency Double Stimulation Young adults

SHORT ABSTRACT

Young adults in vulnerable positions often experience difficulties taking control over their careers. They encounter problems in taking first steps, run into obstacles in their private lives and at work, and often cannot change this themselves. The study presented here aims to understand theoretically and empirically what young adults encounter and how they take control over their career development (i.e., career agency).

Twenty young adults who find themselves in vulnerable positions and their mentors were interviewed to gain insight into their contexts and the frictions they experienced when entering the labor market.

The results show that several types of friction between and within contexts and the person, which lead to conflicting thoughts with a paralyzing effect, may be the core problem for career agency to develop. These insights are helpful for mentors working in vocational education or in social work. In the presentation, several cases will be used to illustrate and discuss Double Stimulation as a conceptual framework, methodological framework, and guidance approach.

EXTENDED SUMMARY

Background

In this study, we examine the phenomenon of career agency (De Vos, 2020; De Hauw & Greenhaus, 2014). Career agency is often defined as *the ability* to give direction to one's career along with seeing and taking career opportunities and dealing with changes and challenges. We, however, conceptualize career agency as an emergent phenomenon that arises and disappears (e.g. Muijen et al., 2018).

The principle of Double Stimulation (DS) (Sannino, 2015; Vygotsky, 1997) adds insight into the *development* of agency as it can surface the interaction between a person and the contexts in which they participate. 'Stimuli' from the contexts, including other people are seen as an integral part of this development. DS provides a lens that enables us to describe what young adults encounter when they, for example, experience contextual friction (a first stimulus) but also how the young adults can break through the friction themselves or with the help of others (a formative intervention or a second stimulus).

To date, little research has been done on career development with a CHAT perspective. Therefore, we explore and discuss whether CHAT is a fruitful theory for understanding the development of career agency.

Aim

The study aims to gain insight into what frictions young adults encounter when they enter the labor market.

Methods

This research uses DS not only as a conceptual framework but also as a research methodology. We interviewed 20 young adults and for each of them a mentor or another person, which the young adult indicated as significant for their development. Both interviews focused on the opportunities and challenges the young adults faced in their private lives, their work, and the labor market. Because the *experiences* of the young adults and significant others were central to this research a phenomenological analysis approach (Van der Meide, 2018) was chosen. The transcripts of the interviews were transformed into textual portraits that tell the story of the young adults and mentors.

We used memos instead of codes to form phenomenological themes which allowed us to elaborate on the meaning of units within the portraits, enabling us to surface themes such as different kinds of frictions. Writing reflectively from the perspective of the young adults enabled us to come closer to the meaning of the frictions and what it means for the development of career agency.

The textual portraits of the mentors were used to give us insight into how mentors raised the young adults' awareness of the frictions.

Results

The most prominent themes that surfaced from our analyses were the different conflicting thoughts with a paralyzing effect, which we call frictions. These thoughts could often be traced back to earlier experiences of the young adults. We found different categories of frictions in the data. These categories are (1) friction between the context of the young adult and the young adult, for example, wanting to work more days a week conflicts with the possibilities of the workplace (2) friction between two contexts of the young adult and the young adult, for example, wanting to finish school conflicts with problems in the family that demand attention, and (3) friction between multiple contexts and multiple thoughts of the young adult about themselves. For example, wanting to work conflicts with wanting to take care of the children.

Conclusions

The main obstacle to agency development for young adults seems to be different types of conflicting, thoughts with a paralyzing effect. Based on the types of frictions and the principle of DS we created a conceptual model that can be used to gain insight into the difficulties that young adults in vulnerable positions experience in taking control over their careers and into ways of breaking through the frictions.

Understanding these frictions could assist young adults themselves or mentors to find ways to change their context(s). By working with mentors intensively in the future we can create awareness and reinforce the use of DS as a principle for guiding.

Interaction with participants

After the presentation there will be a discussion in which the following questions will be central: Is CHAT a suitable perspective to gain insight into career development?

What is your idea about using DS for analyzing the interaction between young adults and their contexts?

What methodological value and limitations of DS do you see within your contexts?

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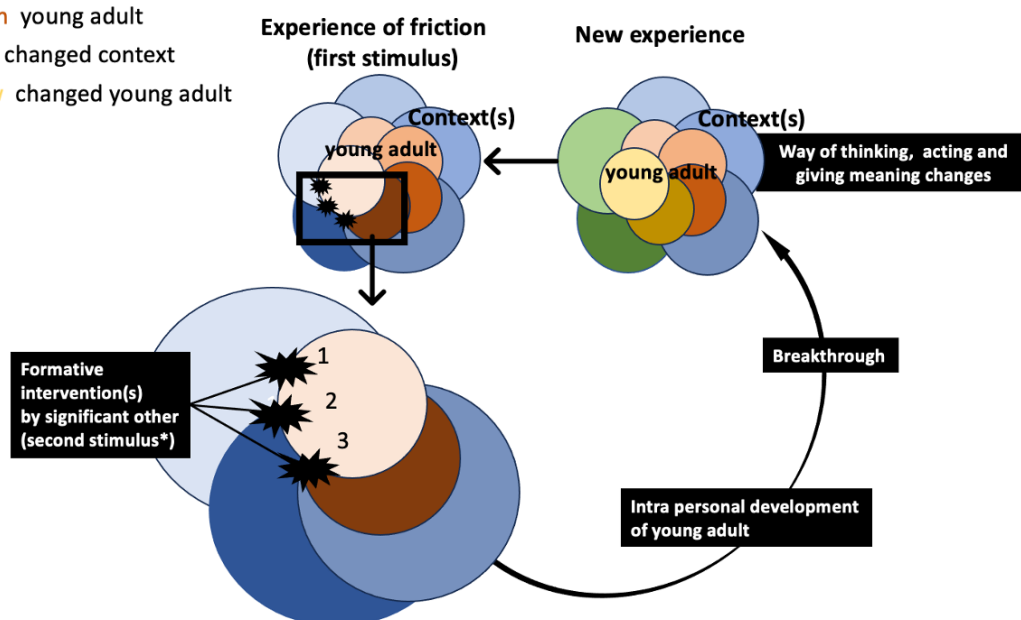
Shades of blue contexts

Shades of brown young adult

Shades of green changed context

Shades of yellow changed young adult

★ Frictions



*The formative intervention becomes a second stimulus when the young adult decides to act on the formative intervention



370 Advancing Mass Timber: Applying the Change Lab process on multi-variant activity systems

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Creative ways to do research

Keywords: Mass Timber Change Labs 4th Generation Activity Theory

SHORT ABSTRACT

The Regional Engine for Sustainable and Resilient Architecture, Engineering, and Construction in Mass Timber (RE-ACT) project aims to support stakeholder engagement across the U.S. Pacific Northwest Region to create a 10-year strategic plan. Mass Timber in buildings holds the promise to reduce carbon footprint, since it can be a viable alternative to steel and concrete in some building projects. RE-ACT proposed to implement a changed lab formative intervention to identify key multi-system breakdowns as manifested thru tensions and contradiction in work practices of the mass timber supply chain. The RE-ACT project planned for four topical Change Labs to be run at the same time, with 20 participants per topical Change Lab (10 participants each U.S. state of the Pacific Northwest: Oregon and Washington). Only the first three steps of the Change Lab process were implemented. This methodological adjusted sequence to the Change Lab process was due to the number of stakeholders involved in the Change Lab and the amount of data was collected and analyzed in between sessions. Ultimately, the Change Labs will facilitate an inclusive co-production of the mapping of the current mass timber ecosystem and help identify multi-system solutions. Like fourth generation Activity Theory, the unit of analysis of the mass timber ecosystem is the sharedness of the multiple systems that are multi-dependent on one another for their growth or contraction. We hypothesize that this project is the most complex, multi-variant activity systems context on which the formative intervention Change Lab process has been attempted on.

EXTENDED SUMMARY

Background

The Regional Engine for Sustainable and Resilient Architecture, Engineering, and Construction in Mass Timber (RE-ACT) project aims to support an inclusive needs assessment process that will support stakeholder engagement across the U.S. Pacific Northwest Region. Mass timber products in buildings holds the promise to reduce carbon footprint, since it can be a viable alternative to steel and concrete in some building projects (Mitchell, 2011). Industry research claims it can improve forest health by using wood fiber from restoration projects involving selective harvesting of small diameter logs. This holds the potential to reduce wildfire risk, improve forest health, and create commercially viable new markets for lower-value timber.

Although mass timber in construction is growing in popularity in the US, with the biggest concentrations in OR and WA (Woodworks, 2022a), the complex supply chain (see Figure 1) on which

the industry is dependent on is not functioning to its full capacity, experiencing multi-system breakdown.

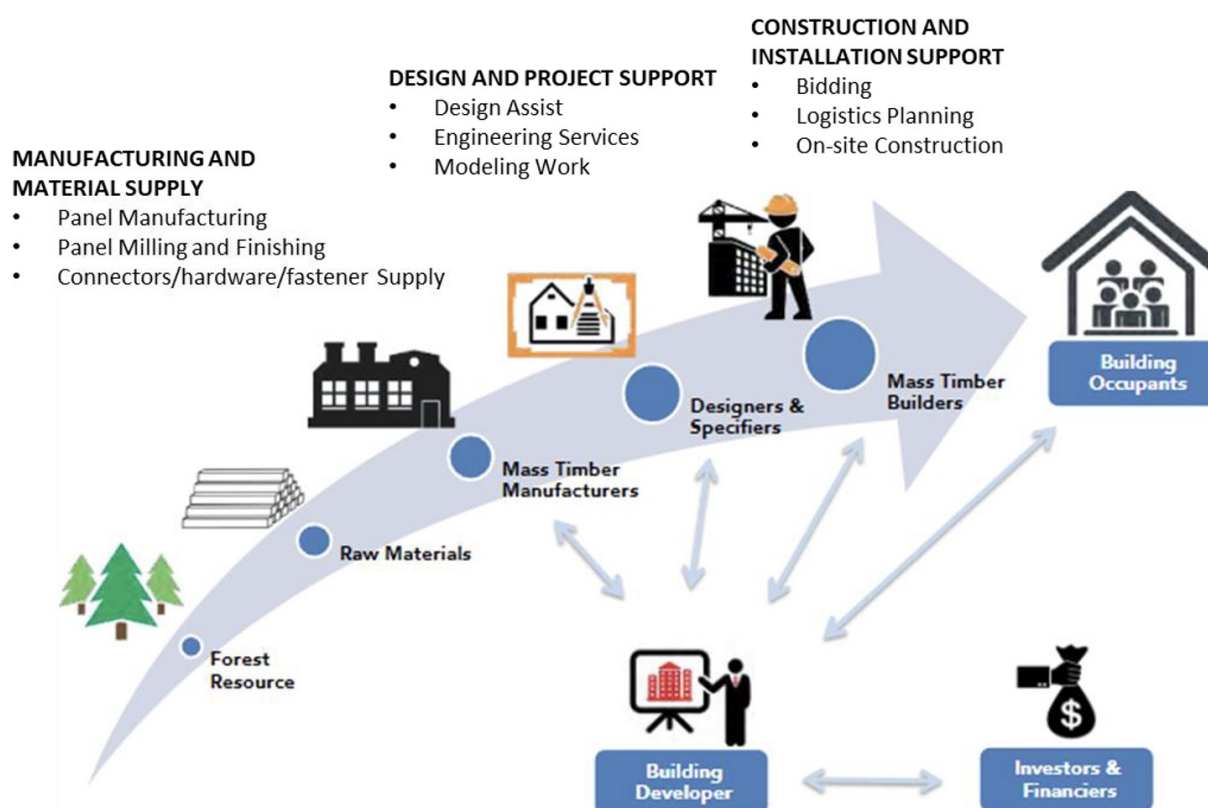


Figure 1. Mass Timber Supply Chain (adapted from Anderson, et. al., 2020).

Aims

The RE-ACT project proposed to implement a changed lab formative intervention to identify key multi-system breakdowns as manifested thru tensions and contradiction in work practices of the mass timber supply chain. Ultimately, the Change Labs will facilitate an inclusive co-production of the mapping of the current mass timber ecosystem and help identity muti-system solutions. In economic research, place-based innovative ecosystems (PBIE) are “interconnected set of institutions – universities, corporations, government, start-ups, and investors – within a geographic region whose connectivity allows each organization and researcher in that region to leverage the knowledge, resources, and specialized capabilities of other institutions and individuals within that location” (Guzman, Murray, Stern, and Williams, 2023). Like fourth generation Activity Theory, the unit of analysis of a PBIEs are the sharedness of the multiple systems that are multi-dependent on one another for their growth or contraction (Engeström, & Sannino, 2010). We hypothesize that this project is the most complex, multi-variant activity systems context on which the formative intervention Change Lab process has been attempted on.

Methods

The RE-ACT project planned for four topical Change Labs to be run at the same time, with 20 participants per topical Change Lab (10 participants each U.S. state of the Pacific Northwest: Oregon and Washington). Each session was planned to be 5 hours long and meet for three different Change Lab steps every month and half. This methodological adjusted sequence to the Change Lab process

was a result of the number of stakeholders who should be involved in the Change Lab and the amount of data collected analyzed in between sessions.

Strategically, since RE-ACT is funded through a planning grant, it was theorized that only the first three steps of a Change Lab process would be conducted: Questioning, Analysis, and Modeling of the news solutions (Engeström, & Sannino, 2010). This would then culminate in a stakeholder's summit where both Change Lab participants and other stakeholders would be able to tinker with the emergent model from the Change Labs. Since the research team will apply for an implementation grant, the final steps of the change lab process would be performed in a later phase. This study will highlight the implications of reducing the number of sessions while increasing the numbers of participants to the Change Lab process.

To prepare for the Change Labs, the research team for RE-ACT also conducted a comprehensive literature review of the supply chain systems, aiming to empirically confirm heuristic knowledge that advancing timber leaders spoke of. Additionally, surveys and interviews were conducted to inform the creation of mirror data for the Change Labs (Virkkunen, 2013). Finally, whenever possible, different contexts were ethnographically observed.

Results

Initial Analysis of data gathering informing the Change Labs has just begun. Additionally, the Change Labs are scheduled to begin in March of 2024. Although no result can be reported in this abstract, we expect to have preliminary result ready to present during the conference presentation.

Conclusions

The discourse similarity between PBIEs and fourth generation activity theory is startling. With PBIE, the focus is on “how different elements of the ecosystem interact, the rules and norms that govern interactions – may influence the overall rate of innovative productivity within a given ecosystem” (Guzman, Murray, Stern, and Williams, 2023). Yet, a key tension between the two is the object of activity of PBIE on economic productivity, while the focus of fourth generation activity system research has called for a change in objects of activity that move beyond capitalist conception of labor and production. How this supra-tension is manifested and *managed* or *rationalized*, should be a key methodological insight gleaned from this research, with implications for future conceptions and directions of 4th generation activity theory.

Interactions with audience

Short segments of the various Change Labs will be showed to highlight key moments related to tensions, resolutions, and other concept formation descending from the abstract to the concrete.

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380 Music teaching for children with intellectual disabilities – for cultural citizenship?

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SHORT ABSTRACT

The education for students with intellectual disabilities in Sweden has been subject to several critical changes during the latest decades. The societal object has changed from caring to teaching/learning. Furthermore, the object for music has changed from therapy to music as subject for learning, and demands for teachers' qualifications have changed from general teacher or pre-school teacher education to music teacher with qualifications in special education. On an international level, one of the rights UNICEF points out for people with various disabilities concerns cultural citizenship. This right is part of the basis for curricula for all Swedish schools. However, experiences from practice indicate that activities made available for students (7–16 years) in the Swedish Compulsory School for Pupils with Intellectual Disabilities may instead be counter-productive.

The aim of this paper is to identify tensions and contradictions that have an impact on music teachers' conceptions of the object of music education for this group of students. Data for our paper are firstly, Swedish curricula for music for this type of school since the early 20th century as well as for the compulsory school and secondly, interviews with five qualified music teachers. For the interviews, a phenomenographic analysis (Marton, 1981, Marton & Booth, 1997) was conducted, after which curricula and the phenomenographic results were analysed by activity theory (Engeström, 2016). Results show that tensions as well as contradictions are established on several levels: national, local, and classroom.

EXTENDED SUMMARY

Background

The education for students with intellectual disabilities (ID) in Sweden has a history that goes back to the 19th century. Already in a governmental report from 1894, music is part of the content suggested in the curriculum. Music education in the curriculum for the Swedish compulsory school as well as for Compulsory School for Pupils with Intellectual Disabilities (SCSPID) has been subject to several changes. Partly these changes are related to changing societal motives for the subject, partly music for students with ID are related to societal conceptions of this group of students. The societal object in education for these students has changed from caring to teaching/learning. Furthermore, the object for music has changed from therapy to music as subject for learning, and demands for teachers' qualifications have changed from general or pre-school teacher education to special teachers with qualifications in music. On an international level, one of the rights UNICEF points out

for people with various disabilities concerns cultural citizenship (Ferm Almqvist, 2016). This right is part of the basis for curricula for all Swedish schools. However, experiences from practice indicate that activities made available for students (7–16 years) in the Swedish Compulsory School for Pupils with Intellectual Disabilities may instead be counter-productive. In addition, the competence of the teachers that teach music in the SCSPID holds great variation, regarding music as well as knowledge about ID. One of the thematic results of a review of research on music education for students with ID showed that there are few studies of teaching-learning with this group of students and these are based on integrated classrooms (Berthén et al., 2022). A theme that was of specific interest for our further work was critical studies for empowerment, where the concept *musical becoming* (Carlson, 2013) is in line with our interest.

Aim

The aim of this paper is to identify tensions and contradictions that have an impact on music teachers' conceptions of the object of music for this group of students.

Methods

Data for our paper are firstly, a comparison between changes in the Swedish music curricula for SCSPID since the early 20th century with previous analysis by Sandberg (1996) of the music curriculum for compulsory school. Secondly, interviews with five qualified music teachers teaching in SCSPID. For the interviews, a phenomenographic analysis (Marton, 1981, Marton & Booth, 1997) was conducted, after which curricula and the phenomenographic results were related to each other and analysed by activity theory (Engeström, 2016).

Results

The result of the analysis of the object and function of the music education syllabuses from the early 20th century until the latest, from 2022, discerns a pendulous movement in what can be understood as changed object for music education. From an idea, in the first part of the 20th century, that music education for pupils with IF should provide opportunities to develop musical knowledge and establish contact with "good music", especially hymns and traditional songs, to primary emphasising the therapeutic function of music education instead of musical knowing for more than thirty years. Since the early 1990s, the pendulum has swung back towards the development of musical knowing and an emphasis on cultural citizenship. How these shifts in direction have affected music education practice in SCSPID for students has neither been evaluated nor previously studied.

Results from the phenomenographic analysis of the interview firstly showed we established three interrelated phenomena based on the data: Music making in the SCSPID school, Music teaching in the SCSPID school, and Prerequisites for music making concerning students with ID. For each of the phenomena, categories of descriptions were constructed. Furthermore, we found that tensions as well as contradictions were established on several levels: national, local, and classroom.

Conclusions

Based on analysis of the historical changes in the curricula for music for these students and of activity theoretical analysis, we found that the SCSPID school is multimotive-driven, which is not a surprise. However, while the latest curriculum for music for these students supports teaching-learning for cultural citizenship as an intended object, aspects of local organisation and rules contribute with tensions as well as contradictions and consequently function counterproductively. Furthermore, the interviewed teachers represent a minority of 6.3 percent that are qualified music teachers. This

indicates that the result is not representative for most teachers teaching music in the SCSPID and thereby a need for formative interventions (Sannino, Engeström & Lemos, 2016).

How interaction with the participants is planned

In the next step we will use the findings to collaborate with these teachers as well as other music teachers in the SCSPID school in a change laboratory (Virkkunen & Newnham 2013) project in order to develop formative interventions for developing shared instructional products (Morris & Hiebert, 2011).

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386 Using Galperin's theory to design a skill-based EAP module

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SHORT ABSTRACT

The purpose of this presentation is to explain how Galperin's theory (1935/ 2007, in Russian) informed the design and teaching of a pre-sessional skill-based EAP module at the University of Leeds. One of its summative assignments, which could mitigate against the use of AI-generated submissions, is to design a research proposal. Writing a research proposal is a complex academic skill, which is difficult to acquire through the 'try and error' approach, and the major challenge for the course designers was to integrate the content "how to" in the form of lectures and tutorials into student activity. While there is a clear need for awareness of how to move from identifying a "real world" issue to developing a methodology to research it, there is also a need to master particular language and structures for communicating students' thinking. To address this challenge, we applied Galperin's theory of the stage-by-stage formation of mental operations: a gradual transformation from external (materialised) object-oriented activities, through communication and individual speech, into a mental action (Engeness, 2021). I first present the current module provision and its theoretical underpinning. Then, I move on to the profiles of students and the instructors, and how the module was implemented over 2 years. After that, I address and evaluate the strengths and challenges in promoting, and finish with the practical considerations underpinning the forthcoming changes.

EXTENDED SUMMARY

In this presentation, I discuss a theoretical framework, which informed the design and teaching of a pre-sessional skill-based EAP module at the University of Leeds. There are usually between 320-400 students enrolled in the module. The majority of them have obtained a bachelor's degree in China or Mexico or an equivalent qualification. There is no English language proficiency required on entry, and the level of English of the students is mixed, varying from B1 to C1 on the Common European Framework of Reference for Languages (CEFR).

The MA degrees they have applied for are taught in English. To enable the students to study successfully in subsequent years, a key aim of this pre-sessional module is to develop students' academic and research competences in English, to which this course is called upon to commit. One summative assessment, understood in Williams and Ryan's terms (2000, p. 51), is to design a research proposal. Since designing a research proposal is a complex academic skill, and it is difficult to acquire through the 'try and error' approach, we considered several strategies for the 'internalization' of lectures and tutorials into student activity. According to Vygotsky (1978), any such a complex skill is initially external and social before it becomes internalized and individual. The internalization process implies a transfer and transformation of the social forms of behaviour from the external

interpsychological plane to the internal, intrapsychological plane of the individual. Subsequently, from the intrapsychological plane, or internal dialogue, the skill is ready to be externalized again, performed as motivated actions with others in a social external context.

Galperin developed the above Vygotsky's idea further. He viewed learning through the mechanisms of orientation and adaptation (Engeness, 2021; Galperin, 1935/ 2009, in Russian) in activity, which Galperin (2007) summarised in his theory of the Systematic Formation of Mental Actions (SFMA). He viewed internalisation and externalisation as phases in the development of mental actions from external object-oriented actions (materialised action) through social communication (communicated thinking) and individual speech (dialogical thinking) into a fully mental action (acting mentally). The forms of learner's activities, where the learning goes through distinctive consecutive phases, are: motivation, orientation, materialized action, communicative thinking, dialogical thinking, and acting mentally (Engeness, 2021).

The SFMA approach suggests teachers should facilitate each of the six phases above, for example through classroom discussion, in phase two, to detail what a research proposal involves. This might elicit student thinking through the orientating tools or means the teacher provides. Once students articulate their thinking, it becomes 'visible' in Galperin's terms. The teacher can then identify comprehension gaps that could cause students to fail in an activity and provide mediation so they understand better and can complete the activity successfully, achieving the intended learning outcome.

The first step of SFMA addresses motivation and was organized around the discussion of why developing a research proposal is a vital competence for forming and mastering researcher skills in MA study and has an outcome of 2 diagnostic tasks. The second step is based on Galperin's idea that to plan an action it is necessary to create a mental image of that action (Engeness, 2021), or an 'ideal' in Ilyenkov's (2008, in Russian) terms. The module has a strong emphasis on reflection and the students write a weekly personal reflection as a part of their timetable.

Galperin suggests any action has a binary structure, comprised of an orienting part and an executive part (Engeness, 2021). The orienting part involves creating two types of images: images of the surrounding reality and images of the ideal actions to be created. The structure of a research proposal serves as the orienting part, provided in Week 1, acting as a psychological tool and mediator, representing the image of the ideal action. This structure first emerged through explicit communication among students, encouraging meaning-making to comprehend research proposal composition. The executive part contains images of the surrounding reality - the essential characteristics of a research proposal - presented in Weeks 1-2. Students identify relationships between these characteristics and the 'ideal' (Engeness, 2021). Students have weekly group study sessions, where they discuss these characteristics. It is believed that they will be internalized as operations, becoming psychological functions.

To make research proposal writing more accessible for learners, we broke it down into several parts, such as the Literature Review, Methodology, and Ethical statement, and deployed these through various student activities. This enabled students to trace what happens within each part - a unit of action in Galperin's terms - and understand the transition from one unit to the next. Then in an internal dialogue process, students designed different sections such as the Literature Review, Methodology, and Ethical statement, transforming mental processes into instrumental external

actions. Their mental processes were mediated by the research proposal structure as a culturally developed tool, in Galperin's terms.

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388 Teaching academic English with AI chatbots: a sociocultural perspective

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SHORT ABSTRACT

This presentation aims to provide insights into reimagining EAP classroom practices viewed through a sociocultural lens, with the emergence of AI chatbots. I will first acknowledge the inherent complexity of the EAP classroom and address the flexibility of the language instruction we teach at the Language Centre, as articulated in our learning outcomes. The talk then shifts to the challenges brought about by AI chatbots, including the need for a redesigned curriculum that reassesses what we previously considered as students' Zone of Proximal Development (ZPD). It will also address the necessary competencies to be developed and reevaluated in light of emerging human-machine interaction. After that, I will highlight strategies for leveraging AI's potential to enhance language learning experiences. I will suggest approaching AI affordances from multiple perspectives: as a tool and as a tutor. This dual lens can foster higher-level thinking skills, originality, and creativity among EAP students, better equipping them to become fully engaged members of their academic communities while amplifying their output capabilities.

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392 Four levels of contradictions manifested in a university digital teaching activity

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

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SHORT ABSTRACT

Changes in teaching practice can create contradictions for university teachers that can manifest in various ways. Analysis of such contradictions can both contribute to building a historical view of an otherwise new activity and provide stimulus for further change in practice. Using the four levels of contradictions as classified in cultural-historical activity theory, this paper shares examples of primary, secondary, tertiary, and quaternary contradictions experienced by a team of anatomy teachers in an Australian university. These teachers were initially directed through a university managed project to change their lecture-oriented teaching to be digitally facilitated. From the initial conflict that this directive created, the teachers ultimately took control of their new digital teaching activity and collectively worked on making meaning with their new practice. The complexity of digital teaching practice, as experienced by this team of teachers, is demonstrated through examples of the contradictions experienced at each of the four classification levels. This paper principally focusses on those contradictions exposed through analysis of student-related data from the field. In formative interventionist workshops, the teachers questioned and analysed this collated data to recognise relatively historical contradictions that they confronted during their initial change of practice, and others more recent as a result of their changes in practice. This paper highlights the value of deep analysis of contradictions to build historical and cultural detail of an activity system.

EXTENDED SUMMARY

Background

Within cultural-historical activity theory, a contradiction is “a foundational philosophical concept” (Engeström & Sannino, 2011), which can occur at four different levels within or associated with an activity. Primary and secondary contradictions can manifest within an activity, respectively within a constituent component or between two, tertiary contradictions occur between the dominant version of the activity and its more culturally advanced version, while quaternary contradictions occur between networked activity systems (Engeström, 1987/2015). With digital forms of teaching long acknowledged as increasingly prevalent in higher education (e.g., Siemens et al., 2015), teaching activities will continue to face instabilities as further digital technologies emerge. Shifts in university teaching activities can create various contradictions that teachers, as subject of their own teaching activity systems, can experience as dilemmas (Lee, et al., 2021).

Aims

While studying a digital teaching activity in an Australian university, contradictions were exposed at each of the four levels. A team of anatomy teachers initially faced conflict when directed via a university managed project to change their teaching practice from lecturing to digital teaching. The teachers ultimately took control of their new digital teaching activity and collectively worked on making meaning with their new practice. The aim of this paper is to share the complexity of digital teaching practice as experienced by this team of anatomy teachers, through providing examples of the contradictions experienced at each of the four classification levels.

Methods

Cultural-historical activity theory in the Finnish tradition (e.g., Engeström, 1987/2015; Engeström, & Sannino, 2010) was the principal methodology of this qualitative constructivist inquiry, supported by multi-sited (Marcus, 1995) and at-home (Alvesson, 2009) ethnographic fieldwork. Intensive fieldwork was conducted in the author's then university workplace, across multiple on-campus and online sites of the participating teachers' digital activity workplace. This fieldwork largely involved observations of the teachers' activity and interviews, but also included collecting data from the teachers' networked activity systems, such as surveying and interviewing anatomy students and interviewing a university administrator. The fieldwork was followed by formative interventionist workshops, based on Change Laboratory initiatives (e.g., Engeström, 2001; Haapasaari, et al., 2016), where collated field data was questioned and analysed by the teachers, and they envisioned changes to their practice and modelled some of these changes in between the workshops.

Results

The results expose a range of contradictions within or associated with the anatomy teachers' new digital teaching activity. For example, a primary contradiction within the rules of the activity system occurs between teacher expectations versus assumptions that the students will know how to engage in the new learning environment. This became apparent upon reviewing the descriptive statistics derived from online observation of student engagement with the digital resources, in particular the discussion forum where minimal engagement occurred. The teachers want to see higher levels of deliberative learning compared to surface-styled responses socialised in other online media environments. A related secondary contradiction was exposed between the rules and the tools, involving whether enterprise digital learning environments such as LMS (online classroom) discussion tools can afford a tertiary education level of engagement. Within wider cultural contexts, where students socialise at will in a range of contemporary digital environments, the now traditional LMS discussion tools might not inspire the higher levels of engagement desired.

Multiple tertiary contradictions exposed between the traditional teaching activity and new digital activity were primarily situated between the respective tools of lecture versus digital video. One concern surfaced regarding whether advancement of practice occurred by replacing lectures with videos; was this simply supplanting one knowledge acquisition mode for another and thus perpetuating passive learning. Another area focusses on relational opportunities, where the on-campus environment was found as superior to video for forming learning relationships, while video seemed significantly better for demonstrating anatomy and anatomical movement to students. One quaternary contradiction exposed between the student-focussed and the teaching-focussed activity systems relates to teacher expectations and student understanding of learning interactions, where the rules of engagement seemed to be interpreted differently. Students can have an

assessment-centric object compared to expectations of higher education deliberative engagement involving inquiry and critical thinking, versus an assumed rule that students can complete anatomy subjects by strategically passing assessments (Sperber 2005).

Conclusions

Teacher analysis of field data within formative interventionist workshops allowed for the complexity of their digital teaching activity to emerge. Their analysis of contradictions faced during their initial change in practice added to developing the historicity of the activity (Engeström, 2001). Additionally, the historical contradictions and the uncovering of culturally more recent ones provided stimulus to improve their digital teaching practice, including modelling and trialling new solutions.

How interaction with the participants is planned

Interaction is planned by way of sharing diagrams of the various contradictions and seeking discussion on whether each might be confirmed at the level of contradiction stated or argued as sitting at an alternative level.

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396 Subjectivity, community and education: alternative paths in adolescent mental health care

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Keywords: community mental health subjectivity

SHORT ABSTRACT

The aim of this study is to understand the subjective configurations of the suffering of an adolescent who takes part in the activities of a non-governmental community organization in Brazil. Along the way, we also aim to understand any community resources that participate in the care delivered to the adolescent, and their subjective consequences. This work is a qualitative study using the Constructive-Interpretive Methodology based on Qualitative Epistemology, developed by González Rey. Based on this framework, a case study of a 15-year-old adolescent was carried out. The research took place in a community-based, non-governmental organization located in Brazil, dedicated to offering free mental health support. Multiple dialogue sessions were held over five months with the adolescent, including times at his school and with his family. The development of various dialogical moments, especially those carried out outside the organization, were fundamental in understanding the adolescent's suffering processes through a configurational path marked by complexity and dialectic, where it becomes possible to overcome simplistic and standardizing diagnostic tendencies. In this way, it was possible to build paths of intelligibility about the role of multiple processes, such as the social subjectivities of the family and the school, as well as aspects of the individual adolescent's history and experiences. A set of community resources provided by the community organization where the research was carried out contributed significantly to this process. The construction of new networks of sociability, disseminated in their living spaces, can contribute to the development of subjective senses favorable to change. This publication was made possible with financial support from FAPDF (Brazil).

EXTENDED SUMMARY

Background

Considering a global context that has seen the increasingly severe emergence of psychological suffering, especially among adolescents (WHO, 2022), the community emphasis in mental health care has been an important guideline in the deinstitutionalization movements in various countries around the world, where various reforms have been carried out with the aim of building new community care services (Stastny et al., 2020). It is notable, however, that in countries such as Brazil and Italy, there is a tendency for these community practices to end up being centred on specialists, which ends up leading to a tendency towards hierarchical care, as opposed to a logic of community protagonism (Vasconcelos & Desviat, 2017). In Brazil, we have also seen problematic experiences across non-governmental organizations that provide mental health care to adolescents, where practices guided

by the logic of institutionalization, internment and moral control of symptoms have been frequent (Blikstein, 2019). On the other hand, we sought to explore the potential of community organizations for mental health care, where the community is key to building educational practices - in the broadest sense, being characterized by dialogue oriented towards subjective development. For that matter, this study is based on González Rey's Theory of Subjectivity from a cultural-historical approach (González Rey, 2017a; 2017b; 2019a; González Rey et al., 2019), where the concept of subjectivity is seen not as a synonym for individual and internal psychic processes, but as a symbolic-emotional configurational system, organized individually and socially in the conditions of culture.

Aims

The aim of this study is to understand the subjective configurations of the suffering of an adolescent who takes part in the activities of a non-governmental community organization in Brazil. Along the way, we also aim to understand any community resources that participate in the care delivered to the adolescent, and their subjective consequences.

Methods

This work is a qualitative study using the Constructive-Interpretive Methodology based on Qualitative Epistemology, developed by González Rey (2019b). Based on this framework, a case study of a 15-year-old adolescent was carried out. The research took place in a community-based, non-governmental organization located in Brazil, dedicated to offering free mental health support. Multiple dialogue sessions were held over five months with the adolescent, including times at his school and with his family.

Results

The development of various dialogical moments, especially those carried out outside the organization, were fundamental to achieving our aims: firstly, in understanding the adolescent's suffering processes through a configurational path marked by complexity and dialectic, where it becomes possible to overcome simplistic and standardizing diagnostic tendencies. In this way, it was possible to build paths of intelligibility about the role of multiple processes, such as the social subjectivities of the family and the school, as well as aspects of the individual adolescent's history and experiences. Secondly, the dialogical moments were important in the development of a subjective configuration of the relationship between the researcher and the adolescent, which was marked by trust and openness, and favored new development options for the adolescent. A set of community resources provided by the community organization where the research was carried out contributed significantly to this process. The construction of new networks of sociability, disseminated in their living spaces, can contribute to the development of subjective senses favorable to change, as an alternative to their previously dominant emotionality marked by suffering. Thus, as a complex social fabric made up of countless systems of relationships, communities are not only designated by their territorial space, but also by the multiplicity of processes and configurations that take shape, both by the adolescents who participate in the community and by the processes of social subjectivity that permeate these relationships (González Rey, 2014).

Conclusions

Professional actions in the community should not be organized with a priori plans, as if the community had to follow the professional's proposals and idealizations. On the other hand, actions dedicated to adolescents in suffering, in a community context, should have an educational orientation, which will emphasize the construction of dialogical relationship spaces that favor

qualitative changes, reflections, new positions and the development of adolescents and the community in general. In that sense, one of the main characteristics of this theoretical perspective is the valuing of adolescents' protagonism, emphasizing the construction of subjective resources and the qualitative opening up to new life possibilities. This movement is related to processes of individual and social subjective development, through practices that favor the emergence of community subjects.

Interaction with the participants

An open discussion with the participants is planned, which will be mobilized by listening to a song related to the study topic. This publication was made possible with financial support from FAPDF (Brazil).

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400 Theory of Subjectivity from a cultural-historical standpoint: González Rey's legacy

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

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SHORT ABSTRACT

This symposium is based on the edited book *Theory of Subjectivity from a Cultural-Historical Standpoint: González Rey's Legacy* (Goulart; Mitjás Martínez & Adams, 2021) which was published by Springer within Perspectives in Cultural-Historical Research series. In this sense, this symposium brings together some of the intellectual contributions made by Professor Fernando González Rey (1949-2019) toward understanding human subjectivity and emphasizing their unfolding in different fields and contexts. This symposium is organized in two main sections. (1) González Rey's life and work, and (2) Dialogue and contributions to different contexts and fields. Section 1 is represented by two studies. The first one presents González Rey's legacy in the context of Cultural-Historical Psychology and situates the aforementioned book as a celebration of his academic contributions to various contexts and fields. The second study presents and discusses González Rey's epistemological and methodological proposal for the study of subjectivity. Section 2 is also represented by two studies. The first one articulates González Rey's Theory of Subjectivity and Vygotsky's Cultural-Historical Theory to examine how everyday parent-child interactions create the conditions for children's emotional development. The second one addresses the development of friendship between young children, as their families transition to a new country. It explores the subjective expressions of both children and adults as children engage in dialogue, actions, and emotions while playing together. We expect this symposium contributes to mobilizing an open discussion about key ideas related to the study of subjectivity within a cultural-historical approach in view of possible future academic pathways.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This study presents González Rey's legacy in the context of Cultural-Historical Psychology and situates the book *Theory of Subjectivity from a cultural-historical standpoint: González Rey's legacy* as a

celebration of his academic contributions to various contexts and fields. The central concepts introduced through Theory of Subjectivity are presented, which include the dynamic relations between social, individual, institutional and political perspectives, where symbolic-emotional processes and formations feature. From this perspective, subjectivity is a qualitatively differentiated production from human beings within the cultural, social and historically situated conditions in which we live, which cannot be reduced to any of the processes implied in its genesis. Defined as a symbolic-emotional system, the concept of subjectivity implies the rejection of any universal principle as its theoretical basis. Furthermore, this study outlines the collection of chapters of the aforementioned book and brings together examples of how these concepts are employed and developed in the study of subjective processes, as well as their contribution to different contexts and fields. The contributions of this edited volume are ordered in two broad sections: (1) Fernando González Rey: life and work, and (2) Dialogue and contribution for different contexts and fields. At the end of this study, some of these open discussions and possible future theoretical pathways are presented based on the commitment to the open and always-in-development character of the Theory of Subjectivity.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

This study presents González Rey's legacy in the context of Cultural-Historical Psychology and situates the book *Theory of Subjectivity from a cultural-historical standpoint: González Rey's legacy* (Goulart; Mitjás Martínez & Adams, 2021) as a celebration of his academic contributions to various contexts and fields. It acknowledges and honors González Rey's contribution to the Perspectives in Cultural-Historical Research Series by Springer, both as a founding editor and as an author.

Other authors in Cultural-historical psychology have explicitly addressed the topic of subjectivity, such as Abuljanova (1980), Chudnovsky (1988), and Lomov (1994). In these pioneering works by disciples of Rubinstein, Bozhovich, and Ananiev, it is possible to see the potential that the dialectic legacy of previous generations of Soviet psychology has for the development of subjectivity (Mitjás Martínez & González Rey, 2017). However, at the time of writing, the authors did not conceptually define subjectivity, nor turn the focus towards a research project (González Rey, 2011, 2014).

González Rey was inspired by these authors, and especially by the initial attempts of Vygotsky and Bozhovich "to advance a representation of human psyche as a generative, and not an assimilative system" (González Rey et al., 2019, p. 8). Based on his initial works with a focus on the concept of personality, González Rey elaborated a Theory of Subjectivity from a Cultural-historical standpoint. He presented the related concepts and the basic pillars of subjectivity in 1997, in the book titled *Qualitative Epistemology and Subjectivity* (González Rey, 1997). From this theoretical perspective, a programmatic research design was developed, which also demanded new epistemological and methodological constructions (González Rey et al, 2019).

The central concepts introduced through González Rey's study of subjectivity include the dynamic relations between social, individual, institutional, and political perspectives, where symbolic-emotional processes and formations feature. González Rey conceptualized subjectivity as an ontological domain that "specifies a new kind of process, that is qualitatively different from all the processes involved in its genesis. As such, subjectivity is ontologically defined by the integration of emotions and symbolical processes, forming new qualitative units: subjective senses. Such subjective senses are "snapshots" of symbolic emotional flashes that unfold in a chaotic movement, from which

subjective configurations emerge as a self-regulative and self-generative organization of subjective senses” (González Rey, 2019, p. 28).

From this perspective, subjectivity is a qualitatively differentiated production from human beings within the cultural, social, and historically situated conditions in which we live, which cannot be reduced to any of the processes implied in its genesis (González Rey & Mitjás Martínez, 2017). Defined as a symbolic-emotional system, the concept of subjectivity implies the rejection of any universal principle as its theoretical basis. Importantly, in this perspective, the social is not conceived of as external, but as a complex constituent dimension of the subjective system.

Subjectivity represents a generative system, which, although has a socially, culturally, and historically located genesis, is not an epiphenomenon of other dimensions. This condition allows the emergence of individuals and social groups as agents of subjects. In this sense, the Theory of Subjectivity allows the understanding of the generative capacity of individuals and social groups within shared symbolical realities.

Furthermore, this study briefly outlines the collection of chapters of the book *Theory of Subjectivity from a cultural-historical standpoint: González Rey’s legacy* (Goulart; Mitjás Martínez & Adams, 2021) and brings together examples of how these concepts are employed and developed in the study of subjective processes, as well as their contribution to different contexts and fields. The contributions of this edited volume are ordered in two broad sections: (1) Fernando González Rey: life and work, and (2) Dialogue and contribution for different contexts and fields.

Notably, the collection of chapters that integrate this volume not only presents and discusses González Rey’s academic contributions, but also highlights divergences, open discussions and possible future pathways. This is in line with González Rey’s theoretical construction process, which was permanently open to confrontation, and change to overcome itself. The open character of the Theory of Subjectivity is expressed by its historical development, expansion and the permanent refining of its concepts, as well as by the permanent dialogue González Rey kept alive with other authors from various theoretical approaches.

At the end of this study, some of these open discussions and possible future theoretical pathways are presented based on the commitment to the open and always-in-development character of the Theory of Subjectivity. These discussions and possible future theoretical pathways will be used to mobilize the interaction with the participants at the end of the presentation.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

This study aims to present and discuss González Rey’s epistemological and methodological proposal for the study of subjectivity from a cultural-historical approach. Emphasis is given to the analysis construction process within research, which is called as construction of information process. Firstly, we address Qualitative Epistemology, which proposes three epistemological principles: (1) singularity as a legitimate source of scientific knowledge, (2) research as a dialogical process, and (3) the constructive-interpretative character of scientific knowledge. From this perspective, dialogue is not understood in the research process as a linguistic phenomenon, but as a subjective process of engagement between researcher and participant. Secondly, we focus on Constructive-Interpretative Methodology, by presenting its main definitions, characteristics, and the configurational logic of knowledge as a consistent way to advance the unity between research and professional action. This methodology emphasizes the construction of the information process not through traditional

inductive or deductive inference, but through the gradual construction of hypotheses, which are sustained by the convergence of indicators. An important feature of this methodological approach is the rupture with the historical dichotomy between “data collection” and “data analysis”. Theoretical construction is integrated as an inseparable and continuous part of the immersion in the research field. Finally, we argue that González Rey’s proposal revitalizes humanities and social science as a living and creative production by considering the researcher as a subject of knowledge construction. This proposal advances in the consistency and explicit criteria of a qualitative approach that considers human creativity and emotionality crucial dimensions of scientific construction.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

As we have discussed in previous work (González Rey & Patino, 2017; Patino & Goulart, 2016, 2020; Goulart, 2018), a significant part of research in social and human sciences presents different philosophical, epistemological and methodological problems. This study aims to present and discuss González Rey’s epistemological and methodological proposal for the study of subjectivity from a cultural-historical approach (González Rey, 1997, 2002, 2005, 2013, 2014, 2019a, 2019b; González Rey & Mitjans Martínez, 2016, 2017a, 2017b, 2019) as an alternative to these dominant problems. Emphasis is given on the analysis construction process within research, which is named as construction of information process.

Firstly, we address Qualitative Epistemology, which proposes three epistemological principles: (1) singularity as a legitimate source for scientific knowledge, (2) research as a dialogical process, and (3) the constructive-interpretative character of scientific knowledge (González Rey and Mitjans Martínez, 2016, 2019). From this perspective, we do not have direct access to the studied reality, but we can generate intelligibility about it from relevant theoretical representations to its specificities. In the case of subjectivity, González Rey and Mitjans Martínez (2017a) argue that its study is only possible indirectly, through a constructive-interpretative process, which imply a dialogical process. Dialogue is not understood in the research process as a linguistic phenomenon, but as a subjective process of engagement between researcher and participant.

Secondly, we focus on Constructive-Interpretative Methodology, by presenting its main definitions, characteristics, and the configurational logic of knowledge as a consistent way to advance in the unity between research and professional action. The Constructive-Interpretative Methodology has as its main characteristic the construction of information process, which is based not on traditional or deductive inference, but on the gradual construction of hypotheses, which are sustained by the convergence of indicators. Indicators are constructed meanings based on a complex system of expressions that are beyond the explicit content of the information generated by the other, articulating gestures, postures, speech and emotionality (González Rey & Mitjans Martínez, 2019). An important feature of this methodological approach is the rupture with the historical dichotomy between “data collection” and “data analysis”. Theoretical construction is integrated as an inseparable and continuous part of the immersion in the research field. González Rey and Mitjans Martínez (2019) points out that it is not theory itself that offers conditions to assess whether the theoretical model is the best option at that moment, but rather the interrelation between conjectures, indicators and hypotheses articulated in it, becoming the best source of intelligibility about the problem studied, compared to other models. Theoretical models are built based on case studies, which, within this methodology, are configured as general methodological resources.

González Rey (2019b) explains that the value of case studies is not empirical. On the contrary, it represents a pillar of research as a theoretical enterprise. Conjectures, indicators, and hypotheses must present a necessary link both with the singular case study and with the more comprehensive theoretical system that underlies them.

Finally, we argue that González Rey's proposal revitalizes humanities and social science as a living and creative production by considering the researcher as a subject of knowledge construction. This proposal represents new possibilities for the production of knowledge within social sciences and humanities by proposing explicit criteria of a qualitative approach that considers human creativity and emotionality crucial dimensions of scientific construction. It highlights qualitative research as a theoretical enterprise. Theory is revitalized as a dynamic system, in permanent development, which considers human creativity and emotionality as crucial dimensions of scientific construction. In this sense, theory, epistemology and methodology emerge as an inseparable unit.

Interaction with the participants is planned at the end of the presentation, and mobilized by a set of questions related to the discussed topic.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Young children's emotional development is crucial for their academic learning and overall well-being. While correlational studies on emotional development in laboratory settings have dominated the early childhood educational field, more attention needs to be directed toward emotional development in parent-child interactions within naturalistic family contexts. Inspired by Gonzalez Rey's theory of subjectivity and Vygotsky's cultural-historical theory, this study sought to examine how everyday parent-child interactions create the conditions for children's emotional development. Theoretical concepts, including subjectivity, subjective sense, subjective configuration, the social situation of development, cultural development, and dramatic collision framed the project. The participants were a Chinese family with a 6-year-old girl, selected as a case from a larger study. Data collection methods included digital video observations, photos, diaries, and field notes. Findings suggested that parents' subjective sense plays a central role in children's emotional regulation in everyday emotionally charged situations. It is argued that Adults' emotional development in everyday emotionally charged situations is key to supporting children's emotional development.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

Emotional development is widely acknowledged as a crucial aspect of young children's overall development, influencing various domains such as cognitive functioning, social skills, academic success, and well-being (e.g., Davis & Levine, 2013; Graziano, Reavis, Keane, & Calkins, 2007; Maryam et al., 2021). While previous research has predominantly explored emotional development in controlled laboratory settings, there is a recognized gap in understanding how emotional development unfolds in the naturalistic family contexts, especially in parent-child interactions in everyday emotionally charged situations.

Aims

This study draws inspiration from the theoretical frameworks of Gonzalez Rey's theory of subjectivity (Gonzalez Rey, 2015, 2020, 2021 & Pérez, Fossa, & Barros, 2020) and Vygotsky's cultural-historical theory. Gonzalez Rey's emphasis on subjective sense, subjective configuration, and the socio-cultural

context of development aligns with the aim of investigating the intricate dynamics of emotional development within the natural context of parent-child interactions.

By delving into the subjective experiences of both parents and children within the family setting, this study aimed to examine how everyday parent-child interactions create the conditions for children's emotional development. Theoretical concepts, including subjectivity, subjective sense, subjective configuration, the social situation of development, cultural development, and dramatic collision framed the project.

Methods

The study is a component of a broader investigation into the emotional development of young children, which encompassed three focal children and their parents representing diverse cultural backgrounds. The data highlighted in this paper specifically pertains to the Chinese family residing in the United States. Ethical clearance for the research was obtained from the Institutional Review Board of the author's academic institution. To safeguard the privacy of the participants, pseudonyms have been employed in this paper.

The individuals involved in this paper comprised a six-year-old girl named Kaylene and her parents. Kaylene was born into a middle-class family in the United States, while her parents were first-generation immigrants from China. Kaylene was a kindergarten student housed in a public elementary school. She attended school every morning from Monday to Friday and spent the rest of the time at home or attending after-school programs.

The research employed comprehensive data collection methods, including digital video observations, photographs, diaries, and field notes, to capture the richness and complexity of everyday parent-child interactions. The data collection period lasted for approximately six months. A total of about 50 hours of digital video observations were gathered by Kaylene's parents over six months. Parents filmed their everyday interactions with Kaylene including play, meal times, bath times, preparing for bed, and everyday routine transitions. The mother took notes on emotionally charged situations or wrote subjective experiences in her diary. She also wrote her reflections on the interactions.

Hedegaard and Fleer's (2008) three levels of analysis were used for analyzing the data. First, all raw data on parent-child interactions from the whole data set were reviewed, understood, and commented on. Second, above mentioned theoretical concepts were used as analytical tools for the second level of analysis. The data on emotionally charged situations were extracted from the complete data set and gathered in a Google Docs document. Finally, on the third level of analysis, the data materials, theoretical concepts, and the research question were gathered together to uncover patterns that address the research question.

Results

Findings suggested that parents' subjective sense plays a central role in children's emotional regulation in everyday emotionally charged situations. It is argued that Adults' emotional development in everyday emotionally charged situations is key to supporting children's emotional development.

Conclusions

This study delves into the intricate dynamics of daily parent-child interactions, revealing the pivotal role of parents' subjective sense in shaping children's emotional development, particularly during emotionally charged moments. Anticipated to offer valuable insights, these findings underscore the importance of subjective sense in supporting children's emotional growth in real-life scenarios. It

becomes evident that a comprehensive understanding of the subjective experiences of both parents and children is essential for promoting children's emotional development. Recognizing the significance of parents' emotional development in everyday situations allows for informed strategies and interventions that cultivate a positive emotional environment for young children.

Contributing to the ongoing discourse on early childhood emotional development, the insights gained from this study pave the way for future investigations into the intricate nature of subjective sense and its impact on children's emotional well-being. However, the study has limitations, notably being centered around a single Chinese family in the U.S., potentially restricting the generalizability of findings to diverse cultural contexts. The six-month duration, while providing a valuable snapshot, leaves room for a more extensive observational period to offer a comprehensive understanding of the subject. Additionally, the reliance on parental self-reporting introduces potential biases, including those related to social desirability. These limitations call for caution in generalizing findings and highlight areas for refinement in future research endeavors.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

González Rey's theory of subjectivity is founded on personality development and includes development motives and motivation. In the current study, the aim is to understand the development of friendship between young children, as their families transition to a new country. González Rey's conceptual framework guides an exploration of the subjective expressions of both children and adults as children engage in dialogue, actions and emotions while playing together. The data were collected by interviews with the parent, and teacher and video observations of one child during playdates at home. Findings reveal that, during playdates, children's shared motives and motivations are subjectively shaped through processes of suggestion and agreement, fostering emotional engagement among the players. The social productions of adults enables the players to come together, and influences the children's development of social interactions and their potential to form, and sustain friendships. For instance, a mother may provide guidance to her child about what to expect in new social situations, while a teacher strategically organizes children in academic activities to create opportunities for diverse interactions. We argue that friendship is depicted as a social construct that meanders along various pathways. Theoretically, the concept of friendship and in particular, young children's development of social relations leading to friendship, includes subjectivity, motivations, and shared motives, all contributing significantly to the learning of young children's personality development. Implications for the study and further research is presented.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Background and aims

The central focus of this paper is to explore the theoretical and epistemological perspectives on motive and motivation presented by González Rey (2008, 2009, 2011, 2012, 2014, 2016, 2017, 2018, 2019) through the development of social interactions and friendship in Early Childhood Education (ECE). By drawing on examples from empirical research on social relations and friendship, we aim to contribute to the theoretical discourse on motives and motivation in the context of personality development. Theoretically, González Rey (2018) emphasizes subjectivity as a symbolic-emotional system in which individuals engage in the creation of subjective productions. We posit that the concept of friendship involves subjective senses configured in moments of dialogue and action,

encompassing cultural, emotional, and symbolic expressions. As children form social relations and friendships, they generate subjective senses and configurations symbolically produced within a constellation of emotions and motives across past, present, and future relations.

The concepts of motive and motivation have received attention in the fields of mental health and psychotherapy (Mori & Goulart, 2019), exploring the identity of young children moving countries (Adams & Fleer, 2016) and the experiences of teachers living abroad for work within international schools (Adams & Fleer, 2019). In addition, Quinones (2016) utilized subjectivity to examine children's affective connections with young peers, highlighting the significance of subjective senses in understanding children's symbolic and emotional experiences during reciprocal interactions.

However, using the concepts of motive and motivation in relation to social relations and friendships has received limited attention.

The research question directing the study is 'how do children's motives and motivation support the development of social relations and friendships in the early years?'

Methods

Ethical procedures from a university ethics committee were adhered to throughout the study. The data from one family was selected from a larger study, where three principals of international schools, seven teachers and five families were involved (Adams & Fleer, 2015; Adams & Quinones, 2020). The larger study involved seven focus children, ranging in age from 3.9 years to 7.9 years, (mean age of 5.4 years) at the beginning of the study. The data for this chapter originates from one family—the Jones. The methods used to collect data stem from the social interactions of young children as they make new friends. They include interviews with the parent and teacher, and video observations of the child at home and school. To add depth to the interviews, the children's, mother's and teacher's dialogue provide different perspectives that when brought together support understanding motives and motivation in relation to children developing social relations and friendship. All data were analysed through an iterative process which included thematic analysis, suggested by Clarke & Braun, (2013): (1) familiarizing oneself with the data, (2) generating codes (3) constructing themes, (4) reviewing potential themes, (5) defining and naming themes, and (6) producing the report

Results

The findings show that adults referenced the importance of the children interacting socially when new to a class prior to advances in academic learning were expected. Adults indicated that the child's own motives and motivation towards social interactions was to be encouraged, and suggested that creating the conditions for children's autonomy when making friends was important. In addition, indicators from the adult participants suggest that the child needs support from the adults for new pathways to make friends. These required systematic support such as organisation of playdates with neighbours and creating social spaces where children can engage during school work and playtime (playground, after school activities). Theoretically, the interweaving of individual/social subjective sense and configurations directs attention to shared motives and motivations within social interaction. The mother's subjectivity was apparent as she suggested that parents need to be open and encourage their child to invite unknown children for play dates, and coach their children in ways to initiate play leading to friendship. The personal subjectivity of the teacher suggests awareness of curricular activities where interactions are fostered and led by an adult and or a child.

Conclusion

This presentation contributes to the advancement of González Rey's theoretical framework of subjectivity by elucidating motive and motivation as pivotal dimensions for developing social relations within the context of emerging friendships. By presenting empirical examples of two children forming social relations and friendship, we propose a novel theoretical pathway for a deeper comprehension of subjectivity and motivation. Implications and future directions for research will be discussed.

How interaction with the participants is planned

Interaction with the participants will begin with asking the participants to share their memories of childhood and making friends with the person they are sitting next to. This will lead into the presentation. At the end of the presentation, participants will be invited to discuss in small groups the presentation and come up with one question for the presenters.

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404 Young children's learning and development of the concept of sustainability in the family context

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with climate change

Keywords: concept of sustainability everyday and scientific concept formation cultural historical concept of imagination

SHORT ABSTRACT

The concept of sustainability has gained prominence in response to humanity's problematic relationships with nature, prompting scholars to emphasize early education on the subject. The current study draws upon cultural-historical theory to investigate how young children learn and develop the concept of sustainability in their family context. This presentation focuses on Tina who was five years old and lived in Melbourne, Australia. Over four months of data were collected which included a total of three hours of digital video data of the child's different activity settings, ten photos of her everyday activities accompanied by a short description of each activity, and one hour of an interview with her mother. A cultural-historical approach was used to analyse the data.

The finding reveals Tina's parents nurtured her interest in animals, providing diverse nature experiences that fostered her holistic engagement with nature. This created a social situation for Tina that broadened her initial interest in animals to understanding human/nature relationships. The application of Vygotsky's concept of imagination reveals how Tina's parents created motivational conditions for her scientific comprehension of the concept of sustainability. Tina's emotions, linked to her concern for animals, influenced her imagination and creative activities like drawing and storytelling, which in turn heightened her emotions and created learning opportunities. Recognizing these learning opportunities, her parents introduced relevant scientific concepts, encouraging exploration of the intricate human-nature relationship through her imagination. The research offers insights into how children's exploration of nature, under specific conditions, enhances their understanding of the concept of sustainability.

EXTENDED SUMMARY

Research Background

The concept of sustainability has emerged in response to humanity's problematical relationship with nature. Scholars and international bodies have acknowledged the pivotal role of education in reshaping this relationship to mitigate and potentially reverse its adverse consequences (UNESCO, 2014). Recognizing that such education should commence early in life, during the formative years when children shape their values and perceptions, has led to a surge in publications on early childhood environmental and sustainability education (Güler Yıldız et al., 2021; Summerville & Williams, 2015).

However, the existing literature predominantly focuses on the pedagogical aspects rather than exploring how children acquire knowledge and values related to the environment and sustainability (Hedefalk et al., 2015). To address this gap, this study examines children's learning and development of the concept of sustainability within the familial context, employing a cultural-historical theoretical lens.

Children's learning and development of the concept of sustainability is vital since this concept with its ambiguity and multiple interpretations, holds human-nature relationships at its core (Bonnet, 2002). Therefore, it lays the foundation for one's attitude towards nature and unsustainability problems (Bonnet, 2002).

Research Aim

This study draws upon the cultural-historical theory to investigate how parents create conditions for their children's learning and development of the concept of sustainability.

Method

To capture the complex dynamics between the focus child activities and family practice that contribute to the child's learning and development of the concept of sustainability, several methods were employed. This paper presents the findings from a focus child, Tina, who was five years old, and her family who lived in Melbourne, Australia. The data includes:

one hour of interview with Tina's parents

three hours of digital video data of Tina's interactions with others in the family activity settings taken both by the parents and researcher

ten photos of her everyday activities taken by her parents with a short description of each activity.

There were regular informal communications between the researcher and participating parents when needed.

Results

The results illuminate how Tina's parents, by recognizing and nurturing her interest in animals, provided ample experiences with nature, either directly or indirectly through reading books or watching documentaries. Together, they explored diverse topics related to nature, creating a social situation that facilitated Tina's holistic engagement (involving both her cognition and emotion) with nature. This not only deepened her initial interest in animals but also broadened it to encompass the relationship between animals, plants, humans, and their supporting life systems. Such experiences supported Tina's understanding of fundamental concepts like nature and interdependency at an everyday level, a prerequisite for comprehending the concept of sustainability.

Moreover, the concept of imagination (Vygotsky, 2004) sheds light on how Tina's parents created motivating conditions for Tina's imagination and the development of a more scientific understanding of the concept of sustainability. Vygotsky (2004) regards a dual relation between emotion and imagination in which they influence each other. As discussed, Tina had an affective bond with animals evident in her concern for animals' well-being, negatively affected by human actions, and her inspiration to help them. The duality of emotion and imagination (Vygotsky, 2004) explains how those emotional topics for Tina found their way into her imagination and therefore creative activities such as playing, drawing, and storytelling. These creative activities, in turn, heightened Tina's emotions providing learning opportunities in which Tina emotionally and intellectually engaged. By recognizing these learning opportunities, her parents introduced the relevant scientific concepts (e.g. food chain

and extinction) to her, encouraging her to further explore the complex and multifaceted relationship between humans and nature through her imagination.

The findings of this paper contribute to a more nuanced understanding of how and under what conditions children's exploration of nature supports their learning about sustainability.

Conclusion

This study investigated children's learning and development of the concept of sustainability in the familial context and utilizing a cultural-historical theoretical lens. The results offer insights into the pivotal role Tina's parents play in shaping her learning and development of everyday and scientific concepts essential for comprehending the multifaceted and complex humans/nature relationship and later understanding the concept of sustainability.

The results highlight the significance of recognizing and nurturing a child's interests, particularly in this case, Tina's fascination with animals to foster meaningful engagement with topics related to sustainability. Moreover, the concept of imagination (Vygotsky, 2004) provides insights into how parents practice creating motivating conditions Tina's enhanced scientific comprehension of sustainability-related concepts.

In essence, the findings contribute significantly to our understanding of how early childhood exploration of nature, coupled with supportive familial conditions, enhances children's comprehension of the concept of sustainability.

Communication with participants

Participants are encouraged to ask questions, and use the following reflective point as a prompt for further discussion:

The cultural-historical perspective on the relation between children's learning and development of the concept of sustainability and their attitude toward unsustainability problems.

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407 Experience as an element of activity for promoting client involvement

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: concept formation health and social care remediation

SHORT ABSTRACT

The paper aims to strengthen the cultural-historical activity theory approach to the conceptualisation of experts/expertise by experience (EbE) by 1) reviewing existing cultural-historical activity theory based research of EbE activities; 2) elaborating on the methodological concepts of the cultural-historical activity theory related to experience; 3) reinterpreting two studies of the activity of experts by experience in the cultural-historical activity theory framework discussed.

Methods are based on the content and concept analysis in the framework of the cultural-historical activity theory applied on written and conversational data. A systematic research review, the review of relevant CHAT concepts, and the reinterpretation of two empirical cases in the framework developed form the methodological basis.

The results of two studies dealing with the contributions by EbEs in psychiatric inpatient and outpatient care provide the starting point for the cultural-historical activity theory based elaboration. One analyses EbEs' modes of concept formation in the co-development activity for enhancing client involvement in collaboration with health care professionals. The other focuses on the EbEs' interaction with clients and the ways of remediating the clients' experiences of living with illness. This is a work in progress.

EXTENDED SUMMARY

Background

The participation of experts by experience (EbEs) in the formation of service systems has a decades-long history that stems from arising citizen activism and the recognition of user perspective in the design practices (Noorani, 2013). Research of experts/expertise by experience has been active in Finland during the 2000s (Jones & Pietilä, 2018, 2020; Kiili & Itäpuisto, 2022; Toikko, 2016). Projects focusing on client participation and involvement in service development have been supported. At the same time, the organisation and training of EbEs have progressed drawing more attention to their role not only as the advocates or peer supporters of citizens, clients and patients, but also as cooperation parties for professionals in the organisations of service and care. The research results so far have revealed the multitude of conceptions and expectations concerning the activities of EbEs seen from the perspectives of themselves as well as those of professionals (Meriluoto, 2018). The perspectives of clients are less represented, and the parallel analysis of the intersecting perspectives is broadly missing (Kiili & Itäpuisto, 2022), as are the studies of situated interactions in which the EbEs actually implement their expertise and knowledge in the encountering with clients/patients and professionals.

Aims

The paper aims to strengthen the cultural-historical activity theory (CHAT) approach to the conceptualisation of experts/expertise by experience by 1) reviewing existing CHAT-based research of EbE activities; 2) elaborating on the methodological CHAT concepts related to experience; 3) revisiting two studies of the activity of EbEs, one of which focuses on their peer interaction with clients of psychiatric inpatient and outpatient care, the other on professional co-development for enhancing the client involvement in the same context of psychiatric care. Research questions are, correspondingly: 1. What methodological concepts have been applied and results achieved in the existing CHAT research of the EbE activities? 2. What is the potential of the experience-related concepts of CHAT to expand the theoretical understanding of the EbE activity in society? 3. How can the experience-related concepts of CHAT expand the empirical understanding of the EbE's interaction with clients and professionals?

Methods

The methods are based on the content and concept analysis in the framework of CHAT applied on written and conversational data. The first question addresses the state of the art of the CHAT research done on the EbE activities. A sufficiently systematic research review will be carried out anticipating that the corpus of literature to date is not excessive (refs). The second question related to the CHAT concepts draws on the review while additional concepts from the CHAT legacy will be revisited, such as concept formation (Engeström, et al., 2006; Vygotsky, 1934/1987) and remediation (Miettinen, et al., 2009; Vygotsky, 1978). To answer the third question two empirical studies will be presented and partly reinterpreted by applying the relevant CHAT concepts, one analysing the EbE-patient/client interaction (anonymised), another the co-development discussion between the EbEs and professionals (anonymised).

Results

The contributions by EbEs for enhancing client involvement in collaboration with health care practitioners and development specialists are analysed as the conceptual, practical, and collaborative development efforts for remediating care activity. The EbEs' peer interaction with clients reveals a marked difference between the modes of experience sharing and advising each having consequences to the formation of the object of activity.

Conclusions

It is suggested in the previous study that "(...) becoming an expert by experience can act as a springboard into a new life stage, where the illness experience is seen as a source of knowledge, expertise and a motivator for social action" (Jones & Pietilä, 2020, 810). Experience as the source of knowledge, expertise, and motivator can be further elaborated on cross-sectionally in the cultural-historical activity theory framework.

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408 Digital literacy practices of students and lecturers using e-textbooks at a university of technology

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: digital literacy practices e-textbooks STEM Contradictions

SHORT ABSTRACT

Higher education in South Africa has experienced significant transformation and restructuring, presenting unique challenges for both students and lecturers. Amidst these changes, the advent of new technologies is introducing novel learning opportunities, yet their effective utilisation often demands the development of new digital practices. Despite the growing use of e-textbooks in engineering courses, not all South African students are comfortable with this shift.

This study aims to explore how students and lecturers engage with engineering e-textbooks at a University of Technology in South Africa. Focusing on first-year students and lecturers from the departments of Maritime Studies and Chemical Engineering, the study delves into their interaction with e-textbooks. Data were gathered through individual and focus group interviews, alongside individual interviews with lecturers. This study draws upon Cultural-Historical Activity Theory (CHAT) to understand the socio-cultural and historical factors influencing e-textbook engagement, interaction order, and the usage of affordances of e-textbooks.

The findings showed that introducing e-textbooks as part of the curriculum, the following contradictions were revealed in students' activity system, namely limited knowledge of how to operate e-textbooks, limited use and restricted access. The study contributes to existing knowledge by conceptualising digital literacy practices and pedagogy within an activity system of CHAT.

Moreover, the study offers insight into the digital literacy practices of engineering students and lecturers in the context of e-textbook use for the acquisition of engineering concepts, highlighting the nuanced challenges and opportunities inherent in this digital transition.

EXTENDED SUMMARY

Background

The landscape of higher education in South Africa has been undergoing a significant transformation, with restructuring processes presenting a variety of challenges for both students and lecturers. A crucial aspect of this transformation is the integration of digital technology into educational practices, particularly in engineering education. The advent of new technologies, especially e-textbooks, offers novel learning opportunities. However, their effective utilisation hinges on the development of new digital practices. The field of Engineering Education research, still relatively nascent, has yet to fully address the specific challenges and opportunities presented by the use of e-textbooks in this discipline.

Aims

This study aims to investigate how students and lecturers at a University of Technology in South Africa engage with engineering e-textbooks. The focus is primarily on first-year students and lecturers in the departments of Maritime Studies and Chemical Engineering. By examining their interactions with e-textbooks, the study seeks to understand the socio-cultural and historical factors influencing this engagement. The research is guided by the objectives of identifying patterns in e-textbook interaction, understanding the challenges faced by students and lecturers, and offering insights into digital literacy practices within an engineering education context.

Methods

The study employed a mixed-methods approach, gathering data through various means. This included individual and focus group interviews, observations, and a 'think-aloud' protocol for students. In addition, individual interviews were conducted with lecturers. The methodological framework was grounded in Cultural-Historical Activity Theory (CHAT), providing a lens through which to understand the influences on e-textbook engagement, interaction order, and the utilisation of the affordances of e-textbooks.

Results

The research identified four distinct patterns in how students interact with e-textbooks, with a majority displaying a preference for a blend of multimedia and digital features over traditional text-based practices. However, a significant number of first-year students struggled with the transition to university-level reading and learning, primarily due to limited prior exposure to digital devices and experiences. The introduction of e-textbooks revealed contradictions in students' activity systems, such as limited operational knowledge and restricted access. Lecturers, on the other hand, faced challenges in adapting to a changed teaching role and in presenting content effectively through e-textbooks.

Conclusions

The study underscores the need for additional support for students less comfortable with e-textbooks, highlighting the importance of addressing varying levels of digital literacy among students. It also points out the necessity for lecturers to adapt their teaching methods to effectively utilise e-textbooks in academic pursuits. The findings emphasise the pivotal role of lecturers in guiding students through this digital transition.

Interaction with Participants

The study envisages the creation of a platform for continuous dialogue and support, fostering a community of practice that can collectively navigate the complexities of the digital transition in engineering education.

413 Formative interventions facing political and methodological challenges

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Theme: Promoting inclusiveness in social practices

Keywords: Formative interventions Decolonization Transformative agency

SHORT ABSTRACT

With the emerging fourth generation of cultural-historical activity theory, CHAT-based formative interventions face new challenges, both politically and methodologically. This symposium will examine these challenges and innovative ways of responding to them with the help of four sets of formative interventions to develop inclusive, just, and sustainable solutions to global crises. The first example is the series of formative interventions conducted with practitioners and organizations working to eradicate homelessness in Finland. The second example includes cases of formative intervention with rural farmers and unemployed youth who seek to transform their activity for social and environmental justice in South Africa. The third example is that of Change Laboratories conducted with adolescents in search of significance within and beyond the school. The fourth example is that of Indigenous Learning Labs conducted in the United States, working against racism experienced by Native American students in school. Despite the differences in the political challenges, the four cases share certain methodological challenges. Firstly, they face the challenge of pursuing interconnected interventions that should learn from one another. Secondly, they face the challenge of durability over multiple cycles of expansive learning. Thirdly, they face the challenge of crossing boundaries between hierarchical levels of decision-making and governance.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This paper presents the tale of a series of 4G formative intervention studies conducted in 2018-2023 in Finland to support a multi-level effort toward the eradication of homelessness. One peculiarity of these studies is that they were carried out during a period in which the local challenges with homelessness in Finland coincided with the impact of a series of global upheavals, ranging from the refugee crisis, to COVID 19 and the war in Ukraine. The tale tells how the Finnish Housing First homelessness strategy could continue to develop despite political discontinuity and large-scale instabilities with the help of these intervention studies.

The paper concludes by presenting the political and methodological challenges identified during these studies as well as the lessons learned for pursuing 4G formative interventions.

Political challenges range from the roles of the researcher, 2. the institutional function of university in society, 3. research processes and outcomes understood in terms of generativity, 4. new transdisciplinary openings, and 5. new openings that technological advances afford. Methodological challenges pertain to 1. CHAT proposition of historicity 2. the need to devise diagnostic tools enabling to capture specifically foci of prospective formative interventionist efforts, 3. keeping the momentum despite change of political constellations, 4. relating to higher hierarchical layers of power. On the lessons learned, the paper reflects on ways in which political and methodological dimensions overlap and on the inevitability of engaging theoretical considerations as well, of both ontological and epistemological nature.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

Finland has distinguished itself as the only nation in Europe that has been able to significantly reduce homelessness since 2008. Yet in recent years some factors have emerged which threaten the possibility for this country to continue in this direction and eventually eradicate homelessness. In 2018–19, when the third national programme was coming to an end, there was no clear continuation commitment on the part of Sipilä's government. This was also a period in homelessness work in Finland filled with uncertainties due to a major generation change among administrators and practitioners, evidence of new emerging needs among clients, the identification of a particularly challenging group of clients whose housing solutions repeatedly failed. In 2019–2023 Marin's government programme supported homelessness work but the turmoil caused by the pandemic and then by Russia's attack on Ukraine obstructed a timely and focused approach. Currently, with Orpo's strong market ideology-based government, the extent of the planned cuts on public funds from 2023 onward may significantly damage the progress made for fifteen years in the homelessness work sector. In other words, at a point when eradicating homelessness had become a realistic perspective in Finland, the past five years have casted new shadows on these prospects. The portion of people living in rental homes has grown steadily, market-based rental homes have rapidly increased, the number of evictions rose by 13 per cent in 2022 and mortality risks among young homeless has been found 10-fold compared to population average.

Aims

The paper is a chronological account of a series of formative intervention studies with homelessness practitioners from 2018 to 2023. The studies focused on change efforts taking place locally at the level of a supported housing unit for young people, at the city level with two municipalities in Finland, and at the national level, with a collective comprising the coordinator of the national programme for the prevention of homelessness at the Ministry of Environment, four prominent NGOs, six cities, 9 regions and the largest national non-profit landlord for affordable rental housing in the country.

Methods

The methods of the Change Laboratory and identification of expansive learning actions were put into use to trace the history and current developments of homelessness work within and across the organizations involved, to explore their interconnections, and to explore reasons behind possible disconnections between them. Throughout this process, step by step, participants also reconceptualized their joint object of work and designed models meant to inform collaborative future steps to be undertaken. The formative interventions at the national and regional levels, also building

on impulses from the CLs at the ground level of the housing unit and at the intermediate level of cities, produced proposals of action plans for homelessness work and is defining visions for FHF 2.0 principles which were brought to the attention of political forces and decision-makers.

Results

The chronological account of these studies offer an empirical basis to reflect on the role of distributed local and national governance in which research may play a key role. This type of governance is particularly important in the face of discontinuity risks of approaches such as FHF which have been proven successful and which represent significant resources for the common good. Furthermore, the studies convey that it is possible to integrate practice, research and policy into a process led by a plurality of very diverse yet highly complementary actors and institutions. Cohesiveness among these actors and institutions is vital to be supported, strengthened and expanded for homelessness to be eradicated.

Conclusions

The paper concludes by presenting the political and methodological challenges identified during these studies as well as the lessons learned for pursuing 4G formative interventions. Political challenges pertain to 1. the changing roles of the researcher, 2. a novel understanding of the institutional function of university in society, 3. a different perspective on research processes and outcomes away from the notion of generalizability and attempting at fostering generativity, 4. new transdisciplinary openings with economics, political sciences among other disciplines seldom involved in discussions with learning scientists, and 5. new openings that technological advances afford. Methodological challenges pertain to 1. endorsing CHAT proposition of historicity in a deeper and wider sense, 2. developing diagnostic tools that enable specifically focused formative interventions, 3. keeping the momentum despite change of political constellations, 4. relating to higher hierarchical layers of power across changing political orientations. On the lessons learned, the paper reflects on ways in which political and methodological dimensions overlap and on the inevitability of engaging theoretical considerations as well, of both ontological and epistemological nature.

How interaction with the participants is planned

The paper is presented in the form of a tale. The concluding remarks are offered in the form of questions aimed at eliciting the audience's own connections with formative interventions they might have conducted or consider conducting.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

The political challenge that I focus on in this symposium contribution, is cognitive and epistemic justice in decolonial formative intervention research. Drawing on cases of formative intervention research processes, I reflect on how researchers are giving attention to this political challenge and how they navigate associated methodological challenges that arise, both in the process and in the development of analytical tools that are congruent with the formative intervention intentions. The study draws on cases of community-based formative intervention research conducted in the Environmental Learning Research Centre at Rhodes University in South Africa, where most formative intervention studies take place in 'unbounded' third and fourth generation type CHAT study designs. In these studies, expansive learning and transformative agency processes are oriented towards transforming complex objects and activities that reflect a striving for social and environmental justice amongst the most marginalized in southern African society, including rural farmers, women and

unemployed youth. In these contexts we find deep seated policy and practice contradictions that emerge from histories of coloniality, oppression and exclusion, with contemporary continuities and new dynamics. The results of the study elaborate dimensions of a methodological principle of epistemic inclusion grounded in dialectical ethics of freedom and solidarity. Our studies show that this has implications for ethical-political expansion of the object in the contexts concerned.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

Formative intervention (FI) research has been gaining traction in the Environmental Learning Research Centre research programme for the past 15 years. Its dual focus on expansive learning (Engeström, 2009) and transformative agency (Sannino, 2022), expansion through third and fourth generation designs (Engeström and Sannino, 2021), and its ability to provide a means of conducting transformative educational research *with* communities in southern Africa appear to be some of the reasons why this research approach has blossomed. Here we have conducted a number of FI research projects with marginalized communities, including rural farmers, women and unemployed youth who seek to transform their activity in ways that strengthen social and environmental justice. This is because policy and practice contradictions with their roots in histories of coloniality, extractivism and oppression of peoples and cultures, continue to produce exclusion and marginalization, despite contemporary rhetoric to the contrary. Amongst others, FI studies include a) rural women farmers struggling to produce food for families in contexts where land and water rights are not well secured and where pressures of climate change are impacting on livelihood options, and where relations of patriarchy continue to dominate; and b) communities that are involved in water quality management in their local catchments, where water pollution problems are systemic and dangerous to human and ecological health, and where youth unemployment levels are high and governance systems are in failure. In all contexts policy contradictions exist that espouse inclusion of local communities but fail to enact inclusion in policy practices.

Aims

The aim of this study is to focus on one political challenge in FI research and to elaborate its methodological dynamics as these are arising from a selection of our formative interventionist studies oriented to a) and b) above.

The political challenge is: enabling cognitive and epistemic justice in FI research as a methodological principle of inclusivity in decolonial formative interventionist research studies.

Methods

This paper is produced via a reflective meta-review of a cluster of formative intervention studies that are dealing with contextual challenges at a) and b) above. The purpose is to review how researchers have been confronting the political challenge of cognitive and epistemic justice in formative interventionist research, and to surface methodological process implications from this practice. In brief, cognitive justice is based on the recognition of the plurality of knowledge (Engeström's multivoicedness) and a respect of the coexistence right of such forms of knowledge (i.e. not be oppressed; Visvanathan, 2006) even in contexts where forms of knowledge may appear to be incommensurate (e.g. in some distinctions between indigenous and scientific knowledges), with De Sousa Santos (2015) arguing for co-existence of 'ecologies of knowledge'. This draws attention to how a plurality of knowledge(s) may come to co-exist in FI studies in our context. Deepening this analysis

from a process perspective, Fricker's (2007) research differentiates between testimonial injustice (when prejudice causes a hearer to give a deflated level of credibility to a speaker's words), and hermeneutical injustice (when collective interpretive resources puts someone at an unfair disadvantage when it comes to making sense of their social experiences). Of particular interest is the insight from Fricker that "hermeneutical injustice is caused by structural prejudice in the economy of collective hermeneutical resources", which means we need to give careful attention to the concepts, languages and tools in use in formative intervention research and their powers to exclude or include.

Results

Results of the studies point to a number of methodological implications for formative interventionist research, amongst which are:

Abilities to be alert to, and recognise the power and potential of enacting cognitive justice in formative interventionist research studies through allowing for a plurality of knowledges to surface and co-exist in relation to the object of activity and its potential for ethical-political, spatio-temporal and other forms of expansion (e.g. indigenous knowledge of farming practices held by women, in addition to scientific knowledge held by mostly men working in extension services). Abilities to be alert to, and recognise when testimonial and/or hermeneutic injustices may be occurring in formative intervention research processes with measures put in place to resolve these. In our context, this seems to require conducting the formative intervention studies in vernacular languages, working carefully with translations, and developing concepts in multiple languages using novel translation devices and media forms. It also seems to require co-development of novel double stimulation tools.

Conclusions

Overall, the results of the study show that enabling cognitive and epistemic justice in FI research offers a methodological principle for inclusivity in FI research. Findings point towards the need for 'attuned' epistemic sensitivity grounded in dialectical ethics of freedom and solidarity. This elaborated methodological principle seems to be central to the possibilities for ethical-political expansion of the object of activity.

How interaction with the participants is planned.

Dialogue and engaged response.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Change Laboratories are typically conducted with adults in work activities or communities facing contradictions that require transformations. We conducted two interventions with eighth-grade students in comprehensive schools in Finland, aimed at supporting them to construct and implement projects they found significant for their own lives and futures.

The political challenge motivating our interventions was the widely discussed phenomenon of political apathy and alienation among youth. Youth political participation takes new forms that are not captured in traditional definitions. Our interventions aimed at developing ways in which adolescent students can find and cultivate significance in their lives, understood as commitments and actions that connect the adolescent students' personal interests with collective actions for a just and equitable world. This may be understood as taking steps toward *object-oriented political participation*.

The methodological challenge is on what grounds our interventions with adolescents can be regarded as Change Laboratories. This will be examined with the help of five questions: (1) What was the

activity in which we were intervening? (2) What were the contradictions demanding transformation in this activity? (3) To what extent did the interventions realize the principle of ascending from the abstract to the concrete? (4) To what extent did the interventions realize the principle of transformative agency by double stimulation? (5) To what extent did the interventions lead to collective articulation of a zone of proximal development? My conclusion is that these interventions are a variation of the Change Laboratory, specifically designed to address adolescents' leading activity of search for significance.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Change Laboratories (CLs) are typically conducted with adults involved in work activities or communities, facing contradictions that require transformations. We conducted two CLs with groups of eighth-grade students in comprehensive schools in Helsinki and Tampere, Finland, supporting the students to construct and implement projects they found significant for their own lives and futures. Each intervention went on for a whole school year and resulted in tangible outcomes (Engeström, Rantavuori, Ruutu & Tapola-Haapala, 2023a; 2023b).

The political challenge motivating our interventions was the topical phenomenon of political apathy and alienation – or disengagement - among young people (e.g., Dahl et al., 2017; Foa et al., 2020; Kitanova, 2020; Zhelnina, 2020). The popular disengagement thesis is contested by scholars arguing that youth political participation takes new forms that are not captured in traditional definitions (Weiss, 2020).

In line with this realization, our interventions aimed at developing ways in which adolescent students can find and cultivate significance in their lives, understood as commitments and actions that connect the students' personal interests with collective actions and projects for a just and equitable world.

These were expansive learning processes oriented at objects that have significance and transformative potential beyond individual interests. They may be understood as taking steps toward *object-oriented political participation*.

From the point of view of activity theory, the object is the durable, internally contradictory motivating purpose of a collective activity, not reducible to a 'problem' or 'issue'. It opens up a horizon of possible actions and is continuously transformed by those actions. The object has material existence; a general object such as health and illness for medical practitioners is materially instantiated in each patient. This perspective is related to, but also significantly differs from, the idea of 'material participation' (Marres & Lezaun, 2011; Marres, 2012), focused on the ways material devices enable participation. For activity theory, there is a crucial difference between an object and a device (or instrument) – a difference all but eliminated by the theory of material participation. In youth research, Schiermer (2022) highlights the notion of object. However, objects are largely reduced to clothing items and profane popular cultural artefacts. In the paper, I will develop the concept of object-oriented political participation in critical dialogue with Marres and Schiermer, based on an analysis of our two CLs.

The methodological challenge is whether and on what grounds our interventions with adolescents can really be regarded as Change Laboratories. This will be examined with the help of five questions: (1) What was the activity in which we were intervening and how is it related to the leading activity of adolescents? (2) What were the historically accumulated contradictions demanding transformation in this activity? (3) To what extent did the interventions realize the principle of ascending from the

abstract to the concrete, implemented as a process of expansive learning? (4) To what extent did the interventions realize the principle of transformative agency by double stimulation? (5) To what extent did the interventions lead to collective articulation of a zone of proximal development for the activity in focus? Each one of these questions will be answered with the help of data and findings included in papers produced by my research team that conducted the CLs.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Indigenous youth receive exclusionary discipline more frequently and severely for more subjective reasons such as disrespect in U.S. schools. This paper presents the Indigenous Learning Lab (ILL), a multi-year formative intervention study conducted at a public high school serving Indigenous youth in the state of Wisconsin. ILL is a cross-pollination between the formative intervention methodology and decolonizing epistemologies to create systemic changes driven by leveraging spatiotemporally, knowledges, and Indigenous futurity of local community members. ILL brought about systemic transformation in the settler-colonial school system in reciprocal and sustained partnership with the tribal government, Wisconsin Indian Education Association, state's education agency, the school district, and a local university. In Indigenous Learning Lab, Indigenous youth, parents, educators, and tribal government representatives along with White settler administrators and educators engaged in collective design praxis—critically examining systemic breakdowns embedded in the existing system and exerting their transformative agency in designing an equity-oriented new support system. In this paper, we will present how ILL curated an inclusive systemic design process through transformative agency by double stimulation (TADS). Our paper will demonstrate how transformative agency can be facilitated at schools serving Indigenous youth through an inclusive knowledge-production and future-making process with a decolonizing approach.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

The U.S. has striven for the dissolution of Indigenous societies by establishing a colonial society on seized land (Wolfe, 2006), quelling sovereignty and collective agency of Indigenous communities. It has disrupted Indigenous people's future-making activities as transformative agents. In this paper, we will present findings from a four-year long formative intervention study, *Indigenous Learning Lab (ILL)*, implemented at Northwoods High School through a coalition of an Anishinaabe tribal nation, Wisconsin Department of Public Instruction, Wisconsin Indian Education Association, and a university-based research team.

Background

The city where the school is located was the epicenter of Wisconsin's Anti-Indian movement of the 1990s, the Walleye War. Anishinaabe students who made up 21% of the student population received over 60 % of the suspensions and 100 % of the expulsions (U.S. Department of Education, 2018). The school leadership implemented ILL to further their partnership with the community and systematically address disparities in behavioral outcomes: to *move* beyond the status quo.

Aims. ILL aimed at facilitating transformative agency among Anishinaabe students, families, educators, and community members and non-Indigenous educators to design the future of their school's behavioral support system.

Methods

ILL utilized transformative agency by double stimulation (TADS, Sannino, 2015) focusing on the development and use of mediating tools, which enable systemic transformation aligned with decolonizing motives and epistemologies. Transformative agency is a change-oriented process of undertaking actions to repurpose or expand the object of activity (e.g., from punishment to support) and create novel solutions to systemic contradictions (Engeström & Sannino, 2021). To facilitate transformative agency, a constellation of volitional actions, agents (subjects) need mediating artifacts that help them to take steps toward changing their circumstances. The starting point of TADS are conflicts of motives (first stimulus). TADS is set in motion by means of second stimuli, artifacts appropriated or developed by local community members (Sannino, 2015).

Results

Through engagement with joint, collaborative problem-solving, members voiced five different types of transformative agency: *Resisting, criticizing, explicating, envisioning, and committing to concrete action*. The evolutionary pattern of members' transformative agency was aligned with the expansive learning cycle (Engeström, 2015). Multiple mediating artifacts such as school's outcome data, the map of the existing behavioral response plan, and student handbook were mobilized to generate new motives, volitional actions, and ultimately expand transformative agency among members.

Members collectively analyzed the school's academic and discipline data, which was disaggregated by race and shared their experiential knowledge(s) of settler colonialism and white supremacy. Statistical data and members' experiential narratives functioned as first stimuli through which members can interpret disproportionality with a situated lens of how school discipline systems historically play a role in reinforcing white privilege by excluding Indigenous youth and cultural practices. In the process of constructing the object, Indigenous practices and epistemologies became more visible and consequential mobilizing their expertise, histories, and future imaginations to design a new behavioral support system that aims to be inclusive, positive, and ecologically valid.

Members created multiple solutions to address disproportionality. For example, they envisaged expanded community outreach, such as holding conferences and afterschool tutoring in the tribal reservation to restore reciprocal relationships with the community. They also envisioned restorative processes to repair broken relationships between White teachers and students. The new system was conceptualized as a living, adaptive artifact that is responsive to school community's ever-evolving needs and goals and local dynamics. Administrators, teachers, the head of the Tribal Education Department, and students participated in the implementation team. They are currently working on adapting and improving the new support system designed through Learning Lab processes to address the unprecedented challenges and opportunities posed by the COVID-19 pandemic.

Leont'ev (2005) stated that "[a] volitional act is an act carried out by choice...Volitional action is action under the conditions of choice based on decision making" (p. 79). However, choice and decision-making are not sufficient for volitional acts: "If an action is carried out without obstacles, it cannot be volitional, even if there is a choice and a decision is made" (p. 80). The Anishinaabe transformative agency involves survivance (e.g., never giving up, Vizenor, 1994). Survivance is the combination of survival and resistance that moves Indigenous people from passive objects to agents of power, goal, and change.

Conclusion

Decolonization should be based on Indigenous sovereignty and futurity (Tuck & Yang, 2012). We will present how TADS facilitated and nurtured transformative agency for systemic transformation to address the racialization of school discipline. The study may contribute to the literature by demonstrating how transformative agency can be facilitated at schools serving Indigenous youth through a decolonizing knowledge-production and future-making process.

How interaction with the participants is planned.

We will present our study mainly with visuals. We will invite participants to discuss the facilitation of transformative and sustained participation of families, students, and community members in decision-making process, especially in schools serving indigenous communities.

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414 ONLINE - Scientific Literacy Development through Cultural-historical Lens: A Theoretical Analysis

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Theme: Bringing together theory and practice

Keywords: scientific literacy cultural-historical theory early years Meaningful education in pre-primary through higher

SHORT ABSTRACT

Scientific literacy is how children develop their scientific knowledge and apply it in everyday situations (Roberts, 2007). The cultural-historical theory allows us to understand the process of developing scientific literacy among children in a holistic way, as it emphasises understanding children's development concerning their social-cultural activities (Vygotsky, 1966, 1978, 1987, 1998). Developing scientific literacy in the early years of play-based activities using the cultural-historical lens is still yet to be understood. Through a scoping review and articulating the theoretical lens, this paper discusses how three concepts of cultural-historical theory contribute to promoting scientific literacy through play-based activities in the early years. It is found that children transform the meaning of objects during play (Vygotsky, 1966), and culture-conscious planning and play activities help them develop their science and scientific knowledge (Sikder & Fleer, 2018), which could gradually develop their scientific literacy. Children also develop their higher mental functions with the help of more knowledgeable others, which creates the ZPD (Veresov, 2006; Vygotsky, 1978; Vygotsky, 1998). Educators and skilled partners help children with scaffolding to extend and develop their complex skills, such as scientific literacy (Briner, 1999). In addition, play-based everyday concepts develop their scientific concept by creating children's own reflections and moving from concrete to abstract form. Conversely, the gained science concepts from their everyday play help shape developing children's everyday concepts by moving from abstract to concrete and increasing the generalisation of meaning as a dialectical process (Vygotsky, 1987), which eventually develops their scientific literacy in the early years.

EXTENDED SUMMARY

Background

Scientific literacy in early years is how children develop their scientific knowledge and apply it in everyday situations through play-based activities (Roberts, 2007). The development of scientific literacy "requires an understanding of the culture and discourse of science" (Johnson, 2016, p. 371), which is also a complex process as various social and cultural environments and factors influence this development process. The cultural-historical theory allows us to understand the process of developing scientific literacy among children in a holistic way, as this theory emphasises understanding children's learning development with their social and cultural activities (Vygotsky,

1966, 1978, 1987, 1998). However, developing scientific literacy in early years in play-based activities using the cultural-historical lens is still yet to be understood.

Aims

This paper discusses how three concepts of cultural-historical theory, such as children's culture, context and environment, Zone of Proximal Development (ZPD) and everyday concept and scientific concept, contribute to promoting scientific literacy through play-based activities in the early years.

Methods

This study analyses the gaps in developing scientific literacy in play-based activities in early years through a scoping review and then articulates the theoretical lens in addressing how the development of scientific literacy could be explained holistically using this lens. The pertinent research literature of cultural-historical theory and relevant analytic models were reviewed in explaining the phenomena of developing scientific literacy.

Results

Vygotsky (1966) stated that children transform the meaning of objects during play and develop their social, cognitive, speech and emotional skills. Children's social and cultural context in play activities create new meaning for their play (Fleer, 2011), and culture-conscious planning and play activities help them develop their science and scientific knowledge (Sikder & Fleer, 2018), which could gradually develop their scientific literacy. Children also develop their higher mental functions with the help of more knowledgeable others, which creates the ZPD (Veresov, 2006; Vygotsky, 1978; Vygotsky, 1998). Educators and skilled partners help children with scaffolding to extend and develop their complex skills, such as scientific literacy (Briner, 1999). In addition, play-based everyday concepts develop their scientific concept by creating children's own reflections and moving from concrete to abstract form. Conversely, the gained science concepts from their everyday play help shape developing children's everyday concepts by moving from abstract to concrete and increasing the generalisation of meaning as a dialectical process (Vygotsky, 1987), which eventually develops their scientific literacy in the early years.

Conclusions

Children's learning process is not linear, and they develop a complex understanding of small scientific concepts in the context of regular play (Sikder & Fleer, 2018). Therefore, they change the meaning of objects and create new meanings aligned with the applicability of scientific knowledge in a unique situation (Vygotsky, 1966), which could promote their scientific literacy. The play-based learning process is associated with children's learning environments and cultural influences on what to play, how to play, how to interact and how everyday concepts support the development of scientific concepts (Fleer, 2022). It would seem that developing scientific literacy appears to be associated with the social and cultural process and children's mental development process in an everyday context.

How interaction with the participants is planned:

I will prepare a total of 20 PowerPoint slides, which will first provide a brief introduction about the concept of scientific literacy and the literature gap from a scoping review study. I will provide a justification of how scientific literacy in the early years could be understood using a theoretical lens. I will then discuss what specific concepts of the cultural-historical theory help explore scientific literacy development and how. Finally, I will discuss future research directions in line with scientific literacy and cultural-historical theory.

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415 Change Laboratories: Measuring transformative agency in action

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Creative ways to do research

Keywords: Change laboratories Transformative agency Higher education

SHORT ABSTRACT

When teachers encounter structural problems that require a transformation of their teaching practices, there is a need for transformative agency. We used the Change Laboratory methodology to bring about change in a complex educational context and facilitate the development of teachers' transformative agency (Engeström, 2011). Previous research focused on teachers' intentions for change, based on their expressions during Change Laboratory sessions, while actual changes in their teaching practice has, at best, only been measured using on reflections on the implementation process. Our study emphasizes the actual implementation of new educational models by teachers. The aim was to evaluate the extent to which teachers have transformed their teaching practices and achieved transformative agency. The research, conducted in a Master's of Law program, compared the activity systems of the courses of four participating teachers, prior and after the implementation of changes, and investigated to what extent the changes in the teaching practices resolved the contradictions. We analyzed class observations, interviews and panel discussions with students and learning analytics data. To investigate the role of individual and collective transformative agency in bringing about these changes, reflection interviews with the four participating teachers will be conducted. Initial results indicate the changes in the courses resolved the contradictions and transformed teaching practices, with students taking more responsibility for their learning. Our study offers valuable insight in the link between Change Laboratory interventions, transformative agency, and actual changes in teaching practices.

EXTENDED SUMMARY

Background and aims

Teachers who actively shape their education demonstrate agency. When teachers encounter contradictions, defined as “historically accumulating structural tensions within and between activity systems” (Engeström, 2011, p. 609) that require a transformation of their activity system of teaching and learning, there is a need for transformative agency (Engeström, Rantavuori, & Kerosuo, 2013). Transformative agency can be defined as “the extent to which teachers are able to “break away from the given frame of action and take the initiative to transform it” (Virkkunen, 2006, p. 43). In other words, teachers need to transform their activity system in such a way that the contradictions are resolved.

A Change Laboratory is a methodology for effecting change in activity systems (Engeström, 2011). During Change Laboratory sessions, a process of expansive learning is undertaken (see Figure 1).

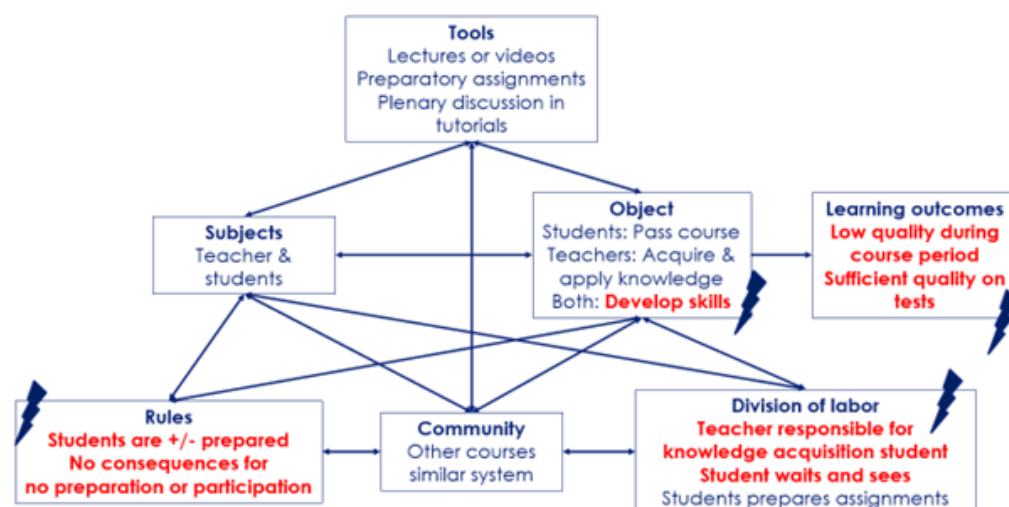


Figure 1: Expansive learning cycle (adapted from Engeström, 1987).

Expansive learning is a collective process in which teachers let go of their familiar teaching practices, develop new educational models that aim to transform their current educational activity system, and in which teachers can achieve transformative agency (Engeström, 2011).

Previous research on Change Laboratories primarily focused on teachers' plans for transforming their teaching practices (Augustsson, 2021; Englund & Price, 2018; Salloum & BouJaoude). Analyses focused on teachers' expressions during Change Laboratory sessions and gauged whether in these expressions transformative agency was evident (phases 3 and 4). The extent to which participants actually implemented the new models has, at best, only been indirectly measured, based on reflections on the implementation process (phase 6). Our study aims to evaluate the extent to which teachers have transformed their teaching practices and achieved transformative agency by focusing on the actual implementation of new educational models by teachers (phase 5).

In the context of a Master's of Law program, we studied the actual changes in the courses of four teachers who participated in a Change Laboratory to investigate the extent to which their education has been transformed and teachers have achieved transformative agency. The research questions are: RQ1. To what extent have the changes in the teachers' courses resolved the contradictions in their activity systems?

RQ2. How are the changes in the teachers' courses related to their transformative agency?

RQ3. What is the role of individual and collective transformative agency in the changes in the teachers' courses?

Methods

A two-year Change Laboratory trajectory was conducted in a Master's of Law program at a large Dutch university. The project aimed to deepen students' subject-matter knowledge and foster their transdisciplinary skills. The four participating teachers coordinated and taught different courses, with enrollment varying between 30 and 100 students.

To answer RQ1, we analyzed the activity systems of the four courses before (phase 2) and after (phase 5) changes were implemented. In the investigation of the activity system before the changes, contradictions were established. Based on these contradictions, the teachers collaboratively worked on new course models that could potentially resolve the contradictions. To evaluate the success of

this, class observations, interviews and panel discussions with students, learning analytics data of online learning activity, and exam results were used.

To answer RQ2 and RQ3, reflection interviews with the teachers will be conducted. Teachers will be probed about their considerations for changing their courses (RQ2), and about the role of others in their decision making process (RQ3).

Results

Figure 2 shows the overarching activity system prior to changes. The lightning bolts highlight the contradictions that were found in common over all four courses. These overarching activity system and contradictions were the result of phase 2 and formed the basis for modelling the new teaching practices (phase 3).

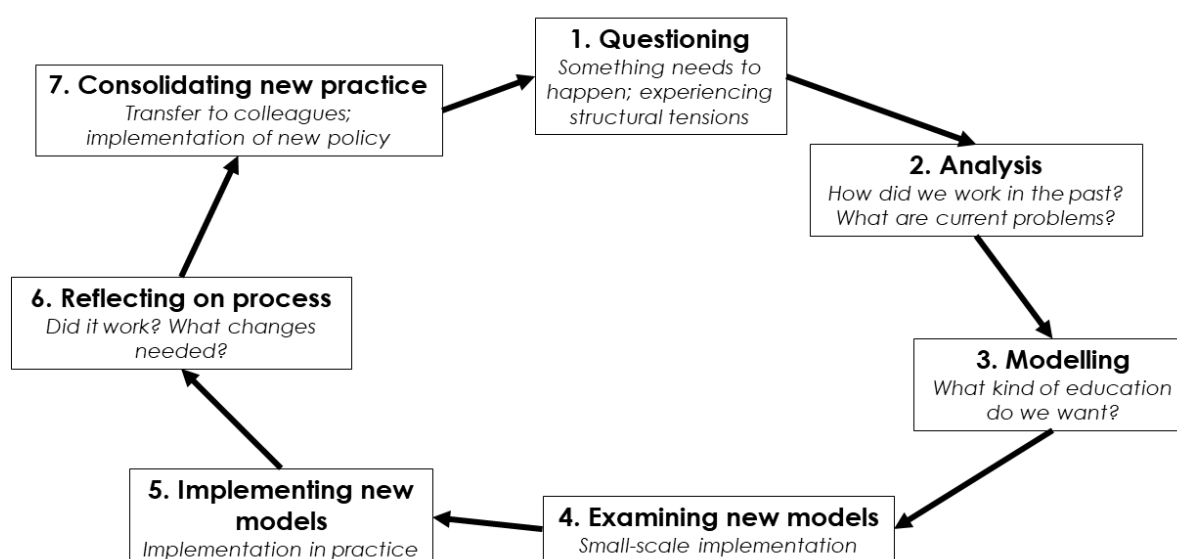


Figure 2: Overarching contradictions and activity system prior to change.

An initial analysis of the implemented educational models suggests that the changes resolved the contradictions and led to transformed activity systems, in which students take more responsibility for their own learning process and for participating in class. During the presentation, we will also share the results of the reflection interviews. In future research, we hope to gain insight into whether the current phase (phase 7) leads to consolidation of the new practice within the entire master's of Law program.

Conclusions

The initial results suggest the Change Laboratory indeed led to transformed teaching practices and educational activity systems. These results contribute to the evidence on the effectiveness of the Change Laboratory methodology in educational contexts. Furthermore, our approach to study the actual changes in the teaching practice of teachers is an example of a novel way to investigate teachers' transformative agency in educational practice.

Interaction with participants

Participants will be asked to brainstorm on the relationship between teachers' transformative agency and actual teaching practices. Central question will be what the changes in teaching practices tell us about teachers' transformative agency.

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417 Beyond Physical Space: Empowering Collaborative Educational Experiment with Digital Technology

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Creative ways to do research

Keywords: Cultural-historical methodology educational experiment dialectical relationship

SHORT ABSTRACT

Through the cooperation between researchers and teachers, the educational experiment creates optimal conditions for the development of the participating children, as well as the professional development of teachers. However, how researchers virtually collaborative in conducting an educational experiment while maintaining their dual roles as participants and researchers is less understood. In order to address this problem, this study provides an effective methodological approach by illustrating how two researchers in two countries use digital technology as a relational tool to conduct an educational experiment. It is argued that there exist dialectical relationships between the researcher who joined via Zoom as a research fairy and the imaginary situation, as well as between the on-site and off-site researchers within the collaborative educational experiment. To be specific, a dialectical relationship between the research fairy and the imaginary situation is established, helping maintain the researcher's participation role. Additionally, digital technology assists researchers in developing dialectical relationships through mutual conversation, thereby enhancing collaboration in the educational experiment through the process of knowing and re-knowing. The multi-layered dialectical relationship was synthesised as a unity and created a new mode of collaboration between researchers and participants in the cultural-historical educational experiment.

EXTENDED SUMMARY

Background

The COVID-19 pandemic adversely affected educational research, which brought crises for cultural-historical researchers who needed to maintain active participation in the research activities (Hedegaard, 2008a). As argued by Hedegaard (2008b), participating in research activities requires the researcher to have a doubleness role — a researcher and a participant. This crisis informs cultural-historical researchers to conduct research through digital technology, and opens up new methodological approaches to research. Digital technology is used widely in research, and it is approved as a useful tool to promote teaching, learning as well as research processes (van der Meij & McKenney, 2022). A digital visual methodology was identified as a useful tool to study children's learning (Li, 2014; Ma et al., 2022), teacher pedagogy (Disney & Li, 2022), family dialogue (Monk, 2014) and researcher's positioning (Quinones, 2014). However, it is unclear how digital technology

could be used as a “relational” tool to promote and maintain the relationships between researchers, as well as between researchers and research participants.

Aims

This study aims to understand how researchers virtually collaborate in conducting an educational experiment, maintaining their dual roles as both participants and researchers.

Methods

Cultural-historical methodology is a general framework where specific research methods and procedures are selected regarding cultural-historical theoretical principles and therefore make a coherent whole (Veresov, 2014). A cultural-historical methodology exposes the dynamic processes of development by exploring various types of social conditions (Fleer, 2020). It also reflects the conceptions of dialectical thinking and knowledge that are realised by research into social practice (Hedegaard, 2012). 62 children (age group 4-5, mean: 4.58 years old), 4 teachers and 2 researchers participated in this research. One of the researchers joined via Zoom to conduct the educational experiment. The Conceptual PlayWorld (Fleer, 2018) was introduced and implemented within the educational experiment, creating an imaginary situation for researchers to engage with children as active participants. While the COVID-19 pandemic brought crises in participation for researchers who were off-site, the digital visual methodology has demonstrated its advantages in promoting communication. The data were collected through digital video observation to understand the collaboration between the two researchers. The data were analysed through the three levels of interpretation (Hedegaard, 2008c).

Results

Two dialectical relationships were identified in this educational experiment. The dialectical relationship between the research fairy and the imaginary situation and the dialectical relationship between researchers within a real situation. The research fairy’s role came from the imaginary situation and created a collective imaginary situation in which children could take part. Meanwhile, the research fairy brought dramatic information and created more communication opportunities which further enriched the imaginary situation. The relationship between the research fairy role and the imaginary situation demonstrated the internal interdependency in addressing the participating role in the COVID-19 background. This dialectical relationship made full use of the role of imagination in children’s leading activity of play and created opportunities for the researchers to interact with children through digital tools when the researchers’ experienced crises in pushing forward the research process within the COVID-19 background.

In this research, the dialectical relationship also exists in the relation between researchers within a real situation. The dialectical relationship between the two researchers collaboratively brings forward the Conceptual PlayWorld implementation. The dialectical thinking brings the on-site and off-site research perspectives together as a synthesis in this collaborative experiment. In addition, the dialectical relationship also inspiring the data analysing process.

COVID-19 brought a crisis to the research process, while digital technology created conditions for researchers to enrich the cultural-historical methodology, which in turn promoted remote data collection and analysis during the pandemic period. Digital technology as a rational tool provides possibilities for both researchers to understand the research question within the cultural context, which promotes the *tool validity* (Fleer, 2014a) in the collaborative educational experiment. Through

digital technology, the two researchers were able to maintain relationships with the participants and collaborate during the data collection and analysis process.

Conclusion

The result indicates a multi-layered dialectical relationship was synthesised as a unity that created a new way of collaboration which went beyond physical space to support the researchers to maintain their dual roles in a cultural-historical study.

How interaction with the participants is planned

Ask Questions: Encourage audience participation by asking thought-provoking questions related to the presentation topic. For example, this study is about creative methodology in cope with the COVID pandemic. A promoting question *How did you collect data during the COVID-19 pandemic?* would be posted to stimulate discussion.

Social Media Engagement: Resources and links such as Facebook group would be provided to encourage participants to share their thoughts, insights, or follow-up questions related to the research questions.

Additional interactions with participants will be organized if time permits, such as providing networking opportunities to facilitate connections between participants and presenters.

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420 Becoming-with rich communicative environments: Re-mediating the microphysics of power

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: ethico-onto-epistemology Flat CHAT transformative pedagogies

SHORT ABSTRACT

Foucault's (1977) account of the microphysics of power highlighted practices of enclosure; categorical grouping; and the decomposition, standardization, and re-engineering of tasks. These practices have been enacted in formal and informal pedagogies for human becoming centered on control, compliance, assessment, and procedural display. In this paper, we begin by discussing the bio-ecological model of *rich communicative environments* (RCE; Hengst, Duff, & Jones, 2019) defined along three dimensions of activity (agency, meaningful complexity, and flexible optimization oriented to diversity and inclusion). We articulate this model in relation to transformative pedagogies for becoming (e.g., Haraway, 2016; Stetsenko, 2017; Holzman, 2017), to Barad's (2007) ethico-onto-epistemological framework focused on intra-active entanglement, and to flat CHAT accounts of activity and becoming (Prior & Schaffner, 2011; Smith & Prior, 2020). We then illustrate this model in relation to two case studies, one of ungrading in an applied linguistics course for prospective teachers at a Brazilian university that aimed to implement RCE and one tracing the work of a graduate student union's bargaining team to expand rank-and-file participation (which enacted a politics well-aligned with RCE principles). Both case studies draw on ethnographic methods (document collection, recording, interviews) to analyze situated activity in these settings and their consequences on trajectories of becoming. In conclusion, we argue this framework of rich communicative environments for *becoming-with* (Haraway, 2016; Prior et al. 2023) offers a powerful set of bio-

ecological principles for assessing and (re)designing environments and invites a radical reworking of everyday politics that can enhance diverse, inclusive forms of participation.

EXTENDED SUMMARY

Foucault (1977) described a modern microphysics of power that has dominated the social organization of human becoming in schools, workplaces, and communities. That microphysics has aimed to enhance human performance by decomposing and then standardizing practices (through task analysis of behavior), establishing modular divisions of labor and people, and employing pedagogies centered on control, compliance, ranking, and procedural display (e.g., Bloome et al., 1989; McNeil, 1986; Minick, 1993; Hoskin, 1993). This microphysics has been applied to people and ecologies alike in plantation models of capitalism (Haraway & Tsing, 2019).

In this paper, we present an account of *becoming-with* (Haraway 2016; Tsing 2015; Prior et al. 2023) around a bio-ecological model of *rich communicative environments* (Hengst, Duff, & Jones, 2019; Hengst 2020) defined along three dimensions of activity (agency, meaningful complexity, and flexible optimization oriented to diversity and inclusion). We align that model with transformative pedagogies for becoming (e.g., Haraway, 2016; Stetsenko, 2017; Holzman, 2017), with Barad's (2007) ethico-onto-epistemological/agential realist framework focused on intra-active becoming and entanglement, and with flat CHAT accounts of activity and becoming (Prior & Schaffner, 2011; Smith & Prior, 2020; Ware, 2022). Barad's (2007) notion of intra-active *spacetime-mattering* suggests a new microphysics of power that aligns with constant entangled becoming in dynamically emergent worlds; that aims to enhance life through embracing diversity, possibility, and unpredictability as in Tsing's (2015) polyphonic assemblages; and that seeks what Mol (2002) has described as "worthwhile ways of living with the real."

Beginning with informal observations by Donald Hebb over eighty years ago, research has consistently shown that lab animals housed in enriched environments (e.g., social groups in spaces with varied toys and objects to traverse and manipulate) reliably display better learning abilities; stronger cognitive, sensorimotor, and perceptual capacities; and positive neuroplastic effects in diverse brain regions across the lifespan. Although enriched housing has often been operationalized just around *complexity*, the animal research also emphasized the *voluntary* nature of participation and the importance of *optimizing experiences* for individuals. Drawing on this animal literature as well as on sociocultural accounts of functional systems and functional plasticity (e.g. Vygotsky, 1997; Luria, 1979; Hutchins, 1995) and research on situated communicative practices (e.g., Agha, 2007; Goffman, 1981; Silverstein, 1985; Hanks, 1990), Hengst and colleagues (Hengst, Duff & Jones, 2019; Hengst, 2020) developed the model of *rich communicative environments* (RCEs) within human contexts and articulated its application to clinical neurology. After introducing this framework, we illustrate it through two case studies (with aims, methods, and results embedded in each).

Examining RCEs and trajectories of participation in a bargaining campaign, the first case study examines how a graduate student labor union's bargaining team structured the contract negotiations to invite participation and contributions from rank-and-file union members. Drawing from audiovisual recordings of bargaining team meetings, discourse-based interviews, and textual analysis of internal bargaining documents (e.g., meeting agendas, caucus facilitation guidelines, volunteer spreadsheets), this case analyzes how bargaining team events and practices aligned with the model of RCEs.

Focusing on the first bargaining session of the semester, when participation was considered especially

important, the presentation examines how specific mediators (e.g., blackboard texts, embodied interactions, talk) shaped trajectories of becoming-with for the graduate students, the union, the university, and society.

Inspired by the model of rich communicative environments (Hengst, Duff, & Jones, 2019; Hengst, 2020), the second case study analyses the introduction of ungrading (Stommel, 2017, 2023) in an undergraduate applied linguistics course for prospective teachers at a Brazilian public university. The investigation aims to overcome historical challenges experienced by language learners concerning linguistic performance that currently include a high prevalence of generalized anxiety disorder, attention deficit, and depression diagnoses. Drawing from lesson plans, class notes, interviews with students, and student and teacher course productions, the research focuses on how questioning the banking culture (Freire, 1968) (re)mediated by quantitative and standardized assessment of linguistic performance has afforded opportunities for agency in becoming-with language and learning. The presentation reflects on how these experiences have moved away from ideals of 'mastering' and 'conquering' language, but also the challenges of moving from micropractices of power that feed and reinforce bias and domination culture through assessment. It concludes by suggesting that ungrading gestures toward a "defiance that heals, make a new life and new growth possible" (hooks, 2015, p. 29) in language learning environments.

In conclusion, we argue that this model of rich communicative environments for becoming-with offers a powerful set of bio-ecological principles for assessing and (re)designing environments that invite a radical reworking of the everyday politics of practices to enhance diverse, inclusive forms of participation.

We will use a common slide presentation (with accessible versions online) to present the paper and invite audience members in the last 10 minutes to not only ask questions about the concepts and cases, but also explore possible applications to their own domains of research/practice.

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421 ONLINE - The sociocultural approach to L2L: analysis of two cases with preschool teachers in Italy and Mexico

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Meaningful education

Keywords: Learning to Learn Teachers Preschool

SHORT ABSTRACT

Learning to Learn (L2L) is a fundamental competence for lifelong learning and it's a crucial concept in educational policies internationally. Several L2L components have been included in numerous school curricula on a global scale, from preschool to tertiary education. The most widespread lines of research on L2L include studies focused on the investigation of cognitive, affective, and metacognitive aspects. We argue about the need to analyze L2L acquisition from a socio-cultural perspective, which represents an emerging research field. To do so, we start from Vygotsky's discussion about the role of "formal discipline" that school subjects have in the formation of students' competencies and skills. According to this view, teachers' didactic choices and activities have the potential *to generate* L2L, which can be considered as a culturally shaped competence. Results of an in-depth socio-cultural discursive analysis of interviews conducted with preschool teachers in Mexico and Italy are discussed, as part of an international qualitative study. The discursive analysis, of an interpretative and descriptive type, consisted in the identification of segments that account for the function of "formal discipline" and corresponding generation of skills and knowledge related to L2L aspects. Key excerpts from two significant cases, one Mexican and one Italian teacher, are presented to exemplify cultural differences. The results are useful for advancing the construction of a socio-cultural research framework on L2L and may inform training processes and educational strategies for preschool teachers interested in this competence.

EXTENDED SUMMARY

Learning to Learn (L2L) is a fundamental competence for lifelong learning and is a crucial concept in educational policies at international level (UNESCO, 2017; EU, 2018; OECD, 2009). Different components that make up this competence have been included in numerous school curricula on a global scale, from preschool to tertiary education (Stringher et al, 2019). The most widespread lines of research on L2L include studies focused mainly on the investigation of cognitive, affective, and metacognitive aspects (Deakin Crick, Stringher & Ren, 2014).

In this paper we argue about the need to analyze the acquisition of L2L from a socio-cultural approach, which represents an emerging research field (Stringher, 2021; Brito et al, 2020). We argue that the nuances that L2L acquires in relation to different cultures has been less considered within

educational research, usually ascribed to the “western” tradition. The socio-cultural perspective implies considering L2L as implicitly present in everyday school activities, which involve aspects that can be traced back to this competence (Ajello & Torti, 2019). From this point of view, teachers' didactic choices and its respective activities have the power to *generate* the L2L competence (cfr. Vygotsky, 1986). Following the Vygotskian argument regarding the relationship between instruction and development of higher order thinking, we derive our approach from the role of “formal discipline” that school subjects have in the formation of students' competencies and discuss L2L from a cultural perspective.

The teaching of school subjects, exemplified by Vygotsky with the case of Latin and Greek, stands out for its value in generating thinking and learning skills that will be useful in dealing with situations inside and outside the school context. In this line of thought, we hypothesize that teachers may choose content and skills for students based on the idea of what is essential to trigger other skills and competences, i.e., not only to transmit curricular content. From this point of view, teaching L2L is implicitly present in the choice of didactic proposals – and associated beliefs – that teachers carry out in daily school activities. In turn, such didactic choices are influenced by and account for the general meaning of education according to the culture of belonging (Bruner, 1996; Rogoff, 1990). In this sense, L2L can be considered as culturally shaped competence (cf. Rogoff, 2003; Sfard & Prusak, 2005).

The socio-cultural approach of L2L implies considering the different ways of conceiving education and the beliefs that are articulated around the teaching and learning process according to specific cultural contexts (Bruner, 1990). From this perspective, every educational institution tends to develop intellectual capacities that are considered relevant to solve certain problems and create outcomes that are consequently valued in their own culture (Gardner, 1983).

The aim of this paper is to present the results of an in-depth sociocultural discursive analysis of interviews (Torti et al, 2021) conducted with preschool teachers in Mexico and Italy, as part of an international qualitative study (Stringher, 2021). The discursive analysis, of an interpretative and descriptive type (Wells, 1999; Claxton & Wells, 2002), consisted in the identification of segments that account for the function of “formal discipline” (Vygotsky, 1986), inherent to the educational choices, activities and beliefs of the participating teachers, and corresponding generation of skills and knowledge related to L2L (i.e., *generativity*). Key excerpts from two significant cases, one Mexican and one Italian teacher, both teaching in preschools, are presented to exemplify cultural differences that mediate the development of L2L in preschool educational settings (Cárdenas et al, 2021). Among these differences, the following stand out: (1) In the Italian case, emphasis is placed on children's enthusiasm, curiosity and stimulation as an access point for the development of useful skills to continue learning. For the Italian teacher, involving children through enthusiasm and curiosity has the potential to “generate” thinking skills and the ability to formulate questions. (2) In the Mexican case, order and rules are identified as the main aspects for involving children in school activities. For this teacher, an orderly classroom shapes children's willingness to learn, where “order” contributes to emotional regulation, motivation and awareness of one's own actions. We discuss these two cases in light of their cultural milieu.

These results are useful for advancing the construction of a research framework for analyzing the cultural connotations that mediate L2L acquisition, highlighting the culturally valued aspects by educational actors. The results contribute to approach L2L from a sociocultural perspective and have

the potential to inform culturally situated teacher training processes and educational strategies for preschool teachers.

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423 Children's Mathematical Graphics: Making mathematical connections with their world

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Matheamtical graphics Connections Symbolism

SHORT ABSTRACT

Over the past 25 years, a small number of research studies (Carruthers & Worthington, 2006, 2008, 2011; van Oers, 2000, 2001, 2010, 2012) highlight the importance of children's mathematical graphics for children's written expression of mathematical knowledge. Previously, these were seen as 'scribbles' and critiqued by adults as a developmental precursor to realistic drawings. Yet children's mathematical graphics are a symbolic representation of their connections and meanings. This research highlights the socio-cultural influences of children's mathematical graphics (Vygotsky, 1978, 1987) and how these help children access, process and communicate knowledge. This study uses cultural-historical research methodology (Hedegaard, 2008) and children's mathematical graphics, often in conjunction with an explanation, as data sources for this paper. The findings suggest that children express mathematical concepts of their world within these graphics. These concepts include spatial awareness, positioning, patterning and symmetry and other mathematical concepts. However, these graphics are only recognised as being mathematical, when children include a verbal mathematical explanation in conjunction with their graphic. Mathematical knowledge is mostly discounted when communicated through graphics alone, and when no verbal account of their mathematical concepts is included. Children often communicate everyday conceptual knowledge when describing their graphic, although their graphic still conveys mathematical understandings. In this research study, these are known as Children's Implicit Mathematical Graphics. They highlight children's mathematical meanings through graphics, alongside everyday meanings through verbal expression. Children's social situatedness of development, a crucial aspect of this research, is helpful for children to link everyday and mathematical knowledge (Hedegaard, 2008; Vygotsky, 1987).

EXTENDED SUMMARY

Background

This research focuses on the mathematical aspects of children's graphics, and how these are influenced by, and help children make connections and meanings to their socio-cultural and physical environments. This research was completed in a preschool with 4–5-year-old children. Children's implicit mathematical graphics show the graphic as being mathematical, but the verbal explanation is of children's everyday conceptual knowledge. This paper illustrates how children's graphics can highlight their mathematical thinking, although their verbal expression may only offer an everyday conceptual explanation. Notably, these mathematical graphics are linked to their personal socio-

cultural and physical environments and show both children's everyday and mathematical conceptual knowledge, through visual and verbal symbolic expression (Bruner & Kenney, 1965).

Aims

The aim of my presentation is to highlight the importance of 'seeing' children's mathematical conceptual knowledge through their graphics, and how this helps children to make connections to their socio-cultural and physical environments. These graphics, seen as an important language for children, are symbolic and signify mathematical meanings. They do not represent a realistic account of their socio-cultural environments, but their interpretation of salient moments and experiences within their everyday lives.

Methods

Cultural-historical methodology (Hedegaard, 2008) is used for researching with young children within their socio-cultural contexts, useful because it explores not only what children know, but how they come to know it (Fleer & van Oers, 2018), and as well the dialectic-interactive approach (Hedegaard (2012). This study collected evidence of how 4-5 year old children represent their visual mathematical understandings of their everyday experiences, over a period of 12 weeks. Data was collected in multiple ways which include i) children's mathematical graphics often used in conjunction with explanations or conversations about their graphics, mathematical or otherwise, ii) the researcher's observational notes, iii) unstructured interviews with the early childhood teacher, iv) a reflective research journal. Hedegaard (2008) three levels (common sense, situated practice, and thematic) of analysis is used to interpret the data.

Results

This paper and presentation will discuss children's implicit mathematical graphics. This highlights how children use complex imagery and vocabularies, symbols and signs, and metaphors to highlight their mathematical thinking. This is in reference to children's everyday experiences and mathematical conceptual knowledge expressed through their graphic, followed by a verbal explanation of their everyday conceptual explanation, if offered (Vygotsky, 1978). The results of this analysis show a synthesis of children's mathematical thinking expressed in a wide range of symbolic ways, and includes i) mathematical graphics to highlight mathematical understandings of their personal connections to their socio-cultural worlds, and ii) a verbal account or explanation highlighting children's everyday conceptual knowledge, to also explain this connection and children's personal meanings.

Conclusion

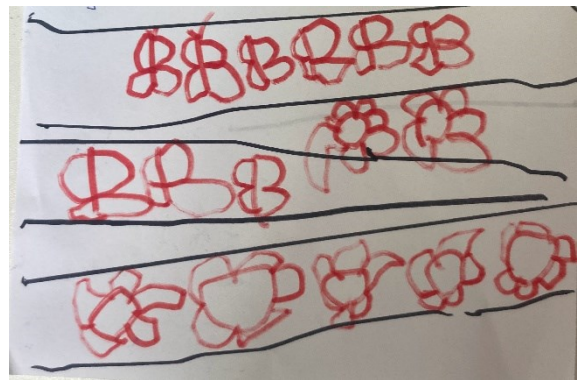
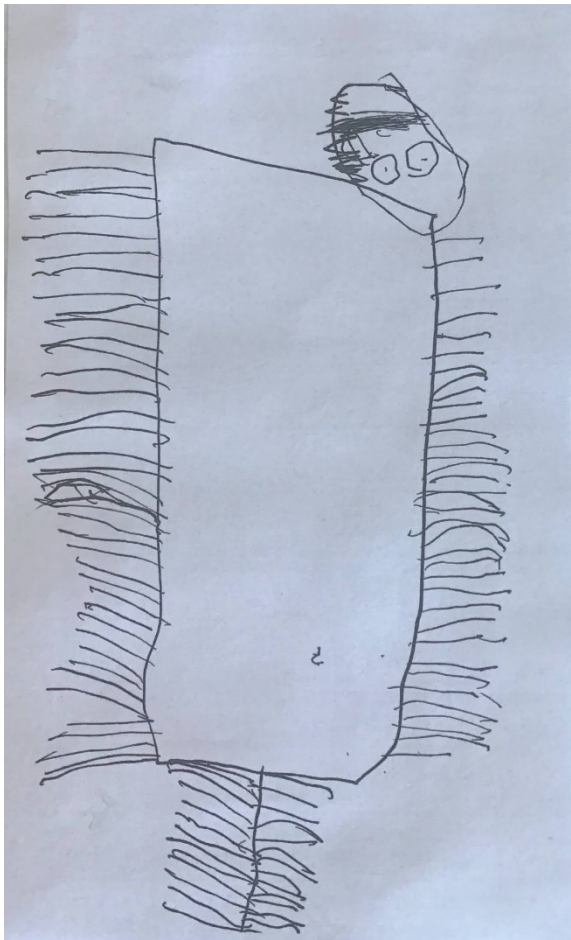
My conclusion will state that it is important to acknowledge and value children's implicit mathematical graphics as a valid account of their mathematical knowledge, and a step towards understanding the written notation of mathematics for children when they start school. This first step in understanding how children draw mathematical meanings through their graphics influenced by their personal worlds, and at times adding a verbal account of their everyday experiences to further explain their graphic, is an important part of children's mathematical journeys, and their earliest written mathematical notation.

How interaction with the participants is planned

Through a descriptive and verbal account, as well as a PPT presentation of my research, analysis, and findings for children's implicit mathematical graphics. The PPT will include examples of children's implicit mathematical graphics, with both a graphical image, and as well a verbal explanation, if

offered, of children's everyday concepts. This PPT presentation will highlight how using the Cultural-Historical theory (Vygotsky (1978, 1987), and the Cultural-Historical methodology (Hedegaard, 2008) including the Dialectic-interactive approach (Hedegaard, 2012) helped analyse my data for this research study, and to understand the link between children's everyday and mathematical conceptual knowledge.

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428 Instant futures: the work of imagination in times of ecological crisis

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Imagining future worlds

Keywords: cycle of imagination Anthropocene science-fiction

SHORT ABSTRACT

For the last six years, we have been teaching an undergraduate course in environmental psychology, using an original approach based on science fiction creative writing, or more precisely, on the "protokools" invented by the Zanzibar group of science fiction writers (www.zanzibar.zone). This pedagogical approach produces "instant imaginations of the future", as it invites students to write short narratives with the support of creative constraints, but within a short elaboration time. The approach is deeply inspired by Vygotsky's conceptual approach to imagination (Vygotskij, 2022), which emphasises imagination as realistic, with multiple connections to the subjects' real experience, and imagination as a cycle that makes the subjects' intimate experience visible in the social world and circulates these social productions - and back. Imagination starts from experience and returns to it, after a phase of crystallisation and social exchange.

This paper will examine this attempt from two complementary angles: on the one hand, from a pedagogical point of view: How can science fiction help students reflect on their own relationship with nature and the ecological crisis? On the other hand, from a scientific point of view: what can we learn from the utopian and dystopian worlds constructed by our students? We will analyse these "instant futures", i.e. the narrative productions of the students in these playful exercises, and identify their main components, or threads. The paper will present our conceptual analysis of these narratives and give examples of their content.

EXTENDED SUMMARY

For the last six years, we have been teaching an undergraduate course in environmental psychology using an original approach based on science fiction creative writing, or more precisely on the "Protokools" invented by the Zanzibar group of science fiction writers (www.zanzibar.zone). This pedagogical approach produces "instant imaginations of the future", as it invites students to write short narratives with the support of creative constraints, but within a short elaboration time. The approach is deeply inspired by Vygotsky's conceptual approach to imagination, which emphasises imagination as realistic, with multiple connections to subjects' real experience, and imagination as a cycle that makes subjects' intimate experience visible in the social world and circulates these social productions - and back. Imagination starts from experience and returns to it after a phase of crystallisation and social exchange.

This paper will examine this attempt from two complementary angles: on the one hand, from a pedagogical point of view: How can science fiction help students to reflect on their own relationship with nature and the ecological crisis? On the other hand, from a scientific point of view: what can we

learn from the utopian and dystopian worlds constructed by our students, especially regarding the work of imagination?

To answer these questions, we analyse these "instant futures", i.e. the narrative productions of the students in these playful exercises, and identify their main components or threads. The paper will therefore present our conceptual analysis of these narratives and give examples of their content. Our analysis is based on a corpus of 2 x 75 stories (= 150 stories) written by students and collected on a voluntary basis. The analysis of the stories (Decortis, 2013; Stibbe, 2018) is complemented by the analysis of the comments that the students make on these stories in their final report.

Scientifically, this protocol (originally designed as a tool to help non-specialists write stories about the future) turns out to be an interesting research tool. It allows the comparison of two texts, two desirable and undesirable versions of the same place, for the same people. This comparison makes it possible to highlight elements of the students' relationship with nature (in particular the importance of this relationship and its predominantly anthropocentric character). It also allows us to study the work of the imagination in these particular conditions. Imagining the future is difficult. It does not work in the same way for the undesirable future as it does for the desirable future. The undesirable future is based on our fears. Here it is characterised by the loss of colour (grey/green), the death of non-humans, trees or animals, the loss of rich and embodied human relationships, the commodification, pollution and destruction of the places we love, especially those associated with childhood. Urbanisation and climate change also feed these nightmares. Plants disappear massively in these versions. The desired future is based on our hopes. Some of the projections are very conservative, promoting the continuity of what is, or a romantic return to what was. Others extend the present, they are characterised by harmonious relationships with nature and within human communities: organic farming, local consumption, self-sufficiency in communal gardens, ecological and non-market communities are present in the majority of the stories. Very few stories propose an uncontrolled explosion of biodiversity. In most cases, nature remains controlled and domesticated. However, we note the emergence of a mixed vision that attempts to overcome the dominant anthropocentric model of our modern societies and promotes an ideology of coexistence. This paper presents our conceptual analysis of the work of imagination in these 'instant futures'. We identify three components of these stories, interwoven threads that students compose to convey their visions of desirable or undesirable futures. These threads are their personal experiences, reflected in elements of their biographies; cultural productions; and the news, good or, more often, bad and frightening news from the world. These threads have sub-components, that we will illustrate in our paper.

From a pedagogical point of view, the creative writing exercise is complemented by a longer phase of sharing and discussion. Selected narratives are read and thus listened to in public, enabling everyone to hear their own narrative or the narratives of others, thus offering a potential "social contact with oneself". The exercise thus completes a complete imaginative cycle in the Vygotskian sense: accumulated personal experience is mobilised, reworked, recombined and externalised in a narrative that becomes a cultural production available to all and thus contributes to nourishing the reflections and feelings of others.

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434 Transforming teachers' relationship to knowledge through Fleer's Conceptual PlayWorld

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Drama Tools preschool

SHORT ABSTRACT

In the Swiss kindergarten, learning activities are essentially imposed by adults, originating in primary school and poorly adapted to children's needs. A number of studies have highlighted the importance of taking account of activities initiated by children (Siraj-Blatchford et al., 2002) or of including children's perspectives in activities initiated by adults (Pramling et al., 2019). This is difficult for teachers, since these activities cannot be fully mastered a priori. To do this, teachers need to seize or provoke learning opportunities based on these activities. However, they are not trained to understand the learning content that would enable them to (re)discover the knowledge in the children's actions. They are trained to anticipate, initiate and direct activities.

To answer these questions, Fleer's work (2019, 2021) on Conceptual PlayWorld (FCPW) opens up an interesting avenue. The identification of dramatic situations and the knowledge required to resolve them is a lever for building another form of pedagogical content knowledge, historical and cultural, linked to the identification of the meaning of this knowledge (what the appropriation of its use enables in terms of increasing one's ability to act, communicate or think) (Clerc-Georgy, 2021).

In this presentation, we will present analyses of collective discussions resulting from FCPW training, in order to identify the development of this knowledge. The results will consist in the identification of : 1) what FCPW work promotes in understanding the meaning of scientific concepts, 2) the nature of the knowledge needed to seize or provoke learning opportunities from child-initiated activities.

EXTENDED SUMMARY

In Switzerland, kindergarten attendance became compulsory from 4, subject to disciplinary objectives set out in a curriculum. At the same time, teacher training, which is identical for all pre-school and primary school, has been geared towards contributions to school disciplines. Teachers are prepared to initiate and guide activities whose objectives are set in advance. This corresponds to a specific knowledge of the content to be taught, combining what Shulman (1998) calls pedagogical knowledge of the content. As a result, teaching in the kindergarten implements pedagogical practices derived from elementary school and poorly adapted to children's needs, evacuating play (Clerc-Georgy & Duval 2020). Learning activities are essentially imposed by adults. This is problematic, as we observe a significant increase in the number of children reported as having difficulties from the very first days of school (Dutrevis et al., 2022).

Several studies have highlighted the importance of balancing the time devoted to child-initiated and adult-initiated activities in preschool (Sylvia and Nabucco, 1996). An equivalent ratio between the two would be a sign of quality (Siraj-Blatchford et al., 2002), and would correspond to practice that is

better adapted to young children (Wall et al., 2015). However, it is difficult for teachers to work from child-initiated activities or to take account of children's perspectives in adult-initiated activities (Pramling et al., 2019). These activities cannot be planned in advance.

To meet the requirements of both the curriculum and the age of the pupils, teaching should be based on the emerging curriculum (Fleer, 2010). Teachers should be able to seize or provoke learning opportunities linked to the curriculum, based on activities that children initiate or based on their interests and resources. However, their knowledge of the content to be taught, and their knowledge of early childhood learning, is not specific. It does not enable them to recognise them when they emerge in the children's language and actions.

To answer these questions, a different form of knowledge transposition becomes necessary. This also implies a new, historical-cultural, form of pedagogical content knowledge. In other words, a kind of knowledge linked to an understanding of how this knowledge turns it into a tool for thought, potentially transforming human capacities (Vygotski, 1934/1985). This form of knowledge of concepts (tools) aims at the ability to spot knowledge in bud or under construction to enable young students to construct the meaning of this knowledge to be learned, the interest of what their use enables, the necessary motives to invest themselves in conscious and disciplinary learning (Hedegaard & Edwards, 2023).

With Fleer (2019), Van Oers (1996) or Marinova (2015), we believe that the imaginary situation, in sufficiently complex scenarios, favors the construction of motives to consciously and voluntarily appropriate new concepts. For Marinova (2015), it's a question of "learning to play" rather than "playing to learn". Fleer's (2019) work on Conceptual PlayWorld has shown how dramatic situations, proposed in imaginary play inscribed in a story, become levers for the development of motives to learn scientific concepts, not least because such learning is necessary for the continuation of the play. This new learning, the use of disciplinary concepts to solve problems encountered by the characters in the imaginary play, makes visible their dimension as tools of thought - for example, it's no longer a question of drawing a map, but of using it to find an imprisoned character who is calling for help. We use *Fleer's Conceptual PlayWords* (FCPW) in teacher training, because we hypothesize that developing teachers' ability to link dramatic events with scientific concepts (considered here as tools for thinking) is a lever for building a pedagogical knowledge of the subject suitable for teaching in early grades. A knowledge that enables the identification of knowledge in children's play, and a relationship to knowledge oriented towards understanding the meaning of this knowledge.

In this paper, we will analyze training sessions on FCPW (Fleer, 2019, 2021), in which teachers construct dramatic situations, inserted into a story, whose resolution requires conceptual learning on the part of the children. This learning is the prerequisite for the continuation of imaginary play. The collective exchanges resulting from these training sessions will be recorded and transcribed. Analyses of these exchanges will be aimed specifically at identifying their ability to grasp the meaning of the knowledge in play, i.e. what appropriating the use of knowledge enables in terms of increasing their ability to act, communicate or think (Clerc-Georgy, 2021).

The results presented will consist, on the one hand, in identifying how work on FCPW modifies teachers' relationship to knowledge in the sense of a new understanding of the construction of scientific concepts, and on the other hand, in proposing avenues for training from the point of view of the nature of the knowledge required to seize or provoke conceptual learning opportunities from imaginary play or other activities initiated by children.

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435 Techno-creative activities in STEM Education

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: STEM CHAT education

SHORT ABSTRACT

The symposium integrates insights from four research papers, each shedding light on different facets of STEM education while emphasizing techno-creative approaches. Drawing upon Cultural-Historical Activity Theory (CHAT), these studies collectively address challenges, micro-tensions, and the holistic nature of STEM learning, from early childhood to middle school. The first paper delves into the antinomies inherent in science education, exploring them through the lens of CHAT. It examines the challenges within STEM research, highlighting the need for nuanced perspectives to address complex educational dynamics. Transitioning to the middle school level, the second paper takes a holistic view of STEM learning, particularly focusing on 3D-design activities. It explores the mathematical connections and micro-tensions that emerge among students, emphasizing the importance of considering multiple dimensions within STEM education. In the early years, the third paper explores the development of scientific method skills through engaging mediums like cartoons. It emphasizes the significance of fostering science process skills from a young age, promoting openness to inquiry and exploration. Finally, the fourth paper delves into early childhood science education, leveraging robotics to enhance creativity and sustainability. It integrates STEAM principles, emphasizing hands-on learning experiences that encourage openness to innovation and environmental stewardship. Collectively, these studies underscore the multifaceted nature of STEM education and the importance of techno-creative approaches in fostering holistic learning experiences. They advocate for the integration of diverse perspectives, from theoretical frameworks like CHAT to practical applications like robotics, to cultivate a new generation of innovative thinkers and problem solvers.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

In this work, we provide a critical reflection on STEM education through the lens of cultural-historical activity theory. We delve into the roots and branches of STEM education, emphasizing the importance of understanding the cultural and historical context in which STEM conceptualization took place. It is pointed out the need for a more activist approach in STEM education, in which students are encouraged to enact change and engage in pragmatic and purposive actions within schools. Different teaching approaches to topics like global warming are examined, highlighting the evolving nature of scientific controversies and the role of science education in preparing informed citizens for a technically driven society. For that, we also touch on historical perspectives, such as the Physical Science Study Committee's emphasis on 'doing physics' rather than 'learning about' physics, and the potential pitfalls of repeating past mistakes in STEM initiatives. It critiques technological utopianism in educational programs like One Laptop per Child, cautioning against overlooking the actual impact and effectiveness of such initiatives. Overall, the work underscores the complexities and contradictions within STEM education, urging a critical examination of teaching objectives, approaches, and the broader societal implications of STEM education.

keywords: Critical reflection, STEM education, historical analysis

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

Education has long been intertwined with political, economic, and scientific developments. Throughout the years, educational policies have often been constructed based on frameworks that, in many instances, appear to resemble fads. This is evident in the rapidity with which certain trends become the forefront of educational innovation movements. These frameworks often prove inadequate in addressing the complexities of the educational process and tend to offer solutions to only a fraction of the issues encountered in schools. This phenomenon seems to recur in education, giving rise to new trends shaped by and within the economic and educational policies of their respective eras.

In the context of Science, Technology, Engineering, and Mathematics (STEM) education has been achieving growing significance. Given this backdrop, it is pertinent to question whether STEM education is merely a passing trend or if it possesses the potential to address the current challenges faced in schools.

Aims

The main objective of this work is to critically reflect on STEM education, particularly from the perspective of cultural-historical activity theory. We aim to highlight the historical and contextual nature of STEM education, emphasizing that it is a movement still under construction. We seek to examine the contradictions and complexities within STEM education, including its conceptualization, implementation, and potential impact on students and society. Additionally, we aim to advocate for a more critical and activist approach to STEM education, urging educators and researchers to consider the connections and change possibilities between local initiatives and the broader schooling process. Overall, the main objective is to provoke critical reflection and examination of the current state of STEM education and its implications for teaching and learning.

Methods

This work relies on theoretical analysis, literature review, and critical analysis to explore the roots and branches of STEM education. The use of cultural-historical activity theory as a guiding framework implies that the analysis is rooted in understanding human development within specific cultural and historical contexts and drawing connections between STEM education and broader societal issues.

Analysis

Critiques of STEM Education: we present the criticisms of STEM education from various scholars, highlighting concerns about its potential limitations, lack of commitment to socio-scientific issues, and the creation of new markets under the STEM education slogan. We also address scepticism regarding the effectiveness of STEM initiatives, particularly concerning engineering and technological aspects.

Historical and Developmental Perspectives: we delve into the historicity and development of STEM education, emphasizing the importance of understanding human activity systems within their historical context, showing how STEM education carries many contradictions of the neoliberal society and relies on what we call technological utopianism.

Activist Approach to STEM Education: we advocate for a more activist approach to STEM education, where students are encouraged to engage in pragmatic and purposive actions within schools, emphasizing the need for critical examination of teaching objectives, approaches, and the broader societal implications of STEM education.

Conclusion

The analyses presented in the text focus on critiquing existing perspectives on STEM education, emphasizing historical and developmental considerations, and advocating for a more critical and activist approach to STEM education.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

This contribution stems from our analysis of micro-tensions during a prototyping engineering design activity when two Grade 6 students attempt to invent a prosthetic device ‘reviving’ a broken pencil in a school makerspace. When reflecting on students’ work with the *TinkerCad* to 3D-design of what they called *Frankenstein Pencil* over a 2-months period, we found multiple instances of students sharing their mathematical thinking concerning the challenges of building an ‘appropriate’ combination of shapes using ‘correct’ measurements. The lens of the Cultural-Historical Activity Theory (CHAT) is used to zoom in and out on the complexity of students’ learning within an entangled pedagogy we represent as a system of various concurrent activities which are treated as a whole. Through multiple micro-tensions we identify what seems to emerge as not only potential sources of struggle but also potential sources of authentic learning opportunities and the particular role that shapes and measurement are likely to play in students’ actions, conversations, and reflections. The CHAT framework helped us to navigate through this complexity which reflects a need to go beyond disciplinary boundaries towards a more holistic view of STEM education.

Keywords: STEM Education; Holistic Perspective; Micro-Tensions; Mathematics-Tehcnology Connections; CHAT

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

In a context of the increasing role STEM-related activities assume to play in New Brunswick, Canada, K-12 school system, makerspaces have emerged as potentially valuable to nurture students' interest in engineering design using a variety of technologies, among them a 3D computer design and 3D-printing (Freiman, 2020). Often, results of such activities are reported in terms of successes students experience while observing multiple moments when students face challenges of all kinds leading to questions like: How do students identify what seems to be a dead end in their work? How do they manage constraints? What mathematical thinking emerges as they try to resolve problems? And what happens when students do not actually achieve their intended goals and leave their work unfinished as they make the abrupt realization that their class has ended?

Aims

In a context of a design thinking class at one New Brunswick middle-school (Grade 6), we investigate two students' collaborative prototyping through a design-thinking process when they attempt an invention of a prosthetic device to reconnect two parts of a broken pencil. In particular, we look at why did they do what they did? At what points were there moments that revealed some struggles or tensions in the design process? And how have students dealt with these tensions? Our particular focus is on mathematics-technology connections that emerge in a design thinking process, and which may become enablers of students' creative work or sources of challenges or even frustrations when things do not occur in a way they have planned.

Methods

Using the lens of the CHAT perspective (Leontiev, 1981; Engeström, 1999), we build our inquiry on the ideas of transformational change and the role of tensions explored by the CHAT literature to grasp the potential of technology (*TinkerCAD*) as a mediation tool across an activity system. Situating the use of tools in this context deepens our understanding of how students' expressions of skill, personality, and consciousness can influence the evolution of practical social activities (Sannino et al., 2009). Over a 2-months period, a Group of Grade 6 students were initiated in a design thinking module to prototype some inventive product. Our data sources are in-class observations and video recordings of students' work, a series of small-group interviews with students who had their ethics forms signed, and examples of artefacts they built. In particular, our focus is on a team of two students who were attempting to invent what they called *Frankenstein Pencil* to give a 'second life' to broken pencils. We also produced our own schematic representation of the complexity of students' activity through a system of entangled activities (Fawns, 2022). Our analysis of mathematical connections is guided by Martinovic et al.'s (2012) conceptualization of relationships between components during the mathematics learning activity as dynamic, multimodal, collaborative, and interactive.

Results

While experiencing multiple micro-tensions during their complex design work, students seemed to be mainly concerned about the accuracy of their measurements and combination of shapes to reflect their idea of the device that they attempted to prototype. However, the students' enterprise was more complex than they could anticipate requiring a higher level of numeracy that was necessary for this kind of task and even teacher's hints and help throughout their project. Even if their work remained unfinished, both students and their teacher argued that their efforts should be recognized

as valuable learning experience helping them to ‘actually’ build a prototype even if the product remained entirely in the virtual space.

Conclusion

In our view, the data we will present reveal richness of students’ experience even if they have left their project at its virtual modality. A wealth of knowledge about what the real process of invention comprises and how difficult it is to move through its different stages demonstrates the result of students’ persevering work on resolving issues that create tensions and reveal a complex nature of the mathematics-technology connections in the context of design thinking. Moreover, we wonder whether this experience could be a precursor of further accomplishments within similar or larger activity systems. By leaving this as an open question, we hope that our presentation will provide at least some insight for continuing investigations of the phenomenon.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

This chapter describes a research study based on the theoretical framework of Cultural Historical Activity Theory (CHAT). It seeks to investigate the use of cartoons as a tool to develop scientific thinking. Emphasis is put on developing conceptual tools to understand dialogue and networks of interacting activity systems and introducing teaching scientific concepts by using cartoons. Within this frame, a Science Curriculum was developed. At the beginning, a popular cartoon was used in order to teach floating and sinking. Then, elements from History of Science were incorporated in a narrative about light and colours. Finally, the narrative was turned to an animation in the program scratch. The analysis of the results presented in this chapter focuses on the development of pupils’ scientific thinking and science process skills as well as the ways in which they become engaged with the image of scientists. All in all, learning in a CHAT frame helps pupils organize their scientific work and progress. They develop communication and life skills which enable them to achieve meaningful learning of the scientific content.

Keywords: Science Education, Cartoons, Science Process Skills

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background and Aims

Science Education in the early years, has been considered a significant learning domain and has been connected with scientific inquiry and the development of skills and attitudes. It is directly connected with the exploration of authentic learning environments, as well as working with the scientific method, using science process skills such as observation, classification, etc. in an effort to understand the world around us. Many researchers believe that Science Education must start in the early years as at this age, learners construct structures for understanding scientific concepts and moreover, develop a lifelong interest in science (Vosniadou 2019). In relation with the processes of approaching the properties of physical objects and materials, the phenomena and the scientific concepts, four frameworks of learning and development in the early years summarize the different trends in Science Education: the empiricist, the Piagetian, the socio-cognitive and the socio-cultural or cultural-historical approach (Ravanis 2021). Science process skills facilitate Science Education in the early years as they encourage active learning, appropriate to many science disciplines and reflect the way that scientists work (NARST 1990). The use of cartoons in the early years’ education is connected with everyday situations which make pupils lacking in confidence more likely to participate in science

activities. Moreover, it is an easy way to visualize and explain concepts and create mental representations of concepts and deal with difficult cognitive processes.

This paper introduces a research study that developed an early years' science curriculum using cartoons to teach floating and sinking, as well as light properties. Aligned with the Cultural-Historical Activity Theory (CHAT) perspective, the study aimed to design and analyse Science Education activities, emphasizing interactions within activity systems. The use of cartoons served as a mediating tool, fostering participation in science activities and simplifying the visualization and explanation of complex concepts, particularly for students lacking confidence. The aims included providing pupils with opportunities to acquire science process skills and connecting knowledge with everyday life.

Methods

The methodology was based on the analysis of Activity Systems by the view of Engeström (2005) and the cultural-historical approach in the early years development by Marilyn Fleer and Avis Ridgeway (2014). Within this frame, an early years' science curriculum using cartoons was developed. At the beginning, a popular cartoon was used in order to teach floating and sinking. Then, elements from History of Science were incorporated in a narrative about light and colours. Finally, the narrative was turned to an animation in the program scratch. The didactic strategies that were used in both parts of the science curriculum followed the methodological framework of CHAT (group work, use of instrumental and conceptual tools in object-oriented classroom activities, interactions between subjects, contradictions). The Science Curriculum was implemented in four kindergarten classrooms of 25 pupils each, 5 and 6 years old. The duration of the implementation was 10 weeks, in which 20 lessons were conducted by the educational researcher lasting approximately 30 minutes. In any case, the participation of the class teacher was optional.

Results

Research data included observations, field notes, video recordings, interviews and classroom materials and were analysed in the Nvivo9 software. During the implementation of the curriculum, science process skills were present at almost every moment of action. The cartoon hero was present in all the activities, leading the pupils' work on the science process skills. Pupils communicated to share their observations or predictions, made hypotheses and tried to predict before the experiments and drew conclusions. Pupils organized experiments, made predictions and verified them at the end. Communication was the most prevalent and was combined with almost every other skill. Pupils communicated to share their observations or predictions and tried to make themselves understood in an effective way. Furthermore, dealing with scientific concepts with the aid of cartoon characters and role-playing involved forms of communication contributed to better understanding of science, connecting with prior knowledge and building a strong interactive network in order to achieve meaningful learning of the scientific content. Pupils described scientific concepts providing examples of their logical thinking and connected them with everyday life situations. This was a result of both group work and whole classroom discussion, in which knowledge was constructed in relation to what pupils already know with the shared classroom experience.

Conclusions

The study focused on designing and analysing Science Education activities within the CHAT framework, emphasizing the interactions in activity systems during teaching. The qualitative analysis of results demonstrated the development of various science process skills, with strong correlations observed among certain skills. The incorporation of cartoons as a mediating tool effectively facilitated

early-grade pupils in gaining experience with scientific concepts like properties of light, shadows, and colours. The curriculum not only provided opportunities for developing science process skills but also established a meaningful connection between knowledge and everyday life, fostering the development of metacognitive skills.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

The present study focuses on the creative approach of Science-Technology-Engineering-Arts-Mathematics (STEAM Education) by preschool students in the context of their participation in innovative educational projects. Based on the Activity Theory and the belief that learning is the result of interaction, the specific concern of this project is the expansion of the learning environment outside the classroom. In this context, is applied a formal, informal and non-formal type of education, in which the natural, social and cultural environment is utilized as a primary source of knowledge. Additionally, the main purpose of this study is to investigate the existence of a positive correlation between the enrichment of the learning environment in the classroom with supporting material, with the degree of the active involvement of children in organized and emerging STEAM activities and the effortless approach of the sustainable education. The project stimulates the creativity, the curiosity and critical thinking as well as communication skills and collaboration of the children through play and exploration. During the design and the implementation phase of the educational intervention, action research and field research are applied, while the socio-cultural approach to the teaching of Science, New Technologies and Educational Robotics are mobilized as methodological tools. The research framework is completed with the process of evaluating and disseminating the learning outcomes of the projects by students, teachers and the wider community.

Keywords: STEAM education; Robotics; Sustainability; Openness; Early childhood

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Background

In recent years, there has been an increasing focus on the interest of Science, Technology, Engineering, Arts, Mathematics and Robotics in early childhood research. This study focuses on the creative approach of Science Education by preschool students in the context of their participation in the applied Erasmus+ Project, CEYS: Creativity in Early Years Science Education.

Aims

The project aims to promote the use of creative approaches in early years science teaching and brings together five distinguished partners from four countries across Europe and many teachers who are contacted by others in order to interact and work together in developing a bilateral pedagogical cooperation.

The project also specifies that inquiry-based and creative approaches to learning and teaching have some features in common. These pedagogical synergies are identified as including: play and exploration; motivation and affect; dialogue and collaboration; questioning and curiosity; problem-solving and agency; reflection and reasoning; teacher scaffolding and involvement; assessment for learning.

Methods

During the planning and implementation phases, action research and field research are applied. This interdisciplinary approach is based on the interaction of STEAM education and educational robotics

with the national curriculums, focusing on the sustainable development. The dominant concern and the main research topic of this study is to investigate whether the socio-cultural approach of STEAM education, the expansion of the learning environment outside the classroom and educational robotics facilitate the creativity in science education through the empirical acquisition of knowledge, reinforce the adoption of positive attitudes towards science and approach all the learning areas of the national curriculums related to early years education, emphasizing on the sustainable development goals.

According to the notion of development as a dialectical movement and interdependency between the individual mind and the surrounding world, the theoretical and methodological framework of this research is based on the principal element of Cultural Historical Activity Theory (CHAT) and the belief that learning is the result of interaction.

In the developmental and experiential phase is applied a formal, informal and non-formal type of education, in which the natural, social and cultural environment is utilized as a primary source of knowledge. Parents and external stakeholders were involved in the collaborative action planning of the project and participated actively in indoor and outdoor STEAM activities. In this way, the gap between the kindergarten and the extended community is bridged, supporting students to approach the sustainable education's goals, to develop all the learning areas of the curriculum related to early childhood and to cultivate 21st century skills through the exploitation of science and innovation. The process of the assessment includes qualitative and quantitative collection data methods, such as participatory and non participatory observation, semi-structured interviews and questionnaires of students, parents and collaborating teachers, observational notes. Conceptual mapping, photographs and audio and video recordings, written material from the students are being investigated in the individual and classroom portfolios children's reflections on their learning.

Results

The research process is completed by evaluating and disseminating the learning outcomes of the project. The results are consistent with the corresponding research question, as the socio-cultural approach of STEAM education and educational robotics facilitates preschool children to approach the learning area of sustainable development successfully. Simultaneously, the applied project contributes to the spontaneous and effortless involvement of the students and promotes their active citizenship.

Conclusions

The educational robotics and STEAM education are introduced as powerful and flexible learning tools that involve students actively in the learning module of sustainable development through authentic problem-solving activities. Children learn to work in teams, to communicate and collaborate effectively, in order to find suitable solutions to everyday problems through the use of robotics and science.

It is essential to note that through the implementation of this pilot project the school was awarded as Sustainable, Ecological and ICT oriented School, as honored school with National and European Quality labels from the eTwinning community, with the European Label of Code Week Schools and as "Ambassador School of the 17 Sustainable Development Goals". Finally, the teacher was awarded from the United Nations, Educational, Scientific and Cultural Organization (Hellenic National Commission for UNESCO).

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437 Digital Education Law In Brazil: Contradictions For Human Development

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Digital education Cultural Historical Approach Human Development

SHORT ABSTRACT

Abstract

The article explains the contradictions faced by the Brazilian public schools in integrating Digital Information and Communication Technologies (TDIC) in education. This policy was evidenced during the COVID-19 pandemic, due to the urgent adoption of the National Digital Education Policy Act (PNED) in 2023, without broad debate in society. Especially in a reality that presents accentuated and complex regional inequalities in the access and mastery of TDICs, which impacts mostly on economically disadvantaged areas. This article aims to investigate the impact of the amendments to the National Education Guidelines and Bases Act (LDB) by PNED on Brazilian school education, analysing the potentialities and challenges linked to pedagogical practice. This documentary research analyses the LDB amendment arising from the PNED, using the historical-cultural method. The result reveals that in the update of the LDB, there is an emphasis on the adaptation of students to existing technologies, not promoting the critical development of TDICs and mediating conditions for digital education to promote mutual integral development of teachers and students. It concludes the importance of a critical discussion on digital education, going beyond the simple inclusion and use of technologies. It proposes to rethink the educational structure, focusing on the promotion of creativity, innovation, scientific and technological development, aimed at human emancipation.

EXTENDED SUMMARY

Introduction

The public school faces economic and social challenges to integrate the use of digital information and communication technologies (TDIC) into education. The inequalities were evident during the COVID-19 pandemic, including in terms of access and mastery of TDICs, predominantly used in this period to give continuity to education (Bernardes et al, 2021).

According to Seki and Venco (2023), the PNED was approved with urgency, without counting on debates in society. For the authors, this law aims to adapt the labour force to the new needs of production.

After the pandemic period, in 2023, the Brazilian government sanctioned the National Digital Education Policy Act (PNED) which amends, among other laws, the National Education Guidelines and Bases Act (LDB), which was updated with paragraph XII, addressing digital education and emphasising

the importance of integral education of subjects in the face of the needs that emerge in this global pandemic context.

The LDB establishes guidelines for national education, covering all levels and modalities of education, in public and private institutions, focusing on guiding principles, organisation of the educational system and regulation of the Brazilian educational evaluation, establishing minimum standards of quality. The federal government has competence to legislate on LDB and the states and municipalities must legislate collaboratively on education (BRASIL, 1998), which can result in contradictions that impact the reality of schools.

This article aims to investigate the impact of the LDB amendment by PNED on Brazilian school education, analysing the potentialities and challenges linked to pedagogical practice.

Methodological procedures

This study is a documentary research, which analyses materials in their primary state (Kripka et al, 2015), in this case, the changes in the LDB from the PNDE. The analysis was carried out from the method of the cultural historical approach: seeking to understand the historical process of LDB, identifying and explaining its origin, cause and dynamic-causal nexus, through its contradictions that are evident in the movement of transformation throughout the time, and how the result impacts on human development.

Result

The update of the LDB is related to the duty of the State to guarantee conditions for digital education and indicates competences related to “creation of digital content, communication and collaboration, security and problem solving” (BRASIL, 2023). Highlighting the suitability of students to existing technologies and not to their full development, in which the subjects would be able to analyse TDICs critically.

The creation is limited to digital content and not technology itself. On the other hand, it reveals possibilities for dealing with problems arising from the digital culture.

Considering that any new technology is a product of human development, created from material and psychological conditions (Vigotsky, 2009), based on knowledge accumulated over generations and that the role of the school is to enable the subjects to appropriate the knowledge produced by humanity historically (Saviani, 2011); it is understood that the application of this law should be in the sense of the critical appropriation of TDICs, considering their contradictions, by educators and students, in which they can develop the domain of conduct with regard to technology in their everyday life, using them intentionally and consciously. In addition, it should promote the creation of new technologies for the transformation of reality, aimed at human and social development.

It is necessary to incorporate technology as a pedagogical tool and object of study, in which it is possible to analyse it critically and discuss its development in society, considering the impact of TDICs on social relations, and consequently, on the development of subjects.

Faced with the social and economic context of Brazilian public education, it is urgent to create conditions for access to TDICs by schools as an object to be discussed. Its insertion as a tool should be carried out as a support to the pedagogical process, along with other existing ones.

Conclusion

The policy on digital education must be followed by critical discussion, considering the logic that prevails in contemporary society, which highlights the need for adaptation and submission to the

rapid transformations imposed by technological development. This perspective, however, contrasts with the criticism of the capitalist pattern, which neglects the human development of all subjects. In the educational field, this path points to the priority of digital "inclusion" and the "use" of technologies, but stressing the absence of an emphasis on the promotion of a truly creative matrix of science and technology, which when resumed to the debate of integral education, stresses the need to empower people, not just their integration into the universe of education.

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438 Exploring TADS across educational contexts

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Theme: Promoting interaction in social practices

Keywords: TADS Curricular change Problem solving

SHORT ABSTRACT

Transformative Agency by Double Stimulation (TADS) emerges as a powerful analytical tool for understanding the intricate dynamics within activities and how the subjects involved navigate and resolve inherent contradictions. This symposium serves as a platform to delve into three distinct applications of TADS, shedding light on different aspects of the education system. In the first case, a historical investigation, the subjects in the TADS process are government institutions. The authors used a curricular change that took place in the early years of the Cold War to understand what prevents or engages transformative changes in education amid a turbulent period. In the second, an investigation into the reasons that make an individual change their activities, longitudinal research was carried out focusing on collaboration between science teachers and a pedagogical advisor, which aimed to develop technical and pedagogical tools to achieve the requirements proposed by a curricular change. Finally, the last paper examines a hybrid learning activity dedicated to solving societal problems in the real world, intending to understand how subjects in higher education and the private sector can negotiate the activity's object. In addition, the study identified discursive manifestations of contradiction and expansive learning actions that characterize the emergence and development of TADS.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Before World War II ended, President Roosevelt asked his Research and Development Advisor about continuing scientific development after the war, and one of the recommendations was to improve the renewal of scientific talent, especially in high school. However, the twelve-year delay between these questions and implementing a curricular change raises the question: Did something delay or trigger the change? This delay is especially intriguing, considering other recommendations for the same inquiry were acted upon five years later. This delay in addressing an acknowledged and significant issue resembles the process of Transformative Agency by Double Stimulation (TADS), where a conflict of stimulus could have hindered change, and one (or multiple) second stimulus could have triggered the creation of a curricular change in 1956. While TADS typically refers to individuals or groups of people, this research considers governmental institutions as subjects. Over 200 articles from key 1950s US journals were examined to map the conflicts of motives. This analysis validated the

hypothesis and identified a TADS process, as the conflict of stimuli was caused by two competing demands: the need for science education reform, the priority in military conflicts and economic stability, and the belief that the US would not be surpassed in technology. After many events proved the USSR could reach the US scientific and technological level, the conflict of stimuli was aggravated, and change became inevitable. This complex chain of events revealed the US's lag in science and technology, prompting action via efforts to enhance science education.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

The twelve-year delay between US President Roosevelt's inquiry to his Research and Development Advisor, Vannevar Bush, and the implementation of changes in high school science curriculum with the Physical Sciences Study Committee (Bush, 1945/1960; Goldstein, 1992) raises an immediate question: Did something delay or trigger the change? Especially when we consider that other suggestions made by Bush were readily implemented, such as the creation of the National Science Foundation five years later (National Science Foundation Act, 1950).

Inaction on a known and significant problem, later resolved, resembles the general process of the Transformative Agency by Double Stimulation (TADS) (Sannino, 2015, 2020). The literature on TADS usually refers to subjects as individuals or a group of individuals (e.g., Haapasaari & Kerosuo, 2015; Hopwood et al., 2022), whereas the subjects in this research are governmental institutions. We hypothesized that the delay in implementing science education changes in the United States could be understood as a first stimulus, meaning that something had happened before 1956, triggering the changes. One possibility was the study "Soviet Professional Manpower: its education, training, and supply" (DeWitt, 1955).

Our goal for this study was threefold: to understand if TADS could be used when subjects are institutions, to investigate if there was a conflict of motives hindering curricular changes and if there were one (or multiple) second stimuli that triggered the changes to occur in 1956.

To accomplish this, we used Document Analysis (Bowen, 2009) to study over 200 articles published in three prominent journals in the United States during the 1950s: *School Science and Mathematics*, *National Education Association Journal*, and *Scientific Monthly*, where renowned researchers, political figures and government members would publish their visions and analyses of science and education. The analysis resulted in proving the hypothesis correct, leading us to formulate the following TADS process:

Conflict of Stimuli: The government understood the importance of investing in science education, but at the beginning of the decade, other areas needed to be prioritized, such as war and economic stabilization. Also, there was a general belief that the USSR could not easily surpass the country's scientific and technological knowledge.

This conflict of stimuli leads to a first stimulus: Investing in science education would benefit multiple areas, including the military and economy. However, there were other priority areas and no apparent evidence of Soviet scientific and technological threats.

A myriad of events throughout the first half of the 1950s comprises a chain of second stimuli, such as the knowledge of Soviet advancements in military fields, the Soviet Five-Year Plan, the 1953 thermonuclear tests, and DeWitt's research.

In this case, the second stimulus is a chain of stimuli that, by themselves, could not trigger the changes, but together made the US realize that they were not as ahead in science and technology as they thought, giving way to the search for teaching materials by the NSF to improve science training. We note that DeWitt's (1955) research aggravated the tension created by each of the links in the chain of second stimuli, turning the conflict into a double bind that rendered action unavoidable. In this text, we proposed investigating a TADS process in which the subjects are government institutions. Historical research shows us conflicts of motives and a chain of second stimuli which, on their own, were not enough to engage the US government in curriculum change. Without interviews with the prominent people involved in this process, it is impossible to say that the links were connected in the way we are proposing and that they were responsible for the changes. However, the evidence in the speeches of people in high positions in the federal government indicates the first stimulus presented here as a determining factor in the understanding that science education should not be a priority in the early years of the Cold War.

The use of TADS in this work was aimed at understanding a historical process within science education and verifying the possibility of its use in situations that do not directly involve people as subjects but rather institutions. In this quest, we want to better understand the conditions that influence a government to make decisions in the face of paralyzing conflict situations and what is needed to trigger peremptory change.

How interaction with the participants is planned

Q&A with the participants

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

The implementation of a new curriculum represents a context likely to shake up teaching practices, but also a lever for getting teachers to renew their practices. This raises the question of what makes individuals want to change their activities. To answer this question, longitudinal research was carried out, focusing on a seven-year collaboration between two secondary school science teachers and a pedagogical counselor. The aim of this collaboration was to co-design and exchange technical and pedagogical tools to meet new curricular requirements that emphasize the integration of technological design into science teaching. The *Development Work Research* approach was used to identify how the expansive resolution of conflicts of motives stimulates transformative actions that enable the resolution of the activity's internal contradictions. The principle of double stimulation, arising from conflicts of motives, played a key role in the decision-making process. The expansive resolution of conflicts of motives was a starting point that gave new meaning to their teaching activity. Questions emerged as we supported teachers' individual and collective agency. The boundary crossing activity was made possible as new meanings, new roles and a division of labor led to the expansion of their teaching practice. Seven years of *Development Work Research* set the stage for a completely unpredictable expansion.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

An educational reform has taken place in Quebec, resulting in the introduction of a new science and technology curriculum rooted in the techno-scientific literacy of learners (Fourez, 1994), requiring teachers to employ student-centered educational approaches and to move away from traditional practices (Jutti et al., 2009; Roth and Lee, 2004). This new curriculum is also characterized by the

integration of technology into science teaching (GQ, 2006; 2007), even though teachers have not been trained in this type of approach. This integration challenges the identity of science teachers (CES, 2013), who have to become science and technology teachers, causing a conflict of motives for many (Barma, 2011). To better understand how conflicts of motives are overcome when teachers share their expertise, and how emotions are involved in the process, a seven-year collaboration (2010-2017) between two high school science and technology teachers and a pedagogical counselor was implemented. This collaboration was aimed at the design and exchange of technical or pedagogical artifacts which, according to Severance et al. (2016) would help teachers to break away from their current practices, generally based on lecture-based teaching strategies, and integrate technological design approaches into their teaching. The *Developmental Work Research* theoretical and methodological approach was employed, more specifically the interventionist epistemological principle of double stimulation, which plays an essential role in the decision-making process and enables us to understand how individuals overcome contradictions. The artifacts produced were used as a first stimulus to trigger teacher actions (Severance et al., 2016) with the aim of leading the teacher to resort to a conceptual artifact (2nd stimulus) to which he or she will give meaning and which he or she will use to act and break with traditional teaching practices (Barma et al., 2015). Ethnographic data have been collected over the years in the form of audio-video recordings of training workshops, interviews, photographs and artifacts produced by the team (including pedagogical documents, videos, prototypes, websites and administrative documents) with the aim of identifying conflicts of motive likely to give rise to agency, identifying recurring tensions and contradictions present in the activity and identifying the boundary crossing objects between different activity systems. The analysis reveals that emotional experiences and actions of resistance or those of envisioning future possibilities favored the overcoming of contradictions faced by participants. Teachers and pedagogical counselors navigated complex learning environments using learning actions to make new sense of conflicting patterns. It was by resolving the internal contradictions identified in their activity systems that the transformative actions that enabled expansive resolution of conflicts of motives emerged. Expansive resolution of conflicts of motives takes place as teachers address new stimulus conflicts and new conflicts of motives and is the ignition point that gives new meaning to activity, thus representing a mediating chain of agency (Engeström and Sannino, 2013). The layers of the chain of agency broaden as boundary crossing reveals new meanings, new roles and division of labor leading to the expansion of the teaching practice as new contexts are reached out during the activity. The expansive resolution of conflicts is the starting point of expansive learning which, in this particular study, leads participants to engage in professional development and design workshops reaching 170 science and technology teachers and pedagogical counselors from 15 school districts. Seven years of DWR set the stage for a completely unpredictable expansion.

How interaction with the participants is planned

Q&A with the participants

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

In both higher education and the workforce, the ability to solve problems creatively is becoming increasingly important (Hopwood & Sannino, 2023). This presentation examines a hybrid learning activity (Yamazumi, 2021) dedicated to the solving of a specific problem in the real world from a Cultural Historical Activity Theory perspective (Engeström, 2015; Engeström et al., 1999; Sannino et

al., 2009) through a conceptual framework based on Transformational Agency by Double Stimulation (Sannino, 2015b, 2015a, 2016, 2022; Sannino & Laitinen, 2015). It aims to understand how participants in complex learning environments across higher education and private sector (Yamazumi, 2013, 2020) may negotiate a shared object of activity. The findings provide insight into the pathways used in heterogenous and temporary groups (Engeström, 2008; Kerosuo, 2017, 2018) across the classroom and the real world. These pathways show how resistances and expansion may emerge and evolve over time to collectively overcome competing options and difficulties (Barma et al., 2015; Barma & Voyer, 2024). This study further identifies clusters of discursive manifestations of contradictions (Engeström & Sannino, 2011), and expansive learning actions (Haapasaari et al., 2016) to characterize the emergence and evolution of transformative agency by double stimulation over time.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Understanding how agency unfolds in a wide variety of contexts has become a necessity (a) to address societal and environmental issues in contemporary society, and (b) to foster collective and creative futures promoting the common good (Hopwood & Sannino, 2023). In this presentation, we frame the solving of societal issues in the real world as an activity of problem identification (Sannino, 2023) which may occur in hybrid educational activity (Yamazumi, 2013, 2021) in temporarily forming coalitions of knotworking (Engeström, 2008; Engeström & Sannino, 2021). The object of activity may be defined through collective phases of regulation of learning actions which may result in the expansion of its object (Engeström, 2015). We hold the position that the shared building of an object of activity is a possible and realistic endeavor in a complex learning environments (Yamagata-Lynch, 2010) through hybrid educational activities involving the community pole of a system of activity (Engeström, 2008; Yamazumi, 2021).

Overcoming contradictions and dilemmas may produce qualitative changes (Lund & Vestøl, 2020) either in the object of activity or at any of the poles of the system involved. Double stimulation as a method (Sannino, 2015a) may be a fruitful conceptual and methodological framework to use in highly complex, ambiguous and contradictory situations. We have identified activities involving intermediate objects such as climate change (Hickel, 2019) and contend such activities may shed light on processes of collective creative processes involving divergence and convergence phases aiming to increase the novelty and usefulness value of objects across interacting activity systems. Therefore, we sought to trace the emergence and evolution of TADS over time in a potentially expansive problem-solving activity involving higher education, scientific work and vocational work in a higher education hybrid activity occurring over an academic minor program.

The data in this study is constituted of ethnographic data collected over a three-month period combined to stimulated recall interviews conducted at various points during the data collection period. We used a dialectical unit of analysis described as the interplay between problem situations (stimulus 1 – S1) and resources mobilized to solve them (stimulus 2 – S2) (Lund & Vestøl, 2020). This S1 ↔ S2 unit of analysis allowed us to capture the dynamic relation between volitional action and cultural resources as a means to collectively regulate challenging situations (Hopwood & Sannino, 2023). The data was analyzed through qualitative content analysis, and clusters of contradictions and expansive learning actions were identified through a multidimensional scaling method.

Our results evidence three groups of associations of $S1 \leftrightarrow S2$ problem solving units, involving expansive learning actions and discursive manifestations of contradictions. Studying the relation and evolution of discursive manifestations of contradictions (Engeström & Sannino, 2011) and expansive learning actions (Haapasaari et al., 2016) over time allowed us to identify three cluster pathways involving different associations of contradictions and actions; the evolution of TADS over time may therefore be characterized by shifts in the resolution of tensions and conflicting motives which are dominant in the first cluster characterized by dilemmas and explicating new possibilities. The second clusters shifts towards conflicts and resistance under the pressures exerted by critical encounters (Engeström et al., 2015) producing movement and transitions in the modeling of a shared object of activity across boundaries. Finally, the third cluster is characterized by double binds and critical conflicts, on the one hand, leading participants to envisioning new models, committing to concrete actions, and taking actions, on the other hand, corresponding to the emergence of a stimulus 2. The trajectory of problem solving described, or pathway, displays an expansive trajectory and allows for the modeling of a qualitatively different object of activity.

The trajectories evidenced by the use of a dialectical unit of analysis in a potentially expansive context (Jalasi, 2020) involved may be described as expansive pathways. Such pathways may provide a way to describe the creative process of problem finding while addressing societal challenges through expansive resolution of conflicting motives (Barma et al., 2015; Barma & Voyer, 2024) across heterogeneous coalitions (Engeström & Sannino, 2021) involving higher education, research, and professional practices.

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442 ONLINE - Climate Change Education for social transformation

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Dealing with climate change

Keywords: environment transformation education

SHORT ABSTRACT

Climate Change represents the biggest challenge of our time. The rising of global temperature and sea levels, the changing in weather patterns and the melting of polar ice caps are some examples of events that are occurring on a planetary scale. Our planet has been facing transformations from the early beginning; however, human activity is causing changes faster than has ever been seen before. These changes pose an unprecedented threat to the entire mankind and the ecosystems on Earth. Despite these climate changing events worldwide, the consequences are not equal for all of us due to our social inequality system. Education plays an important role in this situation since it can create new pathways to deal with this. This is the context of our research that investigates how education can truly make the difference and promote social transformation from the project we developed in a Brazilian school located in a poor neighborhood of Sao Paulo. In our research, climate change education is designed through play to provide knowledge, skills and competencies that make them key players of change so that they are able to deal with their own vulnerability and, consequently, provoke social change in the community they live in. These students are part of the Brincadas Project created by LACE (Language in Activities in School Contexts Research Group) in order to develop multimodal repertoires to investigate, describe, analyze, prepare, implement, reflect, propose, and evaluate ways of acting to overcome adversities that have made situations of social vulnerability catastrophic.

EXTENDED SUMMARY

This session offers the opportunity to experience and discuss Climate Change Education in a perspective of creating new possibilities to promote social change. Since humans are facing this unique ecological challenge that impacts all living things on our planet and represents a threat to all life on the planet. People who are living under vulnerable conditions suffer the largest impact. This is due to our social inequality that shapes environmental justice. Therefore, it's our duty as educators to encourage approaches that provide knowledge, skills and competences to students to deal with this - as well as establishing a sense of community and awareness of social justice. In this workshop, participants will be invited to enlarge their angle about how to create meaningful experiences about Climate Change Education through play. According to Vygostky (1978), play action is subordinate to meaning while real life action dominates meaning. It is only in play that the child can be strictly subordinated to rules, because it is in play that subordination to rules leads to pleasure. In other words, it means play offers opportunities to learn beyond possibilities allowed in our real life. By this

idea, learning needs to be seen as a social-cultural-historical process in order to accomplish the aim of social change and teaching that enables transgression, a movement against and beyond boundaries. It is that movement which makes education the practice of freedom (HOOKS). For Vygotsky, through others we become ourselves and create these strategies of play to enable a space to develop a transformative, liberating, voluntary and decapsulated agency (FREIRE, 1987; STETSENKO, 2017; LIBERALI, 2017). First, there will be an explanation of the research and importance of Climate Change Education from the perspective of critical thinking and engaged multiliteracies as well as the research's key findings. According to Liberali, engaged multiliteracy is an interactive cross-language experience in a creative learning environment through the practice of a political act, where Engaged Multiliteracy (LIBERALI, 2021) is applied as a tool to produce the "viable unheard of" (FREIRE, 1987). In other words, this would be used in the sense of creating the collective agency for reality transformation. After that, participants will be invited to play together in a play-performance activity in order to create something collective and relate how their creation impacts others. The idea is to dive into reality and to bring awareness about how our actions affect all of us and expand possibilities of acting and thinking, individually and collectively to a common goal. This playful moment will engage participants to experience how play makes us a head taller than ourselves (VYGOTSKY, 1933). For this activity, it will be considering the concept of creative chain (LIBERALI, 2009). According to Liberali (2009), a creative chain implies collective engagement in an activity that produces shared meanings, which will be then shared with other new partners so that those participants from the initial activity bring to a new activity. From there on, participants will be instigated to think about how they played and reflect about new ways of thinking based on what they created collectively.

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443 Curriculum studies from the Cultural-Historical Activity Theory perspective in science teaching

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Imagining future worlds

Keywords: Curriculum Globalization of Education Science Education

SHORT ABSTRACT

The basic education curricular reforms of the last two decades, guided by the concept of competencies and centralized at the national level, have shaped educational trends worldwide. Such reforms have been produced in a context of international standardization of teaching, driven by globalization, and mediated by international organizations, such as the OECD, UNESCO, World Bank and the European Parliament. Science Teaching, the focus of our investigations, also suffers several impacts, such as changes in the importance and centrality of disciplinary knowledge, workload, teaching and learning methodologies, conceptual, procedural, and thematic contents, assessment concepts, teacher training, and learning resources. Different curriculum documents have been developed at different political levels, pointing to an increasing complexity of motives for curriculum production activities. The growing number of curriculum proposals indicates an expansion of activity characterized by the production and implementation of curricula worldwide. In this research, we discuss a proposal for a theoretical-methodological tool to analyze curricular documents critically. The tool should be able to organize and elucidate the motives behind curriculum documents and the activities proposed to accomplish their objectives by analyzing the authors' discourse, mainly to identify the contradictions between the object of the curricular activity and the actual problems faced by the educational systems. Although the proposed tool is under development, we include preliminary results from the analysis of contemporary curricular documents from different hierarchical levels as examples of the tool's use.

EXTENDED SUMMARY

Background

In the globalization of liberal perspectives and capital, education has been gaining importance on the political and economic scene (Saltman; Means, 2018). Amid various power struggles, profound transformations have occurred within educational systems throughout the 21st century. Despite the different forms of influence, curricular activity is a disputed field that carries the struggle for the power to choose which cultural set of historically stabilized and systematized knowledge will be introduced and sustained in school activity (Apple, 2006). Recent curricular reforms have grown more complex, with noteworthy emphasis placed on fortifying a humanistic approach within curricular proposals from supranational agencies (e.g. UNESCO, OECD and World Bank), with competitiveness

associated with social inclusion and sustainable development as the supporting ideology (Xiamoin & Auld, 2020). The incorporation of the SDGs into curricular documents, the endeavor to outline the competencies required for their advancement, and centralized coordination at the federal level represent key focal points of these reforms. In this context, we explore the development of an analytical tool to test our hypothesis that while modern curriculum reforms address current political, economic, and environmental challenges, they may not fully overcome the actual social and educational contradictions.

Aim

Here, we present the first developments of a theoretical-methodological tool for critically analyzing curricular documents. The tool should be able to organize and make explicit the motives of curriculum documents and the activities proposed to achieve their objective through the discourse of their authors. Thus, the main objective of implementing this tool is to identify the motive of the curricular activity and confront it with the social and educational contradictions identified in the text.

Methods

Engeström (2001) proposes the following activity's characteristics: it (i) is directed towards an object, (ii) is multivocal, (iii) is driven by contradictions, (iv) is historical and (v) expands. Each explains the dialectical nature of the development of mediations and coordination of actions over time.

Engeström (2002) examines the interaction between two or more activity systems and the challenge of generating a shared object to accommodate the increasing complexity of the activity system. The unit of analysis becomes more complex as the activity systems can now make up a new, more complex, hierarchically superior activity system, also oriented towards a new object. The activity systems that make up the more complex system can be seen as the coordinated actions of this new activity system. The different coordinated elements express the multiple voices of the subjects of the activity, the diverse points of view, traditions and interests involved in the activities, which are formed and transformed throughout history, expanding the activity that continually overcomes and produces contradictions. The driving force behind human activity is constantly overcoming and producing contradictions. For Engeström and Sannino (2011), we do not have direct access to the contradictions in empirical phenomena but only to their discursive manifestations, indicated as dilemmas, tensions, conflicts and paradoxes. Despite this, their approach implies that identifying a contradiction requires a historical investigation of the phenomenon, dialectically analyzing the units of opposing forces or tendencies in its historical movement. In this way, considering the dynamics of curricular activity from the perspective of CHAT, we are developing a theoretical-methodological tool for curriculum investigation whose steps begin with the selection and reading of curricular documents, the organization and explanation of the motives and the activities proposed to achieve their objective. Then, we developed the following categories of analysis to identify the motives: (i) the definition of the contemporary context and (ii) the concept of student education. Furthermore, we introduced two other categories to identify the proposals to resolve the problems derived from the motives: (iii) teaching methodologies and (iv) learning and school content. Then, the internal coherence between the motive and proposed activity is analyzed. The analysis must be based on the historical development of the phenomenon. Then, it's necessary to identify the activity system from a historical and systemic study that involves investigating its authors and their supporting institutions, also examining the past curricula, and conducting material and dialectical analysis of the social and educational contradictions experienced by the society for which it is designed.

Conclusions

The tool we are presenting seeks to distinguish and elucidate the contradictions identified and presented by the authors of the curricula under scrutiny, aiming to determine whether curricular proposals can effectively address the practical challenges in educational activities worldwide. There is a need to improve curriculum analysis by carrying out systemic and historical studies of the curriculum activity system. The importance of this type of study is based on the growing complexity of the curriculum production activity, whose product – the curriculum – laden with economic and political contradictions, may not always be transparent to its consumers, yet it shapes educational contexts that frequently diverge from the necessities of the countries adopting those educational principles.

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444 ONLINE - Change Laboratory intervention with adolescents – dialogue on ethical issues

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Research ethics Change Laboratory Adolescents

SHORT ABSTRACT

In this presentation, I invite colleagues to discuss ethical issues when conducting Change Laboratory (CL) interventions with children and adolescents in the field. When the participants of the intervention are minors, the ethical aspects should be discussed with great seriousness during the research project in all its phases. The age, level of development, social status, power relations, and context impose special conditions on researchers. On the other hand, researchers must not put the child in a situation that is too demanding or potentially harmful. On the other hand, the researcher should not assume that the child is more vulnerable or incapable of participating because of their age, status, or context. In the presentation, I use two research projects and three CL interventions as examples. The presentation is built dialogically, emphasizing joint discussion. After a short introduction, I will raise dilemmatic examples as mirror material. As a presenter, I facilitate the discussion, but the content is produced jointly based on examples of three field interventions.

EXTENDED SUMMARY

Change Laboratory intervention with adolescents – dialogue on ethical issues

Change Laboratory (CL) intervention has been used worldwide in educational institutions, workplaces, and communities to generate bottom-up solutions to challenging problems and complex transformations since 1995 (e.g., Sannino & Engeström 2017). There is still little experience in implementing CL interventions with children and adolescents, although interest has increased in recent years (Tapola-Haapala, Rantavuori & Ruutu 2023, 238). This presentation examines ethical issues when formative interventions are planned and implemented with children and adolescents in the field.

Nuttall (2022) examines the ethics of CL interventions and points out that researchers need to develop a nuanced understanding of the ethical complexities when employing double stimulation to develop practices and facilitate change. When the participants are minors, the ethical aspects should be discussed with even greater seriousness during the research project in all its phases. The age, level of development, social status, power relations, and context impose special conditions on researchers. On the other hand, researchers must not put the child in a situation that is too demanding or potentially harmful. On the other hand, the researcher should not assume that the child is more vulnerable or incapable of participating because of their age, status, or context.

When conducting CL intervention in the field, researchers cannot promise total anonymity to participants. This is something researchers need to be very aware of when working with children and

adolescents. Research results on a specific group of adolescents can be used for unethical purposes. In our time, simplified and polarized messages spread quickly in the media and social media. False interpretations start to spread, and correcting these messages is often difficult. It is necessary to assess whether conducting research causes harm or damage to the participants (Kvale & Brinkmann 2009, 68-69), and researchers are responsible for reporting the findings so that it does not stigmatize the participants (Cook 2012, 333). Change Laboratory intervention usually produces new models and solutions, so there might be a controversy between participants' right to get recognition with their name and, on the other hand, the need to protect the adolescent from potential harm.

In this presentation, I invite colleagues to discuss ethical issues when conducting formative interventions in the field. In the presentation, I use two research projects as examples.

In the first research project, eighth-grade students were invited to work on projects chosen and shaped by themselves, with the support of researchers, school staff members, and external professionals. We conducted two CL interventions in two public comprehensive schools. Altogether, 32 eighth graders voluntarily joined our research project and worked on 11 projects related to issues important to themselves, such as equality, bullying, and adolescents' possibilities to influence at school and, more broadly in society. Some of the projects were very personal and sensitive for the participants. Based on the experiences of these two interventions, I will raise some ethical issues, such as:

- dealing with sensitive and controversial topics through intervention and publishing about these topics
- the role of adolescents as co-researchers publicity of the outcomes of the CL intervention

The second research project is currently being planned with the city of Helsinki for adolescents whose school situations are very challenging and complex for themselves, their guardians, and the professionals working with them. These situations are related to school violence, negative group phenomena, and prolonged conflicts. In the presentation, I will focus on the themes related to this intervention, such as:

- designing the intervention and ethical review
- protecting participants from potential harm or the threat to their safety

Ethical issues in research are often perceived as complicated and burdensome, especially with children and adolescents. The presentation is built dialogically, emphasizing joint discussion. After a short introduction, I will raise a few dilemmatic examples as mirror material. As a presenter, I facilitate the discussion, but the content is produced jointly based on real examples of these two field interventions.

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445 A Dialogue between Leont'ev and Gramsci as a Proposal for Studying Power and Change in CHAT

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: TADS Power Inequality

SHORT ABSTRACT

Cultural-Historical Activity Theory helps researchers understand the structure of human activities and the actions to transform them; however, it lacks a materialist-dialectical tool to model power in both societal structure and Transformative Agency. In this work, we introduce Gramsci's theory to model the power interplay between hierarchical levels, or power dynamics, by discussing how ideas are shaped and sustained within a community. We recognise that the combination of Gramscian's notion of hegemony and Leont'ev's concepts of sense and meaning can reinforce each other, leading to a more profound comprehension of the intricate dynamics involved in creating and perpetuating consciousness and agency or contributing to their lack. We aimed to understand how power can be conceptualised within activities and how these concepts can advance our understanding of power in CHAT by proposing a theoretical-methodological framework to study power. As a result, we present a conceptual map that gives structure to the dialectical pair of sense and meaning by introducing the role of hegemonic-established senses in shaping and sustaining activities, which can explain how power is perpetuated and how it can be contested. This map is a tool to help researchers model situations where power is involved, and the relationship between the concepts shows the dialectic synthesis of agency and structure, which is central to understanding power dynamics. We provide two examples of the use of this framework: the case of science denialism focused on the Flat-Earth movement and the case study of unequal gender representation in Finnish universities.

EXTENDED SUMMARY

The lack of tools in CHAT to model and analyse power relations is often criticised (*e.g.*, Avis, 2009; Esmonde, 2017). Take racism, for example, which is not a system of activities, instead transcends it (Esmonde, 2017). Any theoretical-methodological tool explaining power must be precise enough to deal with its complexities. It must explain both racism and antiracist movements, misogyny and feminism, *i.e.*, how power structures are organised and, at the same time, how people can use their power to change their social reality, it must also be a way to analyse and deal with inequality. Leont'evian's (1978) sense and meaning constitute a dialectical pair and comprise one of CHAT's foundations (Engeström & Sannino, 2021), but they don't regard how society forms and sustains its beliefs. To overcome this, we propose using Gramsci's works (1977a, 1977b, 1977c), primarily his reflections on hegemony, which can help us understand the lacking aspects without losing the materialist-dialectical line of thought present in CHAT.

We aimed to understand how power can be conceptualised within activities and how Leont'ev and Gramsci's concepts advance our understanding of power in CHAT.

Every concept has an underlying system of activities that supports them (Lago & Mattos, 2021).

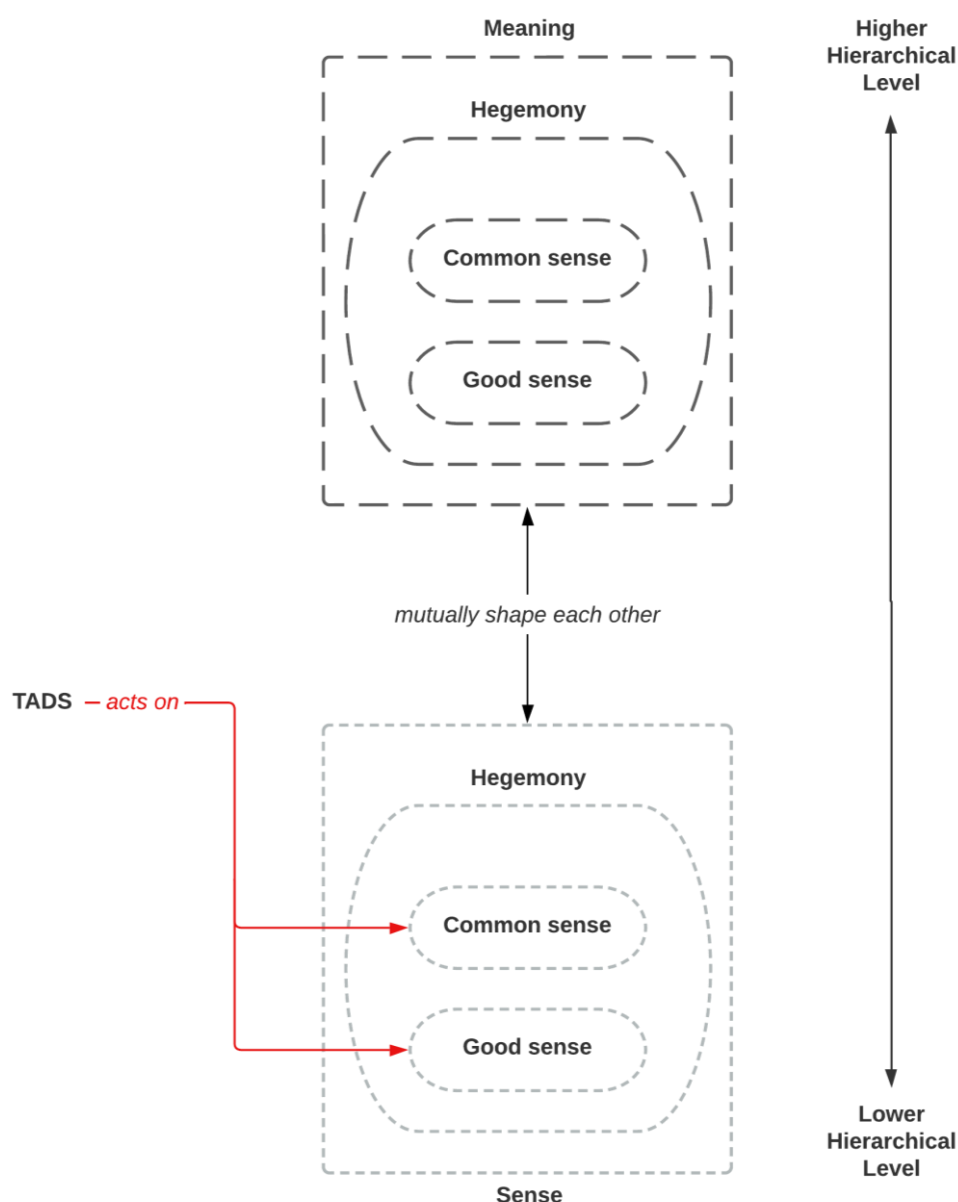
Leont'ev (1978) states that our participation in activities shapes how we think and act, while Gramsci (1977a, 1977b, 1977c), in a CHAT perspective, describes how activities establish hegemony by shaping our actions and thought through concepts. Thus, in studies of power dynamics, that is, how power interacts on different hierarchical levels, we should consider how sense and meaning are established and supported through hegemonic forces. That consists of a cyclic process, as hegemony legitimises activities that support the concepts that sustain hegemony.

The dialectical unity of consensus and coercion moves Gramscian hegemony (Hoare & Sperber, 2016) as coercion establishes and stabilises consensus, and the latter legitimises coercion. Consensus is produced and reproduced in two different ways: common sense and good sense. The first are those concepts acquired in the wild, not well-structured, while multiple cultural artefacts, such as movies and TV shows, shape it. On the other hand, good sense regards concepts learned in a structured fashion through education.

Another critical concept by Gramsci is the role of intellectuals. They mediate the relationship between the dominant and the subaltern class by actively producing and disseminating knowledge throughout society.

Considering the connections, we propose a conceptual map (Figure 1). While meaning and sense share the same structure, the first relates to broader activity systems on higher hierarchical levels, while the second regards lower hierarchical levels.

Common sense and good sense structure hegemony once they are established in the activity through coercion, and when crystallised in time, hegemony sets socially accepted meanings acquired by subjects through their participation in human activities. If we take back the example of racism, it indeed isn't an activity itself, but it is sustained and perpetuated by hegemonic-established meanings. As we participate in society, we express its hegemonic features, helping to propagate the meanings. In this sense, the Transformative Agency by Double Stimulation can enable subjects to act and transform their realities by contesting historically established meanings, becoming intellectuals that shape a new consensus, hence a new hegemony. TADS can bridge the gap between common sense and good sense, allowing for changes in subjects to propagate into the system of activities they belong to.



Conceptual Map Relating Gramsci and Leont'ev's Concepts

The study by Sannino and Vainio (2015) on gender imbalance in Finnish universities provides noteworthy elements for our analysis. The authors interviewed male and female physicists and showed that they have different relationships with their work-life balance, and they also give different values to specific tasks in the workplace, such as administrative work. An explanation is the historically established meaning that women should care for household chores. By living in a sexist society, we acquire these sexist meanings, which shape our senses, making individuals reproduce stereotypes even if they cause harm to themselves. These sexist meanings are maintained and reproduced by cultural artefacts that are consumed by society every day, such as TV shows, movies, books, etc. The role of TADS in this context would be to bridge the gap between the rational idea that men and women can accomplish the same things and, thus, shouldn't have different roles in an

activity, i.e., good sense, and the idea that is being portrayed in this situation – common sense – to promote transformative action changing the reality of those involved.

The fight for equality needs theoretical tools to understand power in its diversity. This study intends to be a first contribution towards a power tool in CHAT to understand the senses, meanings, and which activities sustain them so that we can promote changes arising from those in need.

Interaction with the participants: Q&A.

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447 Steps into the fourth generation of CHAT: City-based interventions across Espoo, Keelung, and Venice

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Presentation: Symposium (90 minutes)

Theme: Imagining future worlds

Keywords: City-based intervention Coalition formation Collective agency

SHORT ABSTRACT

Transdisciplinary research increasingly focuses on local communities threatened by critical challenges such as climate change, globalisation, pandemics, etc. to try and catalyse the transformative potential of their grassroots activities. Compared to corporate and state initiatives, civic ones often prove the most capable of addressing the collective needs for systemic change identified by city dwellers. Hence, the common purpose of city-based interventions is to contribute to the expansion of civic networks by developing educational tools, methodologies, and settings that support their future-making activities.

This symposium centres on studies applying CHAT to explore and promote civic engagement in three countries: Finland, Italy, and Taiwan. Lund illustrates the Community Workshops through which Espoo's civil society and civil servants learned to partake in communal decision-making by redefining urban development. Favaretto presents a diagnosis of Venice's civil society as the groundwork for city-wide formative interventions to tackle its social, economic, and environmental challenges. Shih and Lin document the evolution of sustainability-focused intervention practices of the maritime museum in Keelung, shaped by conflict-ridden processes involving multiple stakeholders.

By discussing their approaches and results, the researchers aim to highlight the role of civic networks as key catalysts for the formation of cross-sectoral and multi-level activities. These coalition-building efforts are examined as developmental processes of expansive learning and collective agency triggered by global critical challenges as they manifest in specific locales. Reflecting on the obstacles and support encountered throughout the city-based interventions can help other CHAT scholars operating in the wild to bring about significant eco-social changes.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Diagnosing civic change across Venice:

A preparatory procedure for fourth-generation formative interventions

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Venice is commonly considered an endangered city due to the social, economic, and environmental crisis it faces. Yet in recent years, the Venetian civil society has mobilised innovatively to reclaim the future of its community. This study employs a CHAT-based diagnostic procedure to assess the

conditions for expansive learning amongst local networks and broader coalitions confronting Venice's critical challenges. It examines four cases of civic activities tackling short-term tourist rent, environmental pollution, public property mismanagement, and neighbourhood degradation. The data collection consists of archival and documentary research, participant observations in organisational meetings, and thirty-five interviews with civil society representatives. Preliminary results reveal historical patterns and recent shifts in civic initiatives: after the devastating flood of 1966, large mobilisations sought to improve the Special Law for Venice and influence the work of the multi-level committee in charge of the city recovery; since its disinvestment in the early 2000s, local networks have dealt with such complex problems by expanding across social sectors and governance levels. Lately, these coalition-building processes have led to the co-development of a national bill on short-term tourism, the state-backed biomonitoring of contaminated city areas, and a regional project to regenerate abandoned lagoon islands. The findings of this city-wide diagnosis help define the trajectories of expansion that orient the following phases of the fourth-generation formative interventions on the Venetian civil society.

Keywords: CHAT-based diagnosis, expansive learning, coalition formation

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Once celebrated as the Most Serene, Venice has notoriously been plagued by incessant overtourism, the pervasive privatisation of its public spaces, as well as widespread social and environmental degradation in recent decades. Lately, a series of dramatic events, from the cruise ship accidents to the extreme flooding of 2019, and above all the Covid-19 pandemic have laid these existential threats bare to the larger public worldwide. Yet, the Venetian civil society has refused to surrender to the familiar chronicle of a death foretold for its city and sought to mobilise in radical new ways to confront such organic crisis (Cavallo & Visentin, 2021; Feltrin, 2022; Lopez, 2021; Tosi et al., 2017; Wacogne et al., 2022).

Therefore, this doctoral research aims to diagnose the conditions for the expansive learning of those local networks and broader coalitions facing Venice's critical challenges. The study adopts key concepts from CHAT to devise a diagnostic procedure as the basis for fourth-generation formative interventions (Dinh & Sannino, forthcoming). It seeks to reconstruct the major transformation of civil society activities through coalescing learning cycles as they tackle key problems (Sannino, 2023): short-term tourist rent, neighbourhood degradation, environmental pollution, and public property mismanagement. The diagnosis helps determine the main foci of the following interventions aiming to sustain the cross-sectoral and multi-level expansion of the Venetian networks (Engeström & Sannino, 2021). Thus, by drawing upon relevant instrumentalities and dimensions of development jointly diagnosed, coalition-building efforts can better lead to consequential change for the local community.

The diagnostic study on the Venetian civil society is designed as a critical case centred on four activity networks and coalitions. Their selection is based on long-term commitment to social change, widespread participation, and tangible impact on critical challenges. The data is collected in three phases and iteratively examined through directed content analysis (Assarroudi et al., 2018) to track the developing activities. Past mobilisations are explored via archival research, participant observations in public demonstrations, and two narrative interviews with longtime participants for every network. Recent expansive learning processes are reconstructed from organisational meetings,

internal reports, and semi-structured interviews with three representatives each. Lastly, initial findings are shared with the activists, observant participation continues, and four group interviews are conducted for member-checking.

This paper presents the preliminary results of the first two phases of the diagnostic procedure, namely the timelines of past mobilisation and recent cycles of expansion of the Venetian civil society. Activity networks show historical commonalities and current divergences: until the mid-1990s, the civic initiatives of many environmentalist, housing, and social-solidarity groups aimed at improving the Special Law for Venice. Promulgated in 1973 (Parliament of Italy), it established a multilevel committee in charge of promoting the environmental, urbanistic, and socio-economic recovery of the city. However, the role of the committee has notably weakened ever since the early 2000s. Thus, collectives and networks have increasingly mobilised as cross-sectoral and multilevel coalitions concerned with those critical challenges Venice faces together with other communities.

By tackling the mismanagement of public property as a complex problem across the Veneto region, one group has conducted a pilot project to regenerate abandoned state-owned areas together with two regional universities and the Public Property Office. Another network has defined short-term tourist rent as a country-wide issue and consequently activated Italy's civil society actors and key municipal administrations to propose new national regulations. Through similar endeavours, the local committee against pollution has co-developed a state biomonitoring study by working with research centres, the regional Departments of Health and Environment, and the National Health Institute. Such expansive processes can be explained as coalescing learning cycles involving collectives, networks, and coalitions of civic-based activities. Seemingly, collectives first engage with common issues for a specific district or municipality, networks tend to reconfigure them as city problems, while through coalition-building efforts they are reframed as societal challenges. Besides seeking to enact the desirable futures of the Venetian community, its civil society actors demonstrate how the work of local activists can catalyse broader social change by developing across sectors and governance levels. Therefore, the last phase of the diagnostic procedure aims to define the key trajectories of expansion that orient the city-wide formative interventions as they build on the principles of the fourth generation of CHAT.

As part of the ISCAR symposium, the paper is presented through PowerPoint over fifteen minutes, by the end of which a brief list of questions for the forty-minute debate is provided to the audience. After the three paper presentations, the symposium discussant opens the conversation by identifying the key topics of relevance for CHAT the authors addressed. The interaction with the audience is mediated by the use of AI-generated city images as visual representations of the challenges their communities face. To facilitate the discussion, the authors may also provide some field pictures that exemplify the results of the respective interventions.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Residents' agency and learning in urban development

Virpi Lund, Doctoral researcher, Department of Education, University of Helsinki, Finland/ Senior lecturer, Laurea University of Applied Sciences, Finland

The aim of this study is to investigate residents' agency and learning process in residents' workshops and in Community Workshops in urban development in the city of Espoo, Finland. The activity-theoretical methodology and method of analysis enabled the identification of discursive

manifestations of contradictions, expansive learning actions, transformation of the object of activity, and the subject of learning during the two series of workshops. The study addressed the reciprocal development of collective agency and the object of activity and indicated that expansive learning actions supported the participants to collectively identify and solve contradictions such as dilemmas, conflicts, and double binds. This enabled the participants to envision the developmental potential of their activity and take actions to transform it. The method of Community Workshop provided a structure for examining the complex urban situation to facilitate collective learning and problem-solving. This research contributes to the studies of expansive learning process and emerging collective agency in the context of urban development in a systematically implemented collaboration between residents, civil servants, community associations and decision-makers.

Keywords: community workshops; contradictions; expansive learning

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

In Finland the concept of urban development includes residents' participation, and to utilize residents' local knowledge (Government Act, 2015). The communal decision-making processes are open to residents' viewpoints and the development of the public services need residents' opinions and co-designing. This requires capacities to influence, communicate and acquire information, which are characteristic of residents' agency. Studies focusing on the target area have pointed out that the investments in residents' involvement strengthens their roles and enhances the sense of community in urban development (Kyttä, Kuoppa, Hirvonen, Ahmadi, & Tzoulas, 2013).

This research is connected to urban development with the aim of examining residents' collective agency and learning through participation in their neighborhood's developmental activities. It is based on the three-year participatory action research project Caring and Sharing Networks (2013-15) in the city of Espoo, Finland. The research project aimed at examining and enhancing residents' participation, developing means for residents', public sector's and decision-makers' collaboration, and engaging residents to take responsibility for their living environment. This research is motivated by urban development and residents' agency as a capacity to act together, to impact and change things in their residential area. The project consisted of three main data collections. Two main interventions of the research project were a series of four residents' workshops and a series of five Community Workshops based on the method of Change Laboratory (Virkkunen & Newnham, 2013). Besides workshops, dozens of interviews and participant observation have been conducted, to acquire understanding about residents' motives and interests (Lund & Juujärvi, 2018).

A series of four residents' workshops formed a context where residents' actions of exerting influence are manifested. The workshops were motivated with the desire to hear the residents' voice without the jargon of administration, and to allow them to speak in a free atmosphere (Lund & Kerosuo, 2019). After that we created an intervention which comprises five Community Workshops with an experimentation period as a relevant method of co-creation. They connected actors across different sectors and levels to collaborate and combine their resources to find solutions to complex urban challenges. They deepened the understanding of the problem area, promoted change and produced effective and durable solutions. In Community Workshops the participants reflected on and resolved contradictions that had emerged in their activities. At the same time, they supported participants' learning and the development of their agency (Engeström, 2007).

The method of Community Workshops is about developing new solutions that can be substituted for prevailing mindsets and practices. The outcome is a new solution that can be implemented in practice. This is achieved through analysing central development challenges together and envisioning a new direction of the development. New practices are created in the zone of proximal development (ZPD) emerging in the activity system, which expands the object of learning temporally and spatially. This triggered and sustained a development process that will also continue after the project. Expansive learning also involves development in participants' agency from the individual manifestations of the needs to collective change efforts. Transformative agency means resolving contradictions together and initiating a change towards new possibilities with the help of tools. The principle of double stimulation guided the transformation process (Sannino, 2022). This yielded to expansive learning, potentially expansive learning and non-expansive learning and to solving of the dilemmas, conflict and double binds. The analysis happened through the participants' discussions during the Community Workshop process. As a result, the residents organized tinkering workshops, public events, walking tours, space bank, food festival, and participatory budgeting process. As part of the ISCAR symposium, the paper is presented through PowerPoint over fifteen minutes, by the end of which a brief list of questions for the forty-minute debate is provided to the audience. After the three paper presentations, the symposium discussant opens the conversation by identifying the key topics of relevance for CHAT the authors addressed. The interaction with the audience is mediated by the use of AI-generated city images as visual representations of the challenges their communities face. To facilitate the discussion, the authors may also provide some field pictures that exemplify the results of the respective interventions.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Enhancing collaborative actions toward sustainability with a museum. Developing interactive interventions from monitoring water quality to enriching the commons

Tung-Wei Shih, National Museum of Marine Science and Technology, Taiwan

Hongda Lin, University of Helsinki, Finland

The article documents the efforts of a museum to transform its relationships with stakeholders in the city of Keelung. Located on a complex of reclaimed land, the museum faced local distrust due to past pollution and land use issues. To build trust, the museum initiated water-quality monitoring projects involving volunteers, professionals and citizen scientists. These initiatives expanded to include the establishment of a bay conservation zone, the promotion of coral restoration and a multi-stakeholder coalition. To study the process of developing intervention tools and collective intentions of the museum, the article adopts the concepts of complex object of activity and environmental stewardship, which emphasises responsive action by actors with different motivations and capacities. Data used in the article include meeting documents, project proposals, interviews covering perspectives from museum curators to neighbourhood members and stakeholders involved. The results of the analysis reveal evolving intervention practices in three phases: water-quality monitoring, conservation zone planning, and industrial alliance building. Each phase addresses conflicts with neighbouring communities (2003-2014), environmental legislation (2014-2017), and the fishing industry (2018 -). The article highlights the instrumentalities of the museum, emphasising its positionality and the coalitions it has formed. The significance of the study lies in its contribution to cultural-historical activity theory discussions on agency and transformative approaches.

Keywords: instrumentality, transformative approach, environmental stewardship

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Introduction

The development of planetary stewardship is proposed to shift a focus to the used of goods and services of the Earth system (Steffen et al., 2011). It requires the participation and coordination of local actors in shaping environmental governance. The article examines collective actions to monitor water quality developed at the National Museum of Marine Science and Technology. Located on the northeastern coastline of Taiwan, the museum is a complex of buildings built on top of a capped landfill, a decommissioned sewage treatment plant, and an abandoned fossil fuel power plant. Previous land uses and pollution had created hostile attitudes among local people towards the government and the museum. To gain the trust of the neighbouring communities, the museum developed tools to monitor water quality and coordinate collective environmental action on the nearby coast. The museum began monitoring water quality by testing the water drilled from the nearby coast and has now adopted the idea of restoring indicator species of water quality such as corals. The museum began by coordinating collective actions for indoor water quality monitoring with volunteers, and now it also works with different professionals and citizen scientists around the Coral Watch project and the conservational zone next by. The water quality monitoring projects have transformed the original environment around the museum into a shared resource that attracts tourism and research. Meanwhile, several challenges have emerged. Disputes between the museum and neighbouring communities and the fishing industry have been exacerbated by booming tourism. Environmental degradation has also been noted. Finding a way to avoid the tragedy of the commons and to provide public goods and services is a critical issue for the museum.

Aim

The article aims to understand the evolving intervention practices of the museum of marine science and technology. It analyses tools and resources that the museum has adopted in its intervention practices and orientations that have emerged in the process.

Theoretical framework, data, and methods

The article uses and develops instrumentalities of local environmental stewardship of Local environmental stewardship. Environmental stewardship refers to actions taken by actors with different motivations and levels of capacity to care for or use the environment responsibly (Bennet, et al., 2018). The article develops analytic framework by discussing environmental stewardship with concept of a complex object of activity (Miettinen and Paavola, 2018).

To study the cooperation between the museum and other sectors and industries, the article analyses the annual work reports of the Chaojing Aquaculture Station published by the NMMST since 2004, as well as the annual meeting minutes of the city's Fisheries Advisory Committee. The article also analyses the data collected through interviews to identify problems and conflicts encountered in the process. The interviews cover museum curators, professionals and service providers involved in water monitoring, and the active citizens of the neighbouring communities.

Results

Three phases of intervention practices of the museum are separated and characterised by three critical conflicts. In the first phase, from 2003 to 2014, the museum developed techniques of water quality monitoring at an aquaculture station to resolve the mistrust between the museum and its

neighbouring communities. In the second phase, from 2014 to 2017, the museum planned a conservation zone to resolve the conflict between environmental laws and protective measures adopted in civil actions initiated by environmental activists and scuba divers. In the third phase, from 2018 to date, the museum develops alliances across different industries including fishery, water activity and yachting to resolve the conflict between the fishing industry and sustainable production. The instrumentalities of the intervention practices adopted in the three periods are analysed.

Significance of the article for practice, policy, and the fields of the study

The article documents and discusses the instrumentalities developed and embedded in the positionality of the museum of marine science and technology. The article also discusses the policy significance of coalitions developed around the intervention practices of the museum. The discussion of stewardship over the case would contribute to the recent discussion of CHAT around agency and transformative approach methods.

Interaction with participants

As part of the ISCAR symposium, the paper is presented through PowerPoint over fifteen minutes, by the end of which a brief list of questions for the forty-minute debate is provided to the audience. After the three paper presentations, the symposium discussant opens the conversation by identifying the key topics of relevance for CHAT the authors addressed. The interaction with the audience is mediated by the use of AI-generated city images as visual representations of the challenges their communities face. To facilitate the discussion, the authors may also provide some field pictures that exemplify the results of the respective interventions.

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450 Addressing Vulnerabilities: COLINA Project as a Path to Social Transformation

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Ethical-political suffering Social transformation Marginalized communities

SHORT ABSTRACT

The COLINA (Collectives of Investigation and Action) project aims to address vulnerabilities exacerbated by climate and environmental emergencies in São Paulo, Brazil. Grounded in a decolonial perspective, the project challenges anthropocentric, capitalist, and colonial logic and collaborates with institutions working with socially vulnerable groups to develop actionable tools within their respective contexts. By utilizing the concept of ethical-political suffering and embracing the indigenous notion of Good Living, the project seeks to empower marginalized communities and foster social transformation.

The methodology employed emphasizes a critical collaborative research approach, centered on amplifying the voices of all participants and communities while managing ethical considerations aligned with the Sustainable Development Goals. Activities are outlined systematically, spanning periods for collective immersion in reality, discussion of needs and objects, reflection on possible activities, and planning and implementation of intervention projects.

Preliminary findings highlight the project's pivotal role in empowering marginalized communities and promoting collaborative, intervention-based approaches. The utilization of multimedia tools, art-based activities, and theoretical discussions has facilitated meaningful participation, addressed societal issues, and promoted equity and sustainability within communities. The project's success thus far underlines its potential impact on creating a more just, equitable, and ecologically sustainable society.

This presentation summarizes the aim, methodology, and initial results of the COLINA project, emphasizing its quest for social transformation and empowerment of vulnerable communities.

EXTENDED SUMMARY

The COLINA (Collectives of Investigation and Action) project addresses vulnerabilities heightened by climate and environmental emergencies in São Paulo, Brazil. It challenges anthropocentric, capitalist, and colonial logic, collaborating with institutions working with socially vulnerable groups to develop actionable strategies within their respective contexts.

The project presents a historical overview, emphasizing the use of Creative Chains (Liberali, 2018) and their impact on diverse vulnerable communities. The theoretical background delves into climate and environmental injustice, discussing concepts such as necropolitics (Mbembe, 2016), coloniality (Mignolo, 2015), and ethical-political suffering (Sawaia, 2003) to highlight the necessity for collective action and social transformation. The concept of ethical-political suffering, as proposed by Sawaia

(2003), emerges as a key theoretical framework for understanding the repercussions of social exclusion and inequality. The project gives voice to marginalized groups, enabling them to investigate and address adversities amplifying social vulnerabilities within their own contexts.

It critically analyzes systemic social exclusion and inequalities, aiming to acknowledge and confront the political operations of domination perpetuating social suffering. Furthermore, it seeks to empower active agency to transform individual and collective conatus (Spinoza, 2019), which refers to the power of existence and contributes to the developmental process.

Grounded in the indigenous notion of Good Living, the project embraces a decolonial perspective and endeavors to amplify unrecognized and silenced voices. By recognizing and elevating the voices of marginalized communities, the project aims to foster ethical and collaborative change. By engaging with systemic social inequalities, the project aims to support the expansion of political freedom and the establishment of communal norms to overcome ethical-political suffering.

Influenced by Vygotsky's (1933) concept of play and Freire's (1970) notion of the "viable unheard of", the project conducts activities known as Brincadas, facilitating critical collaborative settings that mobilize participants' agencies to explore uncharted possibilities. Play is viewed as enabling the transformation of subjects in relation to their realities, potentially leading to critical, reflective, and self-conscious development. Participants engage in play activities with the intention to delve into reality, discuss theoretical possibilities, and study different opportunities to deal with the issues under consideration from diverse perspectives in various contexts, leading to the construction of new possibilities for action, or the viable unheard-of.

The methodology employed emphasizes a critical collaborative research approach (Magalhães, 2011) centered on amplifying the voices of all participants and communities while managing ethical considerations and data production in alignment with the Sustainable Development Goals. Activities are outlined systematically, spanning periods for collective immersion in reality, discussion of needs and objects, reflection on possible activities, and planning and implementation of intervention projects. The project's organization into various phases – such as exploring collaboration opportunities, planning meetings, experiences to explore themes relevant to each collective, performance presentations, pilot actions with communities, deepening theoretical understanding, and evaluating activities – reflects a comprehensive, year-long process.

The project heralds the collaborative approach and the utilization of big and small group discussions within Vygotsky's social-historical cultural framework. It highlights the multiplication of individual power and collaborative forces, emphasizing theoretical discussions from a decolonial standpoint and the importance of shared understanding and collective knowledge construction. The project underscores the significance of time, space, and a trusting environment in facilitating meaningful and transformative experiences. It also explores the use of multimedia resources, play activities, and arts to foster collaborative meaning-making.

This emphasis on creating a supportive and inclusive atmosphere aligns with Vygotsky's focus on shared understanding and collective knowledge construction and reflects the project's decolonial perspective. Overall, the project's collaborative approach and emphasis on a supportive environment have contributed to its success in fostering transformative experiences and encouraging meaningful participation and idea-sharing across all ages.

In sum, the COLINA project endeavors to create a space for collective engagement and transformative research, empowering marginalized communities and fostering intervention-based approaches. It has

involved diverse groups from different cultural backgrounds and age ranges. The use of multimedia tools, art-based activities, and theoretical discussions has empowered participants, addressed societal issues, and promoted equity and sustainability within communities.

The first-year findings offer a comprehensive understanding of tools and approaches for engaged and transformative research, contributing significantly to the discourse on community-based research and social transformation. The results underscore the project's pivotal role in empowering marginalized communities and promoting collaborative, intervention-based approaches. The paper's exploration of the project's methodology, theoretical underpinnings, and practical implications further enriches the understanding of these efforts, offering important contributions to the broader discourse on community-based research and its potential impact on creating a more just, equitable, and ecologically sustainable society.

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451 ONLINE - Unlocking transformative inclusion through early years play: The lens of cultural-historical theory

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Presentation: Paper presentation (presented digitally from elsewhere) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: Inclusion Early Years Play Cultural-Historical Theory

SHORT ABSTRACT

From an early age, children develop an awareness of diversity and inclusion, which helps them understand where they belong (Cologon, 2014; Magennis & Richardson, 2020). Early years institutions significantly promote a culture of equality, tolerance, and diversity (Keles et al., 2021). Transformative inclusion is a term that provides a clear definition of inclusion for all to eliminate diverse interpretations, which is recommended for adoption in early years settings worldwide due to its holistic aspects (Rahman et al., 2023). Cultural–historical theory creates a holistic prospect for children’s learning and development—individually, socially, and institutionally (Hedegaard & Fleer, 2008). The concept of transformative inclusion, supported by cultural-historical theory, requires further investigation considering its implications and impacts.

The aim of this narrative review is to apply the lens of cultural-historical theory to understand transformative inclusion and its practices. Children who are hindered in their development by a disability are not less developed than their peers but rather have developed in a different way (Vygotsky, 1993). Play is a developmental activity that can target a child's needs, interests, and desires, regardless of differences (Vygotsky, 1966). Additionally, development is propelled by a specific type of social interaction known as neoformation (Vygotsky, 1998). Vygotsky (1993) mediates diverse individuals into mainstream society using cultural tools to unlock their potential during everyday activities and play. This study introduces a transformative inclusion pedagogical model, using cultural-historical theory, utilising a conceptual framework that incorporates play to promote the holistic development of children, ensuring inclusion for all.

EXTENDED SUMMARY

Background

To ensure everyone has an equal opportunity to learn and grow, it is essential to incorporate inclusion in education from the early stages of childhood development (Magennis & Richardson, 2020). This period is crucial in establishing fundamental values and principles and providing equal opportunities (Cologon, 2014). Inclusive educational and cultural opportunities are vital for creating supportive and inclusive learning environments for all children from an early age. However, there is a need for further research and exploration to achieve inclusion for all in early childhood education.

Transformative inclusion acknowledges and respects individual differences in academic, social, psychological, and cultural inclusion, regardless of age, gender, disability, race, culture, origin, ethnicity, diversity, abilities, background, or socioeconomic status (Rahman et al., 2023). Play is the

primary activity during early childhood, followed by conscious learning. Vygotsky's theory (1967, 1978, 1993, 1994, 1998) emphasises the role of culture, environment, age, mediation, knowledgeable individuals, and social interaction in a child's learning and play, using culturally specific methods to cultivate the potential of the whole person.

Aims

This study utilises the cultural-historical theory (CHT) to explore transformative inclusion through a narrative review. It presents a pedagogical model based on play activities involving children from diverse backgrounds. The aim of the model is to achieve transformative inclusion, focusing on the holistic development of children.

Methods

Between August 2023 and December 2023, an in-depth analysis of existing literature was conducted with the aim of producing a comprehensive narrative review. The review sought to critically examine the available literature, identifying gaps in current knowledge and highlighting potential avenues for further research. Transformative inclusion is a term that provides a clear definition of inclusion to eliminate diverse interpretations, which is recommended for adoption in early years settings worldwide (Rahman et al., 2023). Transformative inclusion in the early years requires a holistic approach. Cultural–historical theory creates a holistic prospect for children’s learning and development—individually, socially, and institutionally (Hedegaard & Flear, 2008). Moreover, Vygotsky's theory emphasises the role of culture, environment, age, mediation, knowledgeable individual and social interaction in a child's learning and play, using culturally specific methods to cultivate the potential of the whole person. Therefore, cultural-historical theory can provide a way forward in achieving transformative inclusion.

Results

After the review, a conceptual framework was developed mapping the relevant concepts of cultural-historical theory to practice transformative inclusion. The conceptual framework incorporates four components to achieve transformative inclusion based on CHT. Creating an inclusive learning environment during children's playtime ensures that the role of culture and social situations, mediators, zone of proximal development and the process of *Perezhivanie* are interconnected. For example, achieving transformative inclusion in children's learning requires four components using the lens of cultural-historical theory. The first component is creating an inclusive playtime environment that values and acknowledges culture and social situations (role of culture and social situation). Secondly, the mediators must be inclusive, including human and symbolic mediators. Thirdly, cultural tools should be included and create a zone of proximal development for inclusion (zone for transformative inclusion). These three components contribute to children feeling included, accepted, and valued for their diverse individualities, including academic, social, psychological, and cultural inclusion, regardless of their age, gender, disability, race, culture, origin, ethnicity, diversity, abilities, backgrounds, or socio-economic status. A positive learning environment ensures the holistic development of all children, including *Perezhivanie*.

Conclusions

The Hi-5 pedagogical model has been proposed to help educators foster inclusion in the early years. This model aligns with the conceptual framework and The Early Years Learning Framework Planning Cycle developed by the Australian Government Department of Education in 2022.

How interaction with the participants is planned

Use of Interactive PowerPoint slides and verbal explanations.

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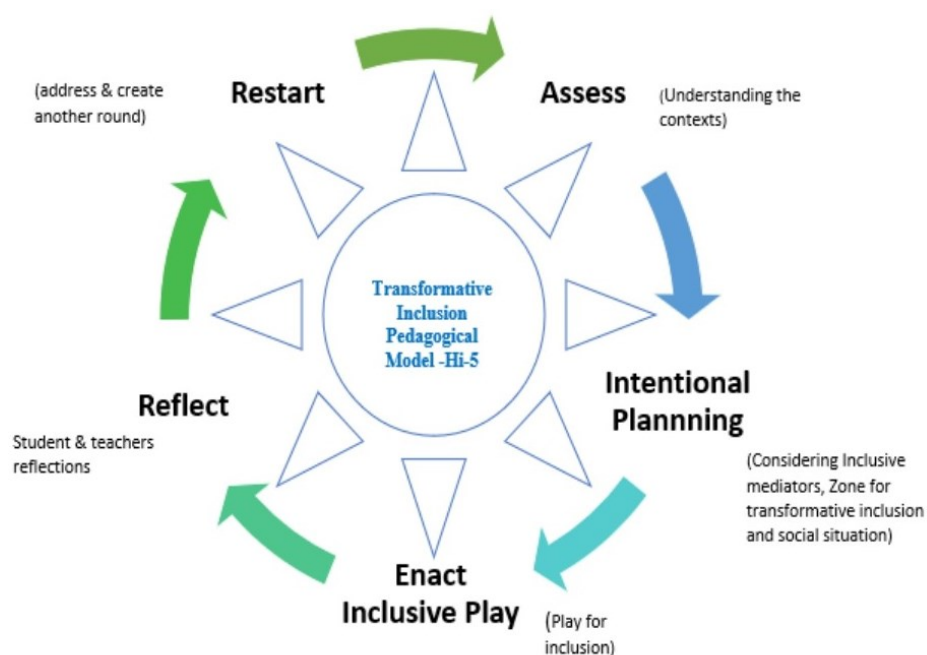
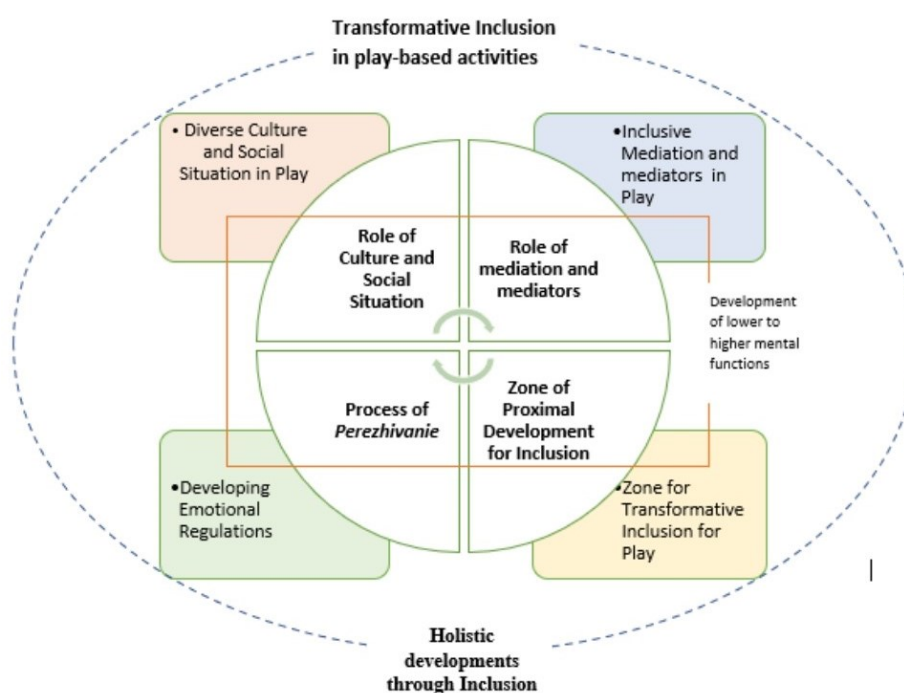


Figure: Transformative Inclusion Pedagogical Model-Hi-5



Figure_ Conceptualizing transformative inclusion within the play using cultural-historical lens



459 University outreach programs: Bridging academia and society to foster transformative aging practices

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: ageism intergenerational collaboration rich communicative environments

SHORT ABSTRACT

Outreach programs serve historically as platforms for educational, cultural, and scientific exchanges, bridging teaching and research while fostering transformative relationships between academia and society (FORPROEX, 2012). Although warranting greater institutional recognition within public universities, outreach endeavors promoting dialogical and ethically responsible experiences (Bakhtin, 2010; Mazuchelli & Oliveira, 2023) and *rich communicative environments*, which align meaningful complexity, agency and experiential optimization (Hengst, Duff, & Jones, 2019), contribute to cultivating professional practices dedicated to challenging oppression, injustice, and prejudice. Based on group discussions with participants and field notes, this paper explores the initiatives undertaken in two Brazilian university outreach projects that engage with the challenges of older people, who are historically relegated to positions of inferiority and subjected to discrimination and violence. The first project centers around group sessions featuring remembering as an activity (Leontiev, 1965) and is spearheaded by undergraduate Psychology students and older adults at a Basic Health Unit. The second, led by undergraduate and graduate Speech Therapy and Linguistics students, healthcare, and education professionals, operates at the Observatory of Ageism, a project that emerged as a response to the escalation of violence during the COVID-19 pandemic. The presentation aims to discuss and underscore the potency of these encounters in (re)shaping perceptions of ag(e)ing among older adults, students, and healthcare and education professionals; the relevance of intergenerational collaboration in combating ageism and challenging normative discourses on ag(e)ing; and the importance of fostering rich communicative environments for promoting health, well-being, effecting transformative change amidst situations of oppression.

EXTENDED SUMMARY

In Brazil, 32 million people, comprising 15.6% of the population, are aged 60 or older, according to IBGE (2023). Despite legislative efforts to address the needs of this demographic, such as the Statute of Older People in Brazil (2003) and the National Health Policy for Older People (2006), the implementation of public policies safeguarding their rights remains sluggish (Torres et al., 2020). Alongside inadequate state support, Brazilian older people are historically relegated to positions of inferiority and subjected to discrimination and violence. This is evidenced, for instance, in social media discourse (Mazuchelli, 2019; Mazuchelli et al., 2021) that reflects the perpetuation of negative perceptions about ag(e)ing, as well as a 38% surge in reports of mistreatment, aggression, neglect, psychological abuse, and financial exploitation (Agência Câmara de Notícias, 2023).

Given this reality of ag(e)ing in Brazil, this paper explores the initiatives undertaken in two Brazilian university outreach projects that engage with the challenges of ag(e)ing (a term coined to express such challenges and complexities and simultaneously index age, aging, and aged; Mazuchelli, 2019) in the country by including, valuing and improving interactions between undergraduate and graduate students, older adults, and healthcare and education practitioners. Outreach programs serve historically as platforms for educational, cultural, and scientific exchanges, bridging teaching and research while fostering transformative relationships between academia and society (FORPROEX, 2012). Although these initiatives warrant greater institutional recognition within public universities, outreach endeavors promoting dialogical and ethically responsible experiences (Bakhtin, 2010; Mazuchelli & Oliveira, 2023) and *rich communicative environments*, which align meaningful complexity, agency, and experiential optimization (Hengst, Duff, & Jones, 2019), contribute to cultivating professional practices dedicated to challenging oppression, injustice, and prejudice. The first project, spearheaded by undergraduate Psychology students and older adults at a Basic Health Unit, centers around fortnightly group sessions featuring storytelling. Rooted in the understanding that human development is shaped by activities (Leontiev, 1965) and recognizing remembering as a prominent activity across the lifespan, the project aims to revive and refine the act of remembering, echoing Bosi's words that "A memory is a rough diamond that needs to be polished by the spirit" (Bosi, 1994, p. 81). Through its meetings, recollections, and storytelling, participants are encouraged to reflect on and construct meanings and senses (Vygotsky, 2010) of their trajectories and ag(e)ing experiences.

The second outreach project, led by undergraduate and graduate Speech Therapy and Linguistics students, healthcare, and education professionals, operates at the Observatory of Ageism. This project emerged in response to the wave of disrespect, disdain, and violence against older people during the COVID-19 pandemic in Brazil. The observatory's initiatives revolve around three core components: (i) monitoring media coverage focusing on ag(e)ing and ageism, with an emphasis on investigating, reflecting upon, and analyzing discursive patterns; (ii) disseminating knowledge about ag(e)ing and ageism; and (iii) conducting anti-ageism training activities, including workshops and discussion groups held both in-person and remotely. These activities, planned and discussed biweekly through virtual synchronous meetings on the Google Meet platform, aim to help participants identify ageism and discriminatory practices, expand their understanding of ag(e)ing issues and advocacy, and enhance their professional practices by broadening their anti-ageist repertoire (Oliveira et al., 2023). Based on group discussions with participants and field notes, the paper discusses the process and challenges for fostering interactions and promoting transformative educational encounters (hooks, 1994; Liberali, 2022; Stetsenko, 2017) between university students, older adults, and healthcare and education practitioners.

Analyses of the two projects underscore the potency of (a) meaning-making processes in (re)shaping perceptions of ag(e)ing among older adults, students, and healthcare and education professionals; (b) intergenerational collaboration in combating ageism and challenging normative discourses on ag(e)ing; and (c) fostering social interactions and connections crucial for promoting health and well-being. Finally, the discussion, delivered with a slide presentation and welcoming to the audience's inquiries, emphasizes how university outreach programs, intertwined with teaching and research, can facilitate knowledge development and exchange, as well as professional training pivotal in effecting transformative change amidst situations of oppression.

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462 ONLINE - Transgressive Language Teaching Classes in a Brazilian Public School

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Presentation: Paper presentation (presented digitally from elsewhere) (PhD Day)

Theme: Meaningful education

Keywords: Collectivuality School Social Architectonic Blended Learning

SHORT ABSTRACT

Considering the importance of education for social transformation, the general objective of this research is to expand the concept of blended education (online/offline) with the contributions of the Sociocultural-Historical Theory (VYGOTSKY, 2007, 2009), contemplating neo-vygotskian concepts, such as Collectivuality (STETSENKO, 2022, 2023), which deals with the dialectical relationship between the collective and the individual, and School Social Architectonic (TANZI NETO, 2016, 2017, 2019), which seeks to understand how social relations and cultural artifacts influence the formation of consciousness in school space, to provide English language learning experiences aimed at our Collectivual development. Thus, this research, methodologically grounded on an ethnographic case study (PENNYCOOK, 2007, SARMENTO, 2011), initially developed a didactic unit for a group of 10th graders in a Brazilian public school, in 2023. The topic was Mental Health, and the unit was based on the pedagogical concepts of Station Rotation and Fishbowl from the blended learning theory (BACICH; TANZI NETO; TREVISANI, 2015). The preliminary results show that these two concepts helped in the reorganization of our School Social Architectonic and the development of students' Collectivuality once they were positioned in more active and dialogical roles in the classroom while fostering their engagement about mental health issues and the importance of students' well-being in our schools.

EXTENDED SUMMARY

We live in a world where individuals face persistent threats of mortality and societal segregation based on attributes such as race, ethnicity, gender, and economic status. Concurrently, societies confront the consequences of health and environmental crises, wars, politicians who foster social injustices, and hostility towards education and science, among other concerns. Considering the importance of education for social transformation, the general objective of this research is to expand the concept of blended education (online/offline) with the contributions of the Sociocultural-Historical Theory (VIGOTSKY, 2007, 2009), contemplating neo-vygotskian concepts, such as Collectivuality (STETSENKO, 2022, 2023), which deals with the dialectical relationship between the collective and the individual, and School Social Architectonic (TANZI NETO, 2016, 2017, 2019), which seeks to understand how social relations and cultural artifacts influence the formation of consciousness in school space. According to Vygotsky, our development is essentially social, and therefore, depends on our relationships within and with the world. The traditional model of education, which Freire (2021) called the banking model of education, seeks to homogenize the

collective in the pursuit of maintaining the *status quo* through its lined-up desks, colonial artifacts, and hierarchically structured classes, centered around the teacher and the content transmitted by them. Thus, there is a need to question the existing relations and conditions that characterize and foster such a model to either transform or abolish them while developing other forms to improve everyone's lives (ALLMAN, 2007). For this, students' voices must be heard and in dialogue to build what bell hooks (2017) called a learning community. My dissertation is, among my strong will for social transformation, a way to honor my cousin Selena and teachers Maria, Cybelle, and Flávia, who were killed in two sequential school shootings in Espírito Santo, Brazil, in 2022. This tragedy was caused by a neo-Nazi 17-year-old who used two guns, one of which was his father's, a state police officer. It was found by the Brazilian federal police that the killer was part of supremacist online groups on Telegram, which shows that it is urgent and fundamental to act regarding legal and safety issues alongside educational issues. In this context, I see my praxis as my main resource towards the development of a more just, fraternal, and peaceful world. Methodologically, this research falls within the critical paradigm, which implies the need to adopt moral and critical stances to try to transform a world structured in inequality (PENNYCOOK, 2007). It is composed of a literature review (CRESWELL, 2009) focused on the expansion of the concept of blended education and an ethnographic case study (PENNYCOOK, 2007, SARMENTO, 2011) that was carried out with a group of 10th graders who took my English language classes in a Brazilian public school, in 2023. Some of the data collected include pictures of students working, their creations, and field notes. Going through a pandemic and traumatic school shootings and threats had a great impact on our lives. Consequently, in the past few years, ambulances were often called to rescue students with mental health issues. Taking into consideration the aforementioned concepts, English as a Lingua Franca (BRASIL, 2018), our context needs, and others, I developed a didactic unit on Mental Health based on the pedagogical concepts of Station Rotation and Fishbowl from the blended learning theory (BACICH; TANZI NETO; TREVISANI, 2015). The rotation contained three stations, namely: 1. Warming messages station – students had to create messages to warm our school community's hearts by spreading them around the school through QR codes or tricking people into reading the codes; 2. Yellow protest station – through the assigned readings, their internet searches, discussions, and previous experiences, students had to create protest posters to raise awareness regarding mental health issues; and 3. Fire research station – also through the assigned readings, their internet searches, discussions, and previous experiences, students had to add questions to a Google Form to elucidate information regarding their classmates' well-being, ways to improve our school environment, and other information they considered important. The data collected through this form was discussed in a Fishbowl session, which comprised a moderator and two note-takers, along with the standard roles of speakers and observers. The moderator was responsible for guiding the discussion through the questions and answers obtained from the form, while the note-takers were responsible for recording pertinent ideas for the development of their 2024 school wellness proposal to be sent to our school superiors. The preliminary results show that these two concepts helped with the reorganization of our School Social Architectonic and the development of the students' Collectivuality once they were positioned in more active and dialogical roles in the classroom while fostering their engagement about mental health issues and the importance of students' well-being in our schools. The presentation will happen through PowerPoint with some questions to the audience, followed by an open discussion.

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Fire research station



Protest poster station



Warming messages station



Fishbowl



464 Education, Inclusion and Mental Health from the Perspective of González Rey's Subjectivity

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Presentation: Symposium (90 minutes)

Theme: Other CHAT-related topic

Keywords: Subjectivity Education Mental Health Development of Subjectivity

SHORT ABSTRACT

This symposium is based on the scientific perspective created by González Rey based on the articulation between Theory of Subjectivity, Qualitative Epistemology and Interpretative Constructive Methodology. The main objective is to discuss, from a transversal perspective oriented by González Rey's perspective of subjectivity, some scientific and professional experiences that involve educational scenarios, processes of subjective development and mental health. To achieve this goal, the symposium begins with a paper that addresses critical issues in the inclusion of school students, through the recursive theoretical interface between Funds of Identity and the Theory of Subjectivity. Next, the subjective processes involved in the training of a teacher are discussed, highlighting their ability to develop new ways of being an educator in their work with children at school. Subsequently, a work discusses subjective processes related to university students' mental health, focusing on the elaboration of principles and educational strategies that favor individual and social development in this context. And finally, it ends with a presentation focused on to illustrate how the constructive-interpretative methodology can favor subjective development processes in university students who experience high suffering, enabling the emergence of alternative ways of life, despite various situations of suffering. This symposium aims to attract colleagues from diverse perspectives to discuss the heuristic value of subjectivity and its contributions to the intertwined field between education, mental health, and inclusion.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

A social justice scenario: Experiences from the Funds of Identity and the Theory of Subjectivity in education.

The 21st century school is based on principles such as participation, shared construction – us– and the social justice practices. In this sense, a school based on social justice practices incorporates educational practices that are sensitive to the learning scenarios of the students, especially the students with the greatest need for educational support in a co-responsible way. From the framework of the Funds of Identity and the Theory of Subjectivity from a Cultural-Historical standpoint we combat structural inequalities, power relations and the perspective of the deficit in education as dominant discourse proposing holistic and integral terms. The Funds of Identity offers educational transactions that allow learners to self-express and self-define through the elaboration and reflection

of the educational practices and products they built. The theory of subjectivity highlights the importance of the subjective involvement -senses and configurations- of the learner in what they learn that implies a development that does not come from outside, but is the result of the generative character expressed by the subject but that has its origin in the multiple sociocultural experiences lived. Following two practical experiences are detailed that seek to recognize and give voice to pedagogies that advance towards proposals for inclusion and educational redistribution in school educational spaces in a broad sense.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

The educational context has experienced notable changes in recent years. However, the changes experienced have not always taken into consideration the diversity that we can find in classrooms. Furthermore, hegemonic practices and discourses have frequently been established in schools. From the above, it is necessary to move towards proposals that claim the school institution as an educational context that actively incorporates the discourses, relationships, cultural and educational practices of all learners.

In line with the development of socially just educational programs and practices, the theoretical-methodological approaches of Esteban-Guitart's Funds of Identity and González Rey's Theory of Subjectivity are presented below.

Funds of Identity are a set of resources –geographical spaces, cultural artifacts, significant social relationships, sociocultural practices, social institutions, among others– that have a special meaning for the student since they contribute to defining themselves in the way they really matter to students (Esteban-Guitart, 2021; Esteban-Guitart & Moll, 2014). In this way, graphic, visual, narrative productions or materials that combine different formats can be examples of elaborations carried out by the learner in which relevant and especially significant aspects are expressed.

In turn, the theory of subjectivity (González Rey & Mitjans Martínez, 2017a; 2017b) focuses on the subjective involvement of the learner. That is, if there is no involvement on the part of the learner in the learning process, there is no learning itself. For the subject to constitute itself as a learning subject, it is necessary to consider the senses and subjective configurations in the process of development of the person. These meanings and configurations are woven throughout the student's life experience. Based on the above, the involvement in learning does not come from outside, but is the result of the generative character itself expressed in the subjective configuration of learning. The subjective senses – flow of symbolic-emotional units – and the subjective configurations – set of subjective meanings – make possible the uniqueness and novelty in the learning processes of the learners.

The two educational experiences are mentioned below:

The FICAB project (Esteban Guitart et al., 2015; Subero, 2015), based on the idea of school in a broad sense, was carried out in Barcelona – Spain – with the aim of providing support to young people between 15 and 18 years of age. age to promote socialization and personalization in development and learning, especially in the most vulnerable population. Under this premise, programs based on identity funds were carried out with the objective of articulating different teaching and learning contexts where young people could experience, support, contextualize, extend and redefine school learning.

To do this, 9 sessions of 60 minutes were designed using methodologies and techniques based on identity and autobiographical tools. Some of these techniques were the identity song, the learning spiral, the identity comic, the testimonial activity and the transformative drawing.

From the perspective of subjectivity, the work of Bezerra (2014) with children in the school context stands out. Alan's case is set out below. Alan was a student who had a diagnosis of Attention Deficit Hyperactivity Disorder – ADHD – and who displayed behaviors in the classroom that were defined by the teachers as “manipulative and rebellious.”

The researcher intervened in the classroom context, influencing a deep communication relationship. From the communicative relationship, it was understood that it would be possible to understand the senses and subjective configurations of the student in order to change possible behaviors in the classroom and their involvement in the learning processes. In relation to Alan, the researcher, leaving aside the categorization of the disorder, proposed playful situations in the classroom that were supported by cognitive-intellectual operations to improve his behavior and attitude towards learning. In closing, both the identity funds and the theory of subjectivity claim the socially just nature of the proposal since their purpose is to address structural and historical inequalities in school by claiming the emotional, the attribution of meaning, identity and subjectivity as a framework for development.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Pedagogical strategies in becoming a teacher: from formal techniques to subjective productions.

This work seeks to comprehend aspects of becoming a teacher, the unique experience of a recently graduated pedagogue, Bea, based on her involvement in preparing her monograph, in which I acted as her supervisor. Most of our pedagogy students feel distressed, worried, and challenged in producing an authorial text and presenting the study to the panel of evaluating professors.

Reflections presented in this study are based on the theoretical-epistemological approach of Subjectivity from a Cultural-Historical Perspective, emphasizing the concept of subjective senses.

Bea's monograph can be characterized as a case study organized from her experiences of four months of individual pedagogical care with an 8-year-old girl who was not yet literate despite being in the 2nd year of Elementary School 1. Throughout this brief period, the value of the experiences that the pedagogical work had for Bea allowed the interpretative construction of her transformation in a different teacher, with different ways of planning and a completely distinct way of being in the context of teaching. The whole process highlights and articulates two dimensions that characterize the specificity of teaching professionalism: the relationship between theoretical aspects and practical activity and the emergent value that the interrelationship between Bea and the child had to the process of learning and development for both.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

This work seeks to comprehend aspects of becoming a teacher, the unique experience of a recently graduated pedagogue, Bea, based on her involvement in preparing her monograph (named by the acronym TCC), in which I acted as her advisor.

Generally, this is a completely new activity for most of our pedagogy students, who feel distressed, worried, and challenged in producing an authorial text and presenting the study to the panel of evaluating professors.

Bea's training in Pedagogy was interrupted by the pandemic period, making it necessary to complete her last 5 semesters of the course via remote teaching. In this way, preparing the TCC became even more challenging for her.

The reflections presented in this study are based on the theoretical-epistemological approach of Subjectivity from a Cultural-Historical Perspective, emphasizing theoretical concepts as subjective senses generated by Bea, acting as subject of her process, throughout the period of preparation of her completion of course work. The constructive-interpretative methodology was derived from the Qualitative Epistemology, characterized by its three principles.

Her words about being a teacher can be considered as an indicator of her involvement with teaching professionalism that participates in her subjective configuration: *"Studying pedagogy was not always my first option, but the moment it appeared, it made me realize that there are many challenges: seeing how undervalued the profession is awakens fear and many desires, but that's where art lives. And you ask me, "What do you mean?" The art of not always having control and not knowing what might happen in the future. That's the best part: being a teacher means dealing with difficulties, desires, and adversities and always trying to improve and move forward with what's best, which is learning by teaching."*

Bea's monograph can be characterized as a case study organized from her experience of four months of individual pedagogical teaching with an 8-year-old girl who was not yet literate despite being in the 2nd year of Elementary School 1.

Throughout this brief period, the value of the experiences that the pedagogical work had for Bea allowed the interpretative construction of her development as a different teacher with different ways of planning and a completely distinct way of being in the context of teaching. As a subject acting in both contexts, i.e., as a student writing her TCC and as a teacher working with the child, Bea could understand how to articulate, in her pedagogical strategies, theoretical and practical dimensions, particularly concerning the value of playing in literacy work.

The transformation of the impersonal technique into meaningful activities for both, Bea and the girl, enabled changes from formalized planning and pedagogical strategies prepared based only on Bea's intentional concern, "I have to teach the girl to read and write," to a new understanding of pedagogical strategies that considered interests, desires, and motivations of the child who suffered from not yet knowing how to read and write like everyone in your class.

The process highlights and articulates these two dimensions that characterize the specificity of teaching professionalism: the relationship between theoretical aspects and practical activity and the emergent value that the interrelationship between Bea and the child had to the process of learning and development for both. In short, from a merely technical approach to action based on learning as a subjective production.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Subjectivity, education and mental health: challenges and possibilities in situations of subjective suffering among university students

Different expressions of subjective suffering have been part of the daily life of educational institutions. Among them, students have expressed anxiety, depression, panic, often leading to self-mutilation and suicide. A variety of processes are related to these situations, such as frustrations of different kinds, academic saturation, poor conditions of study and work, relational challenges, issues

of gender, race, violence, as well as a context that permanently encourages competition. These situations of subjective suffering culminate in several problems for the quality of educational processes at different levels of education, in addition to taking the lives of several individuals. The current study aims to understand and discuss subjective processes related to university students' mental health, focusing on the elaboration of principles and educational strategies that favor individual and social development in this context. González Rey's Theory of Subjectivity in a cultural-historical perspective, Qualitative Epistemology and Constructive-Interpretive Methodology were used, respectively, as theoretical, epistemological and methodological references. This study emphasizes a case study of one student, who has been going through severe processes of subjective suffering. The results advance on the comprehension of the complexity of subjective suffering conditions in higher education institutions, as well as support the generation of alternatives to these conditions with a proposal of principles and strategies for improving the educational work at individual, and institutional level.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

Different expressions of subjective suffering have been part of the daily life of educational institutions. Among them, students have expressed anxiety, depression, panic, often leading to self-mutilation and suicide. A variety of processes are related to these situations, such as frustrations of different kinds, academic saturation, poor conditions of study and work, relational challenges, issues of gender, race, violence, as well as a context that permanently encourages competition. These situations of subjective suffering culminate in several problems for the quality of educational processes at different levels of education, in addition to taking the lives of several individuals. This situation demands further research capable of understanding the complexity of these suffering processes and supporting alternative educational strategies, with a view to favoring human development and, consequently, learning processes. The focus on the subjective dimension of these suffering processes has not been a strong point of the scientific production in the area and, even when considered, it has been little studied from a complex perspective.

Aims

The current study aims to understand and discuss subjective processes related to university students' mental health, focusing on the elaboration of principles and educational strategies that favor individual and social development in this context.

Methods

González Rey's Theory of Subjectivity in a cultural-historical perspective, Qualitative Epistemology and Constructive-Interpretive Methodology were used, respectively, as theoretical, epistemological and methodological references. This perspective emphasizes the understanding of human processes based on the proposition of a new ontology: *the symbolic-emotional unit*, which defines the qualitative specificity of the subjective phenomenon within human culture. More specifically, this study emphasizes a case study of one student of Pedagogy degree, who has been going through serious processes of subjective suffering. The focus is on the dialogical process of a teacher-student relationship, which developed from a suicide attempt by the student. The research instruments included conversational dynamics, autobiographical dialogues, and writing essays. From this research perspective, the construction of outcomes takes place simultaneously with the research field

experience, breaking with the historical dissociation between “data collection” and “data analysis”, as well as between research and professional action.

Results

The results advance on the comprehension of the complexity of subjective suffering conditions in higher education institutions, as well as support the generation of alternatives to these conditions with a proposal of principles and strategies for improving the educational work at individual, and institutional level. The dialogical process with the participant highlighted the complex articulation between subjectivity, education and mental health. Emphasis was given to the importance of dialogue in situations of subjective suffering, based on educational actions oriented towards subjective development, marked, among other processes, by the demystification of mental health, by sincerity and by an authentic interest in the other.

Conclusions

A possible conclusion to be reached from this process is that it is possible to build educational actions supported by dialogue, respect for the singularity of the other, and the promotion of subjective development in situations of severe mental health suffering despite the very visible limitations of work conditions in higher education.

How interaction with the participants is planned

Interaction with the participants is planned at the end of the presentation, and mobilized by a set of questions related to the discussed topic.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Mental health and subjective development in university students in Brazil

The present work addresses the articulation between mental health and subjective development of students from a public federal university in northern Brazil, based on Qualitative Epistemology, the Constructive-Interpretative Methodology and the Theory of Subjectivity of González Rey (1997, 2002, 2005, 2019a, 2019b; González Rey & Mitjáns Martínez, 2016; 2017a; 2017b; 2019; González Rey & Patiño, 2017). This paper defends a thesis: the unity between research and professional practice, based on a constructive-interpretative methodology for the study and promotion of subjectivity, has qualitative growths that are potentially reflected in the development of the people involved in this process (Goulart; González Rey & Patino, 2019). To defend this bet, we will present the way in which the constructive-interpretative methodology operates in articulation with the principles of Qualitative Epistemology: the constructive-interpretative character of knowledge; dialogicity as a form of communication; and singularity as a legitimate source of scientific-professional knowledge (Patiño Torres & Goulart, 2016; 2020). Next, a case developed by the author within his work as a teacher and researcher will be presented, from which it will be illustrated how the constructive-interpretative methodology can favor processes of singularization of students' mental health, a process that is expressed in the emergence of alternative ways of life, despite various situations of suffering. This work, aimed at professors, researchers, professionals and students from different areas of knowledge, defends the subjective character of university education and experience.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Background

In my career as a university professor, I have gone through several experiences that have challenged my way of conceiving and acting since my role as a trainer of psychology students. One of the biggest challenges has been the increase in cases of subjective suffering of people who undertake the university trajectory, a situation expressed even with suicide attempts or actual suicide. Faced with this type of experiences that seriously affect mental health, we created the Program for the Promotion of Life and Mental Health + Life, with the objective of offering university students an interdisciplinary approach that would allow an alternative accompaniment to the situation of suffering experienced, from a perspective that contemplated the subjective complexity that graduating from a university entails.

Aims

The main objective of this paper is to highlight the subjective nature that underlies the suffering of university students, as well as to present subjectivity as a theoretical, epistemological and methodological perspective of heuristic value to understand and promote subjective development in people whose mental health is affected during their educational trajectory.

Methods

This work is based on the Constructive-Interpretative Methodology, in articulation with the Theory of Subjectivity and the Qualitative Epistemology of González Rey, as a perspective that allows to understand and address situations of high subjective suffering in university students. Assuming dialogicity as an epistemological principle and methodological resource within the fieldwork, we developed an instrumental craft that allowed us to understand the complexity of the subjective dimension of the suffering experienced by students who are trained at the university. Among the instruments were: dialogical conferences; conversational dynamics and written reflections. During the methodological process, the motivated commitment of all participants was fundamental, derived from a close and genuine relationship between researcher/professor and students. Likewise, the constructive-interpretative nature of our perspective permitted us to construct indicators and hypotheses that guided actions with students, which allowed us to generate theoretical models with plausible explanations about the phenomenon of subjective university suffering, as well as the generation of educational practices favoring the subjective development of the participants.

Results

Addressing mental health in the trajectory of university students, from a perspective that emphasizes subjective processes, implies a great challenge in the face of the educational tradition whose agenda has been focused on symbolic-intellectual processes. The main result of this work is to show how the suffering of university students, often invisible in educational institutions, has an emotional and symbolic genesis whose wear and tear leads to depressive experiences, panic and, in some cases, suicides or suicide attempts. Our scientific and professional experience has allowed us to create methodological situations, of a dialogic nature, that favored the subjective development of people in suffering, through the creation of alternative paths in the face of the possibility of ending one's own existence.

Conclusions

González Rey's theoretical, epistemological and methodological perspective has allowed us an alternative vision of heuristic value to understand subjective suffering in the university experience, as

well as has stimulated us to be creative and imaginative in the generation of educational strategies that favor the development of people. Subjective suffering, from our conception of the world, is not only a negative and fatalistic factor. On the contrary, and from our involvement, suffering can also be a possibility of emergence of human subjectivity where life can be projected.

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465 ONLINE - Play-based pedagogical model for STEM learning in the early years: A cultural-historical perspective

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Play-based pedagogy Cultural-historical theory STEM Education Meaningful education in pre-primary through higher

SHORT ABSTRACT

Researchers recommend creating STEM learning opportunities through play to grow children's STEM skills, such as critical thinking, problem-solving, and decision-making from the early years (Fleer, 2022; Sikder et al., 2023). However, there are no specific strategies for educators to implement the STEM learning process for children in early childhood education settings, and this paper will fill the gap. This paper analysed around 3 hours of video data of children's (3 to 5 years of age) STEM-based play (rocket building), including teacher's interviews, storybook reading, and researcher's observation notes using the dialectical interactive approach (Hedegaard & Fleer, 2008) and applied a 4P (Plan, Play, Product and Pedagogical reflection) phases model as an analytical framework (Sikder, 2024). The 4P phases model has been developed using cultural-historical theory in teaching STEM education in the play-based context (Sikder, 2024). The model considers the dynamic process of affect and intellect for children's conceptual learning (Vygotsky, 1993) through play. According to the model, educators' active role as human mediators is considered to support children's understanding of symbolic mediators to unpack their development of higher mental function (e.g., concept formation) (Kozulin 2003; Veresov, 2010; Vygotsky, 1997). It is argued that the rocket-building process, as part of STEM-based play, supports educators to showcase assessment strategies (formative, summative and children's self-learning) for children's conceptual learning process and empowers children's rights and perspectives in play. The findings provide STEM-based teaching strategies through play in line with the Early Years Learning Framework (AGDE, 2022) in the early childhood context.

EXTENDED SUMMARY

Background

The process of developing children's STEM learning needs to start in early years of their life to develop their mental habits of reasoning such as critical thinking and problem-solving skills (MacDonald et al., 2020). Children's learning process has a significant impact on developing their STEM skills from early childhood, and cultural-historical theory advocates understanding the process (Vygotsky, 1997a). However, there are no specific guidelines for educators in implementing STEM-based education in the play-based context in early childhood education.

Aims

This paper unpacks the specific strategies that early childhood educators could apply in teaching STEM-based education through play-based settings in which children are motivated to learn, and how this will have a long-term positive impact on their future STEM learning.

Methods

The project has employed a cultural-historical research methodology in which children's development is viewed as the combination of biological, social, and cultural development of behaviour (Vygotsky, 1997a). Digital visual observation (Fleer & Ridgway, 2015) collected a total of around 26 hours of video data, representing 53 children aged from six weeks to 5 years over a period of 8 weeks in an early childhood centre in Australia for this project.

The video log was preliminarily analysed using the dialectical-interactive approach (Hedegaard & Fleer, 2008) for this project. A 4P phases model (Sikder, 2024) as an analytical framework was used to analyse around 3 hours of video data of children's (3 to 5 years of age) STEM-based play (rocket building), including teacher's interviews, children's storybook based on the rocket building process and researcher's observation notes. The 4P phases model for STEM learning has been developed based on the chosen culturally-valued play experience, which includes the educator's Planning phase, the educator's and children's Play based action phase, the expected Product (outcome) phase based on the children's learning, and the educator's Pedagogical reflection phase (Sikder, 2024).

Results

In the planning phase, educators brainstormed with the researchers about possible STEM play and decided on a rocket-building activity based on the children's interest from the recent news reports and investigations on asteroid activity. Children drew rockets on the whiteboards with the support of educators as part of the design of the rocket at the initial phase. Educators discussed with the children a plan to build a space rocket which would crash into the asteroid to make it change course and save the world. These children could imagine to be NASA aerospace engineers.

Educators provided available materials, space and intentional support to children and together, they built a space-rocket in the play-based action phase. Through the rocket-building process, children use everyday technologies such as foil, buttons, CDS, sticky tapes, sticks, and cardboard. Children experienced engineering skills, such as designing the rocket, construction, collaborative teamwork to solve problems, decision making, and finally, building the rocket, which fulfilled the children's and educators' aim of the planned visible outcome in the product phase. Children also learn small science concepts (Sikder & Fleer, 2015) such as identifying different rocket parts and the function of each of these parts (e.g., rockets require computers that are monitored by scientists), mathematics concepts such as shapes and sizes of the different parts of the rocket, and measurement of each of the individual body parts of the rocket. Children experience STEM language and skills, which are identified as invisible learning outcomes as part of the STEM learning process. To capture this play-based learning experience, the researchers developed a storybook named "Blu Gum Engineers Save The World" in collaboration with the teachers which is another visible product.

Throughout the rocket-building process, children experience formative learning processes (rocket and storybook) (AGDE, 2022) that visualise the learning journey to children, parents, families and other educators. In the pedagogical reflection phase, educators' interviews about the rocket-building process helped them evaluate the learning processes, what was beneficial for the children and educators, and what could be improved for a future experience in STEM-based learning experiences.

The educators' documented critical reflection of children's learning is evidence of summative assessment (AGDE, 2022). Finally, the educator reads the written story of this experience, with children in a reading group time where children share their thoughts about the story and their experience with the rocket-building journey. This reflection supports children's awareness and their contribution to the rocket-building play-based experience, thus utilising assessment 'as learning' (ADGE, 2022).

Conclusions

The 4P Phases model provides specific strategies for educators, specifically, the evidence-based visible outcomes of STEM-based play, as well as enhancing educators' confidence in teaching STEM concepts in a play-based context. Assessment strategies in the early years are still somewhat difficult for educators, and this paper provides an evidence-based storybook as part of the visible learning journey for children, which supports their future STEM skills.

How interaction with the participants is planned

Use of Interactive PowerPoint slides and verbal explanations.

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466 Teachers' Practice of Fostering Cognition in Content and Language Integrated Learning (CLIL)

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: teaching practice CLIL (Content and Language Integrated Learning) CHAT (Cultural-Historical Activity Theory) applying CHAT to analyse teaching practice

SHORT ABSTRACT

Theories suggest that developing learners' cognition is important for quality education, and this is especially crucial for teachers within contexts for Content and Language Integrated Learning (CLIL). CLIL focuses on *both* new subject knowledge and skills, *and* an additional language, such as Maths in Spanish (Coyle et al., 2010). This research aims to understand how teachers develop students' cognition within CLIL contexts, and moreover, how this is done differently based on teachers' dispositions towards *either* language *or* content. Bourdieu (1990) conceives of dispositions as the un- or pre-thought inclinations that guide practice, revealed in actions. In this study, activity theory provides the basis for systemic representations of teachers' situated practices from which these dispositions will be identified.

A multicase study of five CLIL teachers in Australian primary schools provides the data, collected through classroom observations and stimulated recall interviews. These data are organised to construct "activity systems" as analytic representations of each teacher's practice, to identify repetitions and tendencies that suggest a recurring emphasis on either content or language to classify the teachers' dispositions. Pedagogical moments of cognitive development are then identified based on Bloom's taxonomy and CLIL matrix. Comparative cross-case analysis will then build understanding of how a content/language disposition shapes instructional differences in developing cognition. Moreover, activity theory is used to generate situated accounts of teacher practice, which helps explain not only how these differences emerge across individual teachers, but also how their dispositions interact with their systemic conditions that led to those differences.

EXTENDED SUMMARY

Background

Content and Language Integrated Learning (CLIL) is a dual-focused educational approach that incorporates the learning of an additional *language* (typically not learners' first language) and non-language *content* (e.g., a subject) within one curriculum and emphasises *both* (Coyle et al., 2010; Marsh, 2002).

Cognition is especially important for CLIL classes, with the principle that knowledge can only be constructed by children based on their active thinking, and learning takes place when learners actively engage in language use and thinking activities (Coyle et al., 2010). CLIL therefore requires teachers to design cognitively engaging tasks for fostering learners' thinking, while they should also

balance the cognitive demand with the challenge of learning a new language (Coyle et al., 2010). Implementing these principles effectively in classroom instruction is crucial for high-quality CLIL education.

Existing research has extended our knowledge of cognition and CLIL based on teaching materials (Banegas & Tavella, 2021), linguistic discourse (Evnitskaya & Dalton-Puffer, 2020), and teachers' beliefs (Campillo-Ferrer et al., 2020). Yet there has been little systematic investigation into how teachers practise in the classroom to foster learners' cognition in the CLIL context. There are also no explanations provided for teachers' pedagogical behaviours, i.e., why they do in such ways and how their teaching practices have been shaped. The need for such knowledge has been pointed out by CLIL researchers (e.g., Fernández-Costales, 2023) and this knowledge could better guide CLIL teachers to implement this pedagogy in fostering learners' cognitive abilities and overall learning skills.

Aim

This study aims to examine teachers' practice of fostering learners' cognition in CLIL classrooms and moreover, explore how their practices have been shaped by teachers' teaching dispositions and their sociocultural context of teaching.

Theoretical frameworks

For a comprehensive understanding of teachers' practice, this study draws on the theories of practice by Bourdieu and Vygotskian sociocultural theory, particularly its related theory of activity, to analyse teaching practices that develop students' thinking in CLIL classes.

Bourdieu's (1977; 1984; 1990) theory reminds us of the role of human un- or pre-thought inclinations in guiding actions, also known as *dispositions*. Dispositions offer a perspective for understanding whether differences might emerge in CLIL teachers' approaches to teaching cognition, based on whether they are inclined towards emphasising *either* content *or* language. For example, a content-disposed teacher may tend to stop the lesson to discuss or correct errors about the subject matter, even if that knowledge may not be directly relevant to the content being taught, while a language-disposed teacher may ignore such things but would spend time insisting on a certain word being used, even though the students' intended meaning might be clear.

Vygotskian sociocultural theory, including the genetic method to provide explanatory accounts of behaviour in the present (Vygotsky, 1978; Vygotsky & Luria, 1993)—coupled with Cultural-Historical Activity Theory (CHAT) (Engeström, 1987; 2015)—provides a systematic, methodical tool to investigate practices in situ, while also appreciating how individual differences, within each teacher-subject (Cross, 2020), interacts with systemic conditions to shape each instantiation of language teaching in practice (Cross, 2010).

An application of these theories in the present study enables a systematic but comprehensive account of the social practices being investigated—teaching—with explanatory power for how and why behaviour unfolds in the way that it does, on the basis of the teacher-subject making sense of, and acting upon, context.

Method

A multicase study is adopted to research the practice of teaching cognition in CLIL contexts and explore how practice varies across teachers. It focuses on 5 CLIL primary school teachers in Victoria, Australia. Each teacher is observed and video-recorded 3 CLIL lessons taught as usual. After each lesson, they participate in a 30-minute stimulated recall interview where they watch several teaching

video clips and explain their thoughts and intentions during these moments. They also take a general interview at the start of research to introduce their teaching context.

Data analysis includes (a) constructing each teacher's activity system based on the sociocultural analytical framework of teacher's practice, (b) analysing each teacher's disposition based on recurring patterns of actions that stress content *or* language, (c) identifying teachers' practices of developing cognition drawing on Bloom's taxonomy, (d) comparing the practices of cognitive development across teachers identified as either content-disposed or language-disposed, and (e) explaining teachers' practices and their differences based on the developmental processes of teaching activity, with a focus on the activity system. These stages are visualised in Figure 1.

Interactions with the audience

To actively engage the audience in my presentation, I use slides and visuals to clearly introduce the content, as the basis for audience dialogue by inviting questions, comments, and feedback on the research.

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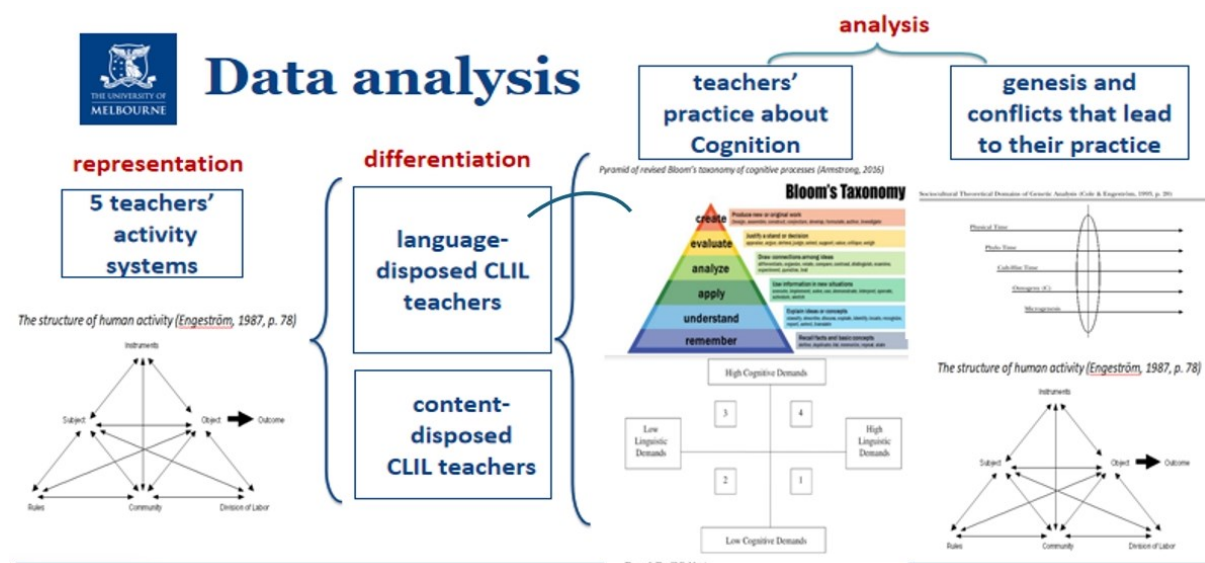
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Data analysis procedures

468 Exploring Conditions for Students' Theoretical Abstraction in a Biology Classroom

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Learning Activity Theory modelling theoretical abstraction

SHORT ABSTRACT

The aim of the presentation is to share some findings from our recent study on how theoretical abstraction is facilitated for students through modelling. The modelling process was explored through microanalysis of teacher-students interaction within a designated modelling sequence of biology instruction, based on the Elkonin-Davydov program. Teachers' field notes, film recordings, and researchers' documentation of the lesson were employed to reconstruct and illustrate the "best practice" modelling sequence. The interaction between the teacher and students was described and analyzed through the lens of Learning Activity Theory. The findings suggest some key characteristics in teacher-students interaction aimed at facilitating students' theoretical abstraction. By keeping the general model in mind, the teacher organizes and leads the modelling process in a way that facilitates theoretical abstraction for the students, enabling them to discern the essence of the specific case they are working on. The study shows that students' diagrams, adjusted step by step, enable the movement from "specificity" toward the general model as students' joint final version.

EXTENDED SUMMARY

The quality of instruction in terms of its content has a decisive influence on the opportunities provided for the development of students' thinking (Arievitch, 2017; Chudinova, 2019a; Davydov, 1990, 2008; El'konin, 1989; El'konin, 2020; Vygotsky, 1987; Zuckerman et al., 1998; etc.). According to Davydov (2008), the primary objective of the educational system lies in facilitating the acquisition of theoretical concepts and thus, developing theoretical thought. The formation of a theoretical concept involves two kinds of logical operations: theoretical (or contentful) abstraction and generalization (Davydov, 2008). Theoretical abstraction refers to the analysis of the object in order to understand its constitution and emergence. That is, the focus is on the *essence* of the object studied. Theoretical abstraction is not possible through the direct experience of the various characteristics and properties of the object, it implies exploratory, transformative work (Davydov, 1990) so that the object's constituent relations – its essence – emerge. Consequently, the joint activity of teacher and students should be of such character that enables the students to discern the essence, i. e. to make a theoretical abstraction. In order to highlight the essential while simultaneously relegating the non-essential to the background, a certain work is needed: modelling (Davydov, 1990).

The aim of the study (Broman et al., 2022) was to explore how modelling as a condition for theoretical abstraction, takes shape in a certain sequence of a biology instruction based on the El'konin-Davydov program. The following research questions were formulated: a) How are the

students' diagrams used in the modelling? b) What is the character and function of the teacher's questions and actions in the modelling?

Through a detailed analysis of a designated sequence of modelling in eighth-grade biology classes (Chudinova, 2019a; 2019b), we explored how the process of theoretical abstraction was facilitated. Teachers' field notes, derived from their own completed lessons and film recordings (encompassing approximately 40 lessons conducted by different teachers), along with researchers' film recordings, were employed to reconstruct and exemplify the "best practice" modelling sequence. The interaction between the teacher and the students during the lesson was described and analyzed. The results reflect important elements of the teacher-student interaction, thereby enabling an understanding of its role in the ongoing modelling process.

Based on the results of our analysis, the following conclusions were drawn:

1. The students' diagrams, reflecting their actual thinking, serves as tools in the joint abstraction process. The students' diagrams reflects the various steps towards the general model, intended by the teacher as the joint final version.
2. Solely on the basis of the model as an "end product", the teacher is able to ask *such* questions that guide the joint work towards the general model, making the essence of the studied object visible to the students. In this manner, the teacher consistently positions the students' thinking as the object of joint reflection, rather than explaining.
3. The teacher's questions and actions during the modelling process exhibit specific characteristics: a) The teacher's questions prompt the students to compare different diagrams step by step. The principle of this successive comparative work is that the least general diagram is juxtaposed with a more general one. b) Consequently, to start the discussion, the teacher strategically selects the most non-general solution, not the best/most correct proposal, providing all students with an opportunity to participate and contribute to the joint thinking. c) If a schematic proposal needed in the discussion to allow all students to make a certain adjustment in their thinking, is missing, the teacher simply adds it.

Hence, we conclude that the teacher orchestrates and leads the modelling in a manner that enables theoretical abstraction for the students. This allows the students to discern the essence of the specific case under examination.

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471 Expanding teaching activities in contexts

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: STEAM CHAT education

SHORT ABSTRACT

The symposium brings together five research papers spanning STEAM education, early childhood science education, museum-based learning, co-teaching dynamics in teacher education, and conflict resolution in professional development. Through the lens of Cultural Historical Activity Theory (CHAT), these studies explore learning in various educational contexts, including formal education and non-formal settings such as museums as well as teachers' education. Incorporating STEAM principles, the first paper highlights the importance of creativity and knowledge-building capacity in education. The second paper delves into the role of play in science learning, focusing on concept formation, particularly examining the dissolution phenomenon among young learners. In a museum setting, the third paper discusses the Thunderbolt Hunt educational program, emphasizing the practice of the scientific method and the engagement of students in alternative learning experiences. Shifting to teacher education, the fourth paper employs graph analysis techniques to explore the dynamics of co-teaching in physics education, shedding light on collaborative teaching practices. Finally, the fifth paper addresses conflicts of motives and boundary-crossing activities among science teachers, emphasizing the importance of navigating complexities in technoscientific education and the role of curricular artifacts. Together, these studies underscore the multifaceted nature of education, highlighting the significance of interdisciplinary approaches, collaborative learning environments, and ongoing professional development to enhance teaching practices and meet the diverse needs of learners across different educational settings.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

The focus of Indian education has remained largely 'retrospective' despite the aspirational 'prospective' goals set for it in policy statements. Text-book learning to reach a predetermined end-goal is the mainstay of educational practice, making it best suited to mechanical rote practices.

Accordingly, the 'prospective' aspect of education that provides space for innovative learning, by using life situations and problem solving, recedes to the background. The largely passive role to which students are subjected, with no regard to their interests and voice, renders academic learning irrelevant to their present and future needs. Science, Technology, Engineering, Arts, Math (STEAM) points a way to address this issue by promoting creative and critical thinking and, inquiry-based and hands-on learning. Such competencies can prepare students to become self-evolving learners with an ability to co-construct knowledge that adapts to new societal conditions. This qualitative study juxtaposes two educational scenarios, one from formal schooling which is knowledge-transmission oriented, and another that encourages knowledge-building in joint inquiry-based activities, with both teachers and learners making a contribution. Informed by STEAM principles and using a CHAT framework, I first examine what constrains or facilitates the development of students' ability to think critically, pose questions and find out and thus learn to learn meaningfully in schools and secondly, consider the complexities involved in changing the long-standing traditional culture of schooling to make it more STEAM-friendly.

Keywords: STEAM, Creativity, CHAT

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background and purpose

The focus of Indian education has remained largely 'retrospective' despite the aspirational 'prospective' goals set for it in policy statements. Text-book learning to reach a predetermined end-goal is the mainstay of educational practice, making it best suited to mechanical rote practices. My presentation which is informed by STEAM principles, uses a CHAT lens to understand this tension between policy and practice. It pushes towards a nuanced understanding of what a shift from teaching as knowledge transmission to teaching as promoting learning means to teachers. It also unravels the circumstances which impede change in pedagogical orientations of teachers. Juxtaposing two classroom episodes in two different Indian school contexts I examine:

What constrains or facilitates the development of students' ability to think critically, pose questions and thus learn to learn meaningfully in schools? What are the constraints to changing the long-standing transmissive culture of schooling?

This can begin to offer the field of education some ways of rethinking relationships among students, teachers, researchers and policy-makers and move towards inclusive pedagogic practices beyond the status quo.

Methods

This is part of a larger study using CHAT framework of an educational outreach program for socioeconomically disadvantaged students in an Indian context. For the purpose of this qualitative study, the data collected between January and July 2021 are used. This involved observing two consecutive online math classes each from two different schools, AC1 and AC2, in-depth interviews of the two math teachers, after class discussions with them which spilled over to ongoing reflective conversations based on the data analysis I shared with them. The other sources of data include interview of head teachers of the two schools, student interviews (6 from each school), parents (two from each school) and my conversations with students during online class observation. Engeström's (1987/2015) expanded model of Vygotsky's basic representation of tool mediated activity is used as a frame to capture the elements of the two classroom activity contexts. This helps locate the

opportunities and constraints these contexts provide for pursuing the desired object of a knowledge co-constructing pedagogy.

Findings

The classes in both AC1 and AC2 were engaged in object-oriented problem-solving activities. However, the findings show that engaging in activities per se is not directly linked to the development of transformative thinking. As Davydov and Markova (1982) point out, development depends upon creating “conditions that will enable activity to acquire personal meaning.” (p.57). The difference in the mediational means in AC1 and AC2 seem to have led to different developmental outcomes. The teacher’s power sharing relationship with students in AC2 where activities were mediated by meaning-making interactions that acknowledged students’ agency as subjects seemed more conducive for promoting thinking and transformative learning than the authoritarian discourse in AC1. The former has the potential to open opportunities for historically underserved students from diverse backgrounds to partake in school learning by linking it to their own meaning making process. Yet the question remains: Why has this practice not become part of the common cultural practice in schools despite the robust possibility it holds for achieving the desirable goals set for education? We need to see the micro classroom interactions in relation to the macro sociopolitical dynamics to understand this paradox. In AC1, the ideal object of educational activity is refracted through macro socioeconomic and political interests resulting in a deflected institutional reality, whereas in AC2, the voices from the margins that reflect prospective visions use their autonomy to make inroads through the cracks they create. Being a private institution, AC2 has some space to exercise its agency and encourage teachers to use their autonomy and explore ways to achieve the envisioned goals. But in AC1, which is under strict bureaucratic control, teachers’ autonomy is hijacked by the neoliberal hold on education communicated through institutionally mandated common curricula and scripted instructional practices teachers are expected to follow. The institutionally valued instrumental goals driven by the belief that uniform input begets uniform output provides no motivation for teacher questioning, whereas the need to help students become self-evolving learners in AC2 motivates teachers to collectively design and transform historically and culturally constructed activities. “The management’s expectations and support are the driving force for us.” “We have teacher professional development session every week where we share ideas and discuss plans for STEAM projects together. So, our learning is ongoing with student learning.” (Excerpts from what teachers in AC2 have said)

Conclusion

The challenge this study identifies for Teacher Education is to help teachers recognize the *need* to change their practice, reclaim their capacity to think and use their “personal practical knowledge” (Clandinin, 1985) to reconceptualise practice, create a collegial space within the restricting borders of institutional control (Ratnam, 2020) to learn to “teach in the cracks” (Schultz, 2017).

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Several early years curriculums worldwide highlight the need for promoting learning and development through play. However, we do not know much about how teaching science through play looks like in practice, and how learning in science becomes evident in play-based settings. By theorizing these problems from a cultural-historical perspective, this presentation explores how

scientific play creates conditions for pre-schoolers to form the concept of dissolution during everyday educational reality. A case example of a learning experience between five pre-schoolers, aged between 5 to 6 years old, and two early childhood teachers in Greece is presented. Qualitative empirical data were collected through recordings of children's dialogues, drawings, field notes, and photographs. The cultural-historical concepts of everyday and scientific concepts, real and ideal forms, and inter- and intra-psychological functioning were central to the data analysis process. The findings revealed that during scientific play: a) children started thinking about the phenomenon of dissolution in an abstract way, b) their thinking about the phenomenon made a transition from a macroscopic to a microscopic level, c) they managed to distinguish the substances into two main categories: substances that can be dissolved and others that cannot, crafting also a narrative around the conservation of the substances, and d) developed the trial skill to test if a substance can be dissolved or not. The study informs everyday educational practice by providing a pedagogical framework based on the coherence, consistency, and balance between teaching-learning goals in science and play practices.

Keywords: early childhood science education; concept formation; play

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

In many contemporary societies, play-based pedagogies are the baseline for the development of early childhood (ec) education curricula (Australian Government, 2010; Greek Ministry of National Education and Religious Affairs, 2002; UK Government, 2017). However, evidence has shown that ec teachers face difficulties when it comes to organizing play-based activities with specific learning outcomes (Tu, 2006; Miller & Almon, 2009) or do not conceptualize and categorize play in teaching methods for achieving specific learning outcomes (Lynch, 2015; Fesseha & Pyle, 2016). The conceptualization of play as a basic teaching approach becomes less evident when it comes to the field of learning and development in science in the early years (Fleer, 2006, 2009). Despite the growing body of empirical findings about the interrelation between play and learning in ec science education (Fragkiadaki, et. al., 2023; O'Connor, et. Al., 2021), more research has to be done to inform practice about how teaching science through play looks in everyday educational reality and how learning in science becomes evident in play-based settings.

Aims

This presentation seeks to make visible how preschool children approach the phenomenon of dissolution through scientific play as well as how scientific play can create the conditions for systematic engagement with science methodology such as the development of the trial skill by the children during everyday educational reality in pre-school settings.

Methods

Following a cultural-historical perspective, the study design was based on setting up a play scenario that would allow children to explore diverse aspects of the phenomenon. An imaginary story about mud castles inspired children's play. In line with the Greek curriculum (2011) objectives about approaching natural phenomena through their scientific play children were anticipated to express their ideas about dissolution and negotiate these ideas with others, form questions to investigate certain aspects of the phenomenon, form answers for the question they investigate, and use the results of their research in new situations. Children's play was developed through 4 play-based

activities over 3 weeks. Empirical data of 5 children between 5-to-6 years old from 1 class in Greece are presented. Data were collected through a) audio-recorded conversations (144 minutes), b) children's drawings (20 drawings), c) field notes by the ec teachers (4 pages), and d) photographs of children's scientific play (80 photographs). The cultural-historical concepts of everyday and scientific concepts, real and ideal forms, and inter and intra-psychological functioning were central to the data analysis process.

Results

The findings revealed that through a set of play-based activities children were oriented towards specific science learning outcomes. Children's learning became evident through the way they gradually approached critical aspects of the phenomenon. These aspects are mentioned in turn: a) children started thinking about the phenomenon of dissolution in an abstract way focusing on properties of the matter such as moisture and consistency, b) children's thinking about the phenomenon made a transition from a macroscopic to a microscopic level where substances still exist even not visible to the naked eye, c) children managed to distinguish the substances into substances that can be dissolved and others that cannot, and d) children developed the trial skill to test if a substance can be dissolved or not. The findings also highlighted that within scientific play children unpacked and used their everyday knowledge and understandings about the phenomenon and made critical interrelations with their social and cultural reality using a wide set of cultural artifacts to expand and deepen their understandings. Peers' interactions within play were rich and allowed children to approach the phenomenon collectively and reach more advanced understandings. During the scientific play, children's thinking about the phenomenon became more abstract and they were able to conceptualize the phenomenon beyond specific objects, procedures, and situations. Imagination was also critical during this process. Drawing and accompanying narratives allowed children to reflect on their learning experience, expand, and deepen their understandings. Ec teachers' pedagogical practices motivated children toward science learning and supported the development of their scientific thinking. What was important here was that the ec teachers engaged with children's play after having a teaching and learning plan based on a set of teaching goals related to the science concept.

Conclusions

The findings suggest that the coherence, consistency, and balance between teaching-learning goals, subject matter knowledge, and play are the key assets for advancing learning outcomes in science in the early years. The study informs everyday educational practice and science pedagogy by providing new insights into the dialectical interrelation between play and learning in science during the early years.

How interaction with the participants is planned

The interaction with the participants is planned through enhancing dialectical interrelations between the symposium's presentations and collectively crafting a set of take-away messages from the symposium.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

The research uses Cultural Historical Activity Theory (CHAT) as a theoretical framework for the design and analysis of a science education program with an emphasis on active and interactive learning processes. More specifically, the research focuses on the scientific method processes that take place

during the educational program “Thunderbolt Hunt” at the Archaeological Museum of Ioannina, Greece. The educational program was implemented in 8 classes of 6 to 8-year-old students over 2 months. Research data was processed and analyzed with the Qualitative Data Analysis software, NVivo 9. The overall research data was 12.7 hours of video recordings which were divided into 61 individual excerpts, as well as 136 student designs/texts produced by students during the research process. The data was analyzed in three levels, with respect to the scientific method processes that appear, the interactions that take place and the structural components of the extended triangle of the Activity Theory. Multi-layered data analysis was performed within NVivo 9 software by the coding process. The present paper focuses on the scientific method processes. The interpretation of the results suggests that the Archaeological Museum of Ioannina, despite its limitations, has served as a fecund field of design and implementation of a science education program. In the museum’s learning community, students practise scientific method processes, interact with the exhibits of the museum as well as with their classmates, instructor and teacher/s, actively participating in the actions of the educational program “Thunderbolt Hunt”.

Keywords science education, CHAT, archaeological museum

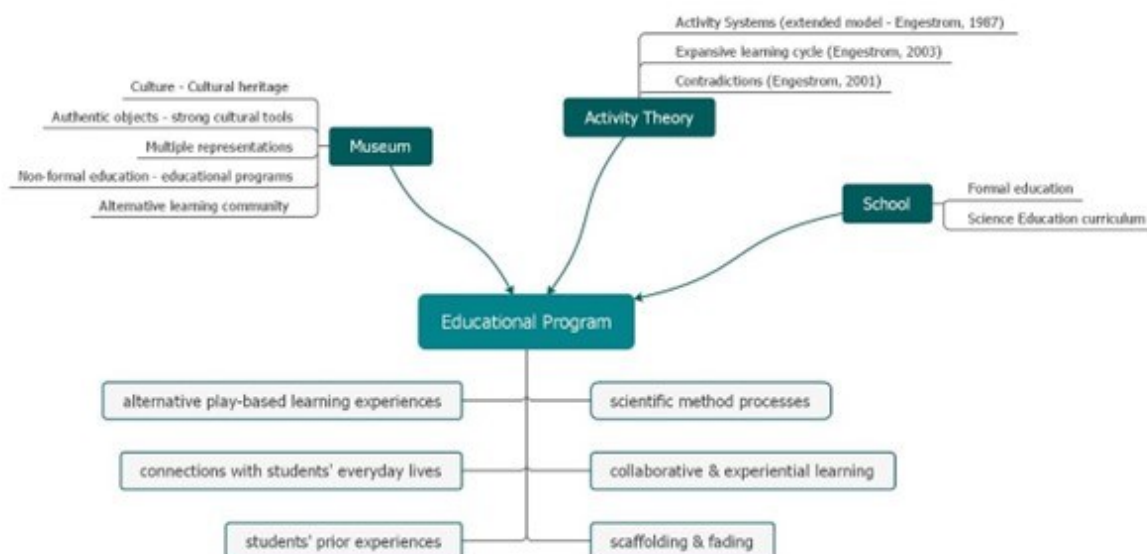
SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Background

Over the last 20 years, science museums focus more and more on the dissemination of scientific knowledge considering it as a path to scientifically literate societies and participatory citizenship. The goals envisioned by various international bodies (European Commission, 2015; Science Center World Summit, 2017; United Nations, 2015) with regard to science education can be promoted successfully using educational materials available in museums for organizing science programs. Within this research an effort is made to bridge the gap in terms of the synergy between school and museum and to overcome some obstacles highlighted in the literature such as lack of resources and inclusion for pre-school students as well as the inequalities for those who come from agricultural communities and those with low socio-economic background (Falk et al., 2014; Kornelaki & Plakitsi, 2018).

Aims

The research attempted to exploit, on one hand, the benefits offered by the alternative learning environments with the reduced hierarchy, the strong cultural tools and the attractive settings through their educational programs, while on the other, to introduce to these environments scientific concepts cultivating scientific method processes. These objectives are achieved exploiting the principles of CHAT, which provide tools to design as well as analyze the educational program. The features of the educational programs are depicted in the conceptual map below (Figure 3.1).



3.1 Conceptual map about the features of the educational programs proposed

Methods

The educational program “Thunderbolt hunt” was implemented to 8 different classes of schools the first year (2 private schools, 4 from the city and 2 from the outskirts of the city). In numbers, 136 students, 6 to 8 years old and 12 teachers participated in the research.

The data collection included video recordings, photographs, students’ drawings and researcher’s fieldnotes during or right after the implementation of the educational program. In total, almost 13 hours of video were analyzed, 136 students’ drawings, 39 photographs and fieldnotes.

The dialogues from the implementations were recorded, transcribed, and coded in software NVivo 9. A multilevel data analysis was performed within the NVivo 9 environment using the coding process.

Results

According to the data analysis, during the educational program, students practiced communication, observation, predictions and hypotheses, experimentation, interpretation, operational definitions, measurements. The order of the processes indicates the frequency according to which they appear in students’ dialogues. The analysis moved from the general to the specific. Hence, the first step was to apply the word frequency queries to the nodes and parent nodes created, then to apply text search queries to the most frequent words in order to explore the connections and their interrelations with other words or phrases from the data, and finally, to explore indicative excerpts from the raw data. The most frequently used words are air, because, thunderbolt, balloon, can, bottle, groups, hole. Most of these words refer to the educational program’s fourth action and to materials used during the experiments about air and its properties (balloon, bottle, hole, syringe, cap).

The instructor’s role

The instructor’s involvement in the experiment process is ancillary. She appears when she judges that she can assist students to better understand the concepts and the phenomena posing questions for consideration or when she notices that during the process, obstacles appear that students cannot overcome by themselves (scaffolding), but she does not intervene when students collaborate and seem like they are discovering and interpreting the phenomena without her assistance (fading).

Examples of scientific method processes in students' drawings

Scientific method processes are also present in students' drawings. When the students finished their drawings, the instructor asked them to describe what exactly each drawing depicts, in order to use these inputs for a more accurate analysis. Observing students' drawings, the process that prevails is experimenting. This is due to the use of tools by students while experimenting. Hence, the scientific method processes are analyzed via the use of tools and students' descriptions of their drawings.

Conclusions

Given the extensive research that shows that cultural, educational and cognitive factors influence students' understanding of science, more attention should be paid to students' prior knowledge and the resulting interpretive positions in the design of collections and related learning experiences (Mujtaba et al., 2018). It is important to carefully articulate the learning objectives of museum activities. Similarly, securing an appropriate "connection" to learning that fuels students' intrinsic motivation would be valuable in increasing students' performance and further learning (Mujtaba et al., 2018). In order for students' learning experiences to be more effective, it is important to have the opportunity to explore the exhibits interactively with others as well as on their own (Andre et al., 2017) and the opportunity to discuss what they learn with their peers, museum educators and their teachers. In addition, it is suggested that they will be encouraged to form links with their prior knowledge about scientific concepts.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Co-teaching is generally known as the practice of two or more teachers throughout a lesson in the same classroom in which collaboration among them is mandatory to achieve the educational goals. We are proposing an expanded co-teaching as a triad student-teacher-mentor-student's collaboration and coordination of actions rather than considering just the teachers on this partnership. The expanded co-teaching is more evident in the practicum context that pre-service physics teachers undergo supervised teaching practices in high schools. We present the analysis of a co-taught physics class about thermal machines, to a group of Youth and Adult Education class, by one student-teacher (ST) and his mentor (M), an in-service physics teacher, in a Brazilian public High School. We used the Pajek software and considered the verbal interactions of the subjects and identified who spoke to whom for the construction of the network. The metric was calculated based on the degree centrality that measures an actor's direct relational activity. The resulting graph shows the student-teacher's centrality in the network, when the student-teacher takes the position of teacher, recognized by his mentor and high school students. The expanded co-teaching expresses the collective process in which the student-teacher's teaching agency emerges from both dynamic interactions with mentor and students and when a new division of labor begins. The student-teacher emerges as a teacher, taking decisions and choosing actions, but now not just supervised by the mentor but also accepted as a teacher by the students.

Keywords: Graphs analysis, Science Teacher Education, Co-teaching

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Background and aims

The practice of co-teaching is widely used in different educational contexts in different countries (Murphy & Scantlebury, 2010). However, as Pitanga (2019) shows, in science education, the most

common educational context is that of the teacher education, especially the practicum, in which the student-teacher, the university professor, and the mentor cooperate in joint teaching practices in the classroom at school. In some cases, it is possible to identify the complexity and the degree of commitment to co-teaching in the practicum (Roth & Boyd, 1999).

We present the analysis of a co-taught physics class about thermal machines, to a group of Youth and Adult Education class, by one student-teacher (ST) and his mentor (M), an in-service physics teacher, in a Brazilian public High School.

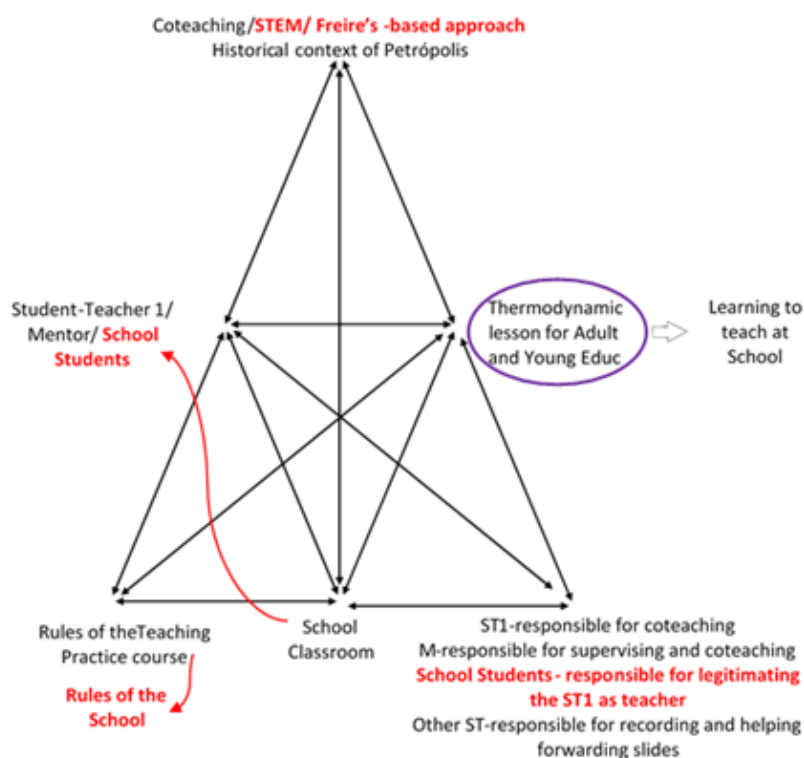
Methods

The content on thermal machines was co-taught from examples of steam locomotives, contextualized explicitly in the history of the city of Petrópolis, where the school and the university are located. The first railroad built in South America passed through the city, connecting the coast of Rio de Janeiro to the countryside over time.

Using graphs to investigate the practice of science teachers in co-teaching, we gathered data through verbal interactions between the students, the mentor, and the student-teacher through video recording of the class, whose speeches and then counting the number of these verbal interactions and addresses. From the analysis of the interaction, we determined their degree centralities. This allowed us to identify the main actors in the classroom dynamics. This analysis makes it possible to understand, more clearly, who are the subjects who most verbally interact with others.

Results

The direction of the arrows in Figure 1 represents the occurrence of a directed speech; for example, student 1 speaks directly to the teacher but does not receive any specific speech from the teacher. Figure 4.1 also shows that ST-E is the one with the highest degree centrality.



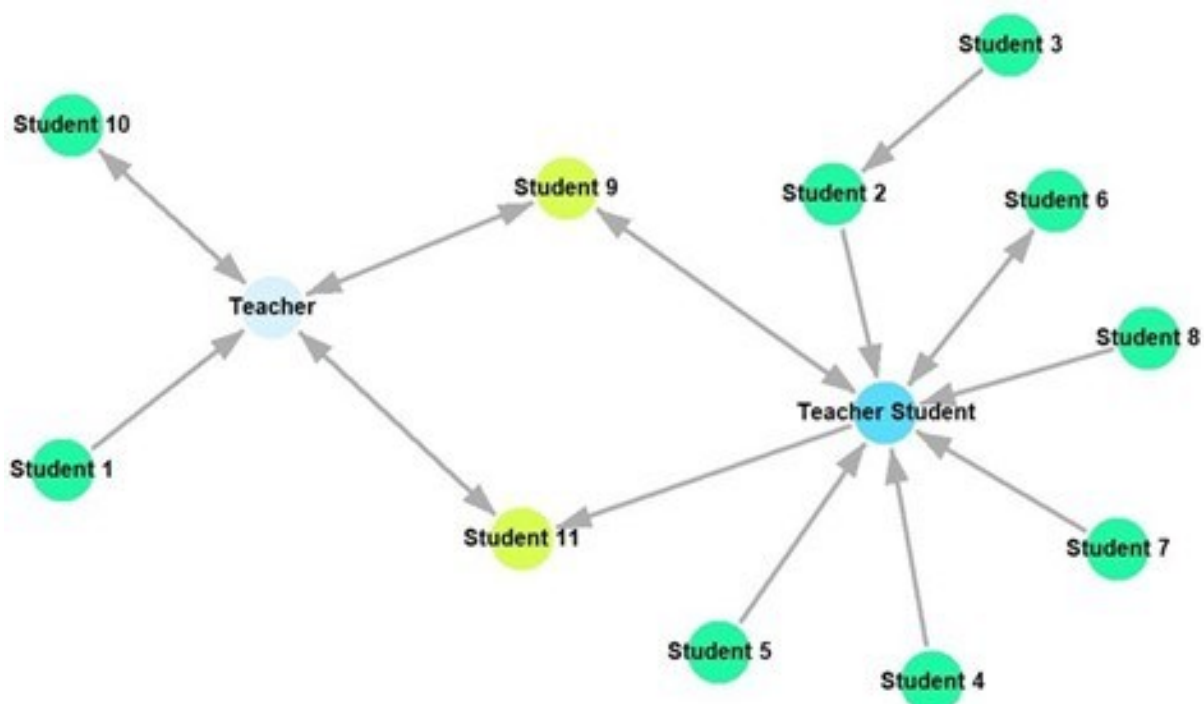
4.1 Co-teaching class graph

From the point of view of a teaching initiation process, it seems to us that in this situation occurred what was expected: the ST-E takes the position of teacher, with recognition from the teacher and, especially, from the students. Unlike what happens in practicum situations commonly reported in Teaching Practice classes in which student-teachers are not properly incorporated into the routine of the school and the classroom, or situations in which the mentor teacher is usually "left to his own luck in front of student-teachers and little is known about how they effectively elaborate the work they are performing" (Sarti & Araújo, 2016, p. 176).

Conclusions

In this specific context of practicum, the mentor must perform a double function: to be a teacher educator and teacher of the class for which he is responsible in his school; on the other hand, the student-teacher, in our case the ST-E, also takes on a dual role: as a student in the Physics Teacher Education Program and as a teacher in the class in which he places his practicum. Thus, this dual function of these two agents gives the activity and the object of that activity a hybrid characteristic. An object of the hybrid activity, the class that aims to teach thermodynamics to young people and adults also aims to teach and learn at school, in the context of the practicum represented in Figure 2, based on Engeström (1987)'s activity model. In this sense, the instrument of the activity is co-teaching itself, which, as a methodology, mediates between specific content, historical context, and the students' experience, as well as teaching education.

However, we can verify the expansion of co-teaching as we identify the action of another member of the community as the subject of the activity: the students. The initial dyad "ST-E-mentor" becomes a triad: ST-E-mentor-students, as Silva & Mattos (2019) proposed. Thus, the co-teaching activity's expansion consists of the inclusion of the students as subjects, providing important changes in the organization of the activity, represented in Figure 2 (red lines).



4.2 Expanded co-teaching activity



In Figure 4.2, we indicate the changes in the activity, placing students as subjects and not just as part of the community. In this way, the STEM treated also constitutes an instrument of the activity. The rules now include the rules of the school, and as expected in the activity transformation as a unit, the division of labor also develops, including now the students as subjects, since they start to have the role of legitimizing ST-E as co-teacher of the class. Therefore, the expansion of co-teaching brings a new division of work, as ST-E establishes new mediations in the classroom as a teacher. Likewise, students assume a new role as co-teaching partners.

SYMPOSIUM PAPER 5, SHORT ABSTRACT:

This research explores a collaborative effort spanning seven years between two science teachers and a pedagogical counselor who worked together to co-design and exchange technical and instructional tools to meet the evolving requirements of science education curriculum, which increasingly demanded the integration of technological design into science teaching. Through their collaboration, the participants navigated conflicts of motives within a complex learning environment, utilizing various learning strategies to give new meaning to their actions. This process led to the emergence of new ideas and new modes of participation, manifested through technical objects and instructional artefacts. Drawing on developmental work research (DWR) and ethnomethodology, this research delves into seven years of Cultural-Historical Activity Theory (CHAT) research. It highlights how the resolution of conflicts of motives triggered transformative actions, addressing inherent contradictions within their activity systems. Through boundary-crossing activities and the pooling of expertise, the two teachers and the pedagogical counselors co-design training workshops to exchange their technical and instructional resources with 170 teachers from 15 school districts. This collaborative endeavor resulted in the expansion of their professional practice, marked by the adoption of new meanings, roles, and division of labor, ultimately enhancing their ability to meet the demands of modern science education.

Keywords: boundary zone · conflicts of motives · curricular artefacts · teachers · technoscientific education

SYMPOSIUM PAPER 5, EXTENDED SUMMARY:

Background

A recent educational reform in Quebec has ushered in a new science and technology curriculum, emphasizing the techno-scientific literacy of students. This shift necessitates a departure from traditional teaching methods towards more student-centered approaches, along with the integration of technology into science education. However, many teachers lack training in this integrated approach, leading to a conflict of identity for science educators who must now also incorporate technology into their teaching practice.

Aims

To explore how the expansive resolution of conflicts of motives triggers the transformative agency that enables the resolution of internal contradictions within the activity system, a seven-year collaboration (2010-2017) was initiated between two high school science teachers and a pedagogical counselor. Their collaboration focused on designing and exchanging technical and pedagogical tools to help teachers transition from lecture-based approaches to integrating technological design into their teaching.

Methods

Using the theoretical and methodological framework of Developmental Work Research (DWR) and ethnomethodology, specifically the principle of double stimulation, the team created artifacts to stimulate teachers' actions and prompt a shift towards conceptual understanding and innovative teaching practices. Ethnographic data, including audio-video recordings, interviews, and artifacts, were collected over the years to identify conflicts of motives, tensions, and boundary-crossing objects between different activity systems.

Results

The analysis reveals that emotional experiences and actions played a significant role in overcoming contradictions and resistance among participants. Through learning actions, teachers and counselors redefined their approaches to teaching, leading to transformative actions that expanded their professional practice. This expansive resolution of conflicts of motives served as a catalyst for professional development workshops, reaching a broad audience of science teachers and counselors.

Conclusion

Overall, the collaborative effort over seven years facilitated expansive learning, resulting in the transformation of teaching practices and the dissemination of innovative approaches to a wider educational community.

How interaction with the participants is planned

Q&A with the participants

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476 Historical Narratives and Activity Theory: initial propositions for Science Education

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Presentation: Poster presentation (presented in person at the congress)

Theme: Meaningful education

Keywords: Science Education Historical Narratives motive

SHORT ABSTRACT

Historical Narratives are a strategy in Science Education to teach about Nature of Science, however they are not based on a theory of human development or learning. They discuss science historical episodes in the classroom, locating the student in an episode, creating engagement through a narrative and causing reflection about remarkable historical problems. Based on the Activity Theory, it is necessary to produce activities that promote the relationship between the student (subject) and the world (school knowledge). So Science Education should guide students to learn scientific concepts, and the Historical Narrative could be a strategy to organize the study activity into actions and operations. History enables the development of a science's view, leading the students to realize science as a collaborative and socio-historical project. Teachers could create motive for the study activity by placing the student, through a narrative, in a historical situation, based on concrete reality, since they are also composed by questions that represent a sequence of actions and operations that guide the activity. Embedding the Historical Narratives into Activity Theory give strength to the proposal. It is important to emphasize that this work is preliminary and will be delved in future research on the use of Historical Narratives in science classes from the perspective of Activity Theory.

EXTENDED SUMMARY

Science Education research has been concerned with approaching Nature of Science aspects through Historical Narratives (Allchin, 2012, 2017; Azevedo & Del Corso, 2017; Klassen, 2007). They discuss science historical episodes in the classroom, locating the student in an episode, creating engagement through a narrative and causing reflection about remarkable historical problems. These narratives are focused in the inquiry process and in the approach of Nature of Science aspects, guided by questions to lead the students to think about scientific concepts and Nature of Science. Science history, in these cases, are particularized in the life history of some scientists or some scientific concepts. Historical Narratives seem a promising strategy, mainly because students show engagement in science classes (Allchin, 2012, 2017). However, there is no discussion about why and for what students are engaged for.

In this theoretical work, we aim to integrate Historical Narratives into the Activity Theory, pointing out that a Historical Narrative can be a strategy to organize the study activity into actions and operations. We defend that the study activity should guide the student to learn scientific knowledge.

According to Leontiev (1978) the relationship between subject and world is always mediated by activity. Human being is a being of needs, who is in a state of need. The activity, therefore, seeks to meet a need. Yet, what puts people into activity is not the need, but the object of the need, that is, the motive. A person can need to eat, but because of religious motives, deprive yourself of it. The need to eat is real, but depriving yourself of food answers another need: to be aligned with religious beliefs. What sets us into activity is the motive: the motive is the object of the need, it is the meeting of the need with what supplies it. In the school context, it is necessary to produce activities that promote the relationship between the student (subject) and the world (school knowledge). In this sense, Historical Narratives could be a type of activity that will put students in contact with scientific knowledge.

Historical Narratives are quite rich and allow the identification, in history, of an unresolved problem and its cultural context, which leads to contemporary scientific concepts through the investigation of a particular case (Allchin, 2017). According to Stetsenko (2008, p. 482) "... the evolutionary origins of humans have to do with an emergence of a unique relation to the world realized [...] through the social practice of human labor — the sociocultural collaborative, transformative practice unfolding and expanding in history". Thus, we understand that history enables the students to realize science as a collaborative and socio-historical project. Teachers could create motive (Leontiev, 1978) for the study activity by placing the student in a historical situation based on concrete reality. A sequence of questions throughout the narrative proposes actions to think about objects of investigation (scientific concepts and Nature of Science aspects). These actions are carried out through operations guided by questions and supported by research instruments (schemes, tables, graphs, images, real historical documents). Leontiev (2017) highlights that human activity's motives are varied, it is necessary to differentiate meaning-forming motives from stimulus motives: when carrying out the homework, a child may be motivated because they can only play when the homework is finished. This is only a stimulus motive, but can become a meaning-forming motive as the student realizes that they have learned, that they can receive encouragement from teachers, or at home. In the same way with Historical Narratives, at first, students may be interested in the scientist's story, or other aspects of the activity proposed by the teacher, but the motive for the activity can become meaning-form as they understand the importance of scientific knowledge for the social reality and the importance of recognizing the process by which science is humanly and collectively constructed. Embedding the Historical Narratives into Activity Theory gives strength to the proposal, explaining that narratives can be an useful strategy for organizing actions and operations of the study activity, creating meaning-forming motives, which we understand as the appropriation of scientific content.

In this proposal, Historical Narratives can be a strategy to organize the study activity into actions and operations, according to Activity Theory. This work is preliminary and will be delved in future research on the use of Historical Narratives in science classes from the perspective of Activity Theory.

During the presentation we will show a small part of a Historical Narrative and one question for the public and ask them what is the motive, the action and the operations that they believe that may be developed through the students while answering the question.

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477 Conception of science as a transformative practice in Historical Narratives

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Theme: Meaningful education

Keywords: Science Education transformative practice Nature of Science

SHORT ABSTRACT

Based on Anna Stetsenko, transformative, collaborative and intentional practices are the core of human nature, as it is through them that individuals become humans, know themselves and the world, which makes human activities permeated with ethics, values and ideology. In this paper we transpose these ideas to scientific practice in order to develop this worldview and conception of science along with transformative practices in the classroom. Based on the history of science, one specific Historical Narrative about Nicolas Leblanc and soap production was produced with questions to guide student's learning of chemistry and conception of science. The production of soap from caustic soda in a historical and material demand was only possible with the development of chemical knowledge and implied a change in the world and people themselves. From the history of soap production associated with Nicolas Leblanc, it was possible to identify that scientific practice is transformative and collective, that is, their agents transform reality and themselves, and is inserted in a dialectic between objectivity (material and historical reality) and subjectivity (values, interests). Moreover, Historical Narratives are a potential teaching tool capable of explaining this conception of the world and of human beings associated with aspects of Nature of Science.

EXTENDED SUMMARY

The sociopolitical crisis has moved an agenda of scholarship, for example, in feminism, critical pedagogy and critical race theories, disturbing the future of Marxism and other revolutionary resistance projects, which have been seen as philosophical systems detached from subjective forms (Stetsenko, 2020). Thereby, Stetsenko (2020, p. 735) understands that it is important to address, explain and radically update this worldview, including ourselves, for instance, "... as agentive actors realizing 'the-world-in-the-making,' in close alliance with the dynamics of materiality and historicity". For the author, transformative, collaborative and intentional practices are the core of human nature, as it is through them that individuals become human, know themselves and the world, which makes human activities permeated with ethics, values and ideology. Scientific practice could be interpreted based on the ideas of Stetsenko (2008, 2020) and this conception could be developed along with transformative practices in science classes. Historical Narratives have been used in Science Education as a teaching tool to engage students proceeding from explicit Nature of Science lessons in the perspective of "science-in-the-making", in contrast to "ready-made science" (Allchin, 2012, 2017a, 2017b; Azevedo & Del Corso, 2017; Klassen, 2007). Based on the history of science, we developed one specific Historical Narrative about soap production with questions to guide student's learning of

chemistry and conception of science. Thus, we aim to integrate one Historical Narrative into Stetsenko's idea of transformative practice in the Science Education context.

We develop one Historical Narrative about the chemist and doctor Nicolas LeBlanc (1742-1806) and soap production. The narrative begins with the public health problem in 18th century France, when there was no basic sanitation and, therefore, no control over the disposal of feces and urine, for example. Soap was an important material (and commodity) for preventing diseases, however soap production was disrupted due to the lack of a chemical material called potash, an alkali extracted from nature which began to be used to make gunpowder. It was necessary for chemists to develop a procedure for synthesizing soda, another raw material capable of meeting the demands of French soap producers.

Students are invited to investigate, through narrative and keeping up with LeBlanc's dilemmas, how this synthesis is possible according to chemical knowledge of that time. Students need to mobilize knowledge of chemical reactions, evaluating the progress from macroscopic aspects. Furthermore, other issues involving Nature of Science are addressed, such as relations of economic issues and development of science, chemistry as a science producing artificial materials, the transformations of chemical language, and intellectual property. Questions are presented at certain points in the narrative, proposing intermediate actions to achieve the result, which is caustic soda production. As a procedure, students need to associate macroscopic aspects of chemical reactions with submicroscopic and symbolic ones, proposing chemical reactions. One of the most important discussions is, once the soda production process was developed, the issue of intellectual property of a process that must serve to collective health, raising debates involving ethics, values and ideology. Social and economic relations in the context of soap production explain the perspective of "science-in-the-making" in analogy with "world-in-the-making", such as proposed by Stetsenko (2020). The dilemmas associated with the questions lead to a conception of human beings — and, therefore, scientists — as social agents of community practices, rather than autonomous and isolated beings. The production of soap from caustic soda in a historical and material demand was only possible with the development of chemical knowledge and implied a change in the world and people themselves, ideas found in Stetsenko (2008, 2020). "People exist while creating themselves in and through transformative practices of creating the world, at the nexus of these processes — suggesting that there is no neutral, separate world and no isolated, detached individuals" (Stetsenko, 2020, p. 733). As scientists' community practices are created by people, they are saturated with subjective forms — such as values and interests — made explicit in LeBlanc's subjectivities.

From this Historical Narrative, it was possible to identify that scientific practice is transformative and collective: their agents transform reality and themselves, and it is inserted in a dialectic between objectivity (material and historical reality) and subjectivity (values, interests). Historical Narratives are a potential teaching tool capable of explaining this worldview associated with aspects of Nature of Science. Incorporated with a critical pedagogy, such as historical-critical pedagogy, it has the potential to promote a scientific education capable of breaking with the positivist vision without falling into relativism, developing a worldview and science conception aligned with Marxism and capable of dialoguing with the sociopolitical crisis.

At the end of the presentation we will show a small part of a Historical Narrative and one question for the public and ask them what are the social and economic relations in the context of soap production and how they demonstrate the “science-in-the-making”.

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478 ONLINE - The potential of Science Teaching Projects to develop the autonomy of pre-service teachers

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Autonomy Science Teaching Projects Expansive Learning

SHORT ABSTRACT

The aim of this study is to understand the development of autonomy by a pre-service teacher in Chemistry. This research was developed at the IFSP in a Brazilian federal public institution, which presents a flexible curriculum that is being built in an interactive and participatory way among students and teachers, besides tentatively promoting students' autonomy through self-management of learning. In this context, for mastering their degrees, the pre-service teachers should design a project related to secondary school Chemistry teaching, which can be directed at the development of a didactic sequence in the school associated with the program. Taking into account Activity Theory and Expansive Learning (Engeström, 2016) as a methodological theoretical framework, we analyzed the proposal developed by Professor Roberto and also an interview with him, the subject of whose Science Teaching Project involves the problem of alcohol consumption and chemistry. This experience pushed demands on the pre-service teacher's knowledge, as it involved authorship and the complexity of two teaching spaces (secondary education and pre-service teacher) permeated by contradictions and multivocality, leading to autonomy based on relationships.

EXTENDED SUMMARY

This paper analyzes the activity of developing a Science Teaching Project (STP), as a curricular practice, based on the expansive learning cycle (ENGESTRÖM, 2016;1999), and its relationship with the development of autonomy in the Chemistry Degree at IFSP in the study activities "being a teacher" and professional learning "teaching science", since it requires them to be in movement and in interaction between two activity systems with different roles: in the graduate institution (student) as the object of the study activity and in the secondary school (trainee) as an instrument built around the professional learning activity throughout training and in the internship field school. This process was translated into a complex, collective and often contradictory work, even more so because it was carried out in a period of crisis, due to the Covid-19 pandemic in 2021.

Thus, understanding the concept of autonomy is a dynamic process of collective construction, according to Barroso (1996), and is constituted in a practice of relationships (Contreras, 2012), which makes this process multivocal, according to Engeström (2016). According to Lopes and Macedo (2011), these relationships are determined by the curriculum in a practice of power and on a stage of conflicts and contradictions when understood as a field of political disputes inside and outside schools.

In this way, when analyzing the curricular proposal for Roberto's STP, we observed that he initially intended to develop a project called "Education and Biotechnology" in the *questioning stage* of the expansive cycle, in an attempt to get closer to the area of engineering that he would have liked to have studied, but which he couldn't afford, a primary contradiction for the pre-service teacher, and furthermore the topic was not related to the teaching of science in basic education initially requested by the course teachers. However, this stage was not shared with the basic education institution where Roberto would apply the project, the subject of which could have a collaborative vision and a deliberate effort at collective change.

In the *situation analysis stage*, Roberto changed the topic of his STP and decided to focus on the topic of "Alcoholic beverages through the intersection of science, technology and society (STS)", because he had to move on to *the modeling stage* and present a simplified and explicit model of the new idea in a way that was coherent with the real life needs of the students and their contradictions. Roberto reconciled his studies for teacher training with a job in a supermarket, a reality faced by many Brazilian pre-service teachers, and it was in this context that he managed to find a way out of his internal crisis regarding the choice of the STP topic, as he observed the increase in alcohol consumption during the pandemic from a critical analysis of the reality that surrounded him. Resolving the contradictions and conflicts he experienced brought him closer to the object of the activity and towards his autonomy as a future teaching professional.

The *examination stage* of the model took place in the study activity as a moment of collective training involving colleagues and course teachers in which they presented the development of the project. In the *implementation stage* of the model, in which the proposal is implemented in the classroom of the internship school, Roberto changes his social role from student to teacher. However, there were difficulties in implementation, as the previous stages were carried out without any relation to the professional learning activity, leading to differences between the proposals and the content of the STP and the secondary school teacher. The internship supervisor therefore allowed Roberto's STP to be applied in his own class.

The moment of *reflection* leads us to point out that Roberto realized that he could make some young people aware of the harmful effects of alcohol consumption, while facing the contradictions of the capitalist system, since he worked selling drinks in the supermarket. Finally, at the *stage of consolidating* the results, we can see that Roberto is moving towards a new autonomy, as he transitions from the role of student to teacher.

Conclusion

We concluded that in order to develop the STP towards dynamic and relational autonomy, it is important to share the object between the activity systems involved, especially the basic education institutions, but this requires investment, political deliberation and valuing teacher training institutions. He noted that there is a need to make it clear to pre-service teachers that the STP is a curricular intervention in basic education and that, therefore, the curriculum and the supervising teacher are important parts of the process. Roberto moved towards his autonomy, which was built up over the course of the professional learning activity linked to the study activity, in which he re-signified his training and became involved with the school culture as a locus for learning and mastering the teachers' activities.

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480 ONLINE - Children in alternative care and the historicity of origins: subjectivity and respect.

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Promoting inclusiveness in social practices

Keywords: children in alternative care historicity subjectivity theory

SHORT ABSTRACT

The research focuses on the human rights of children who are in alternative care, especially those who were separated from their families of origin by some judicial measure of protection.

There is special interest in the human right to one's own life story, promoting inclusiveness in the alternative care from respecting the children's cultural-historicity from their origins.

The research is being developed with theoretical support in the Critical Theory of Human Rights, whose reference author is Joaquín Herrera Flores, as well as in the Theory of Subjectivity by Fernando González Rey, based on Vygotsky's historical-cultural theory.

The methodology of the work is the constructive-interpretive one of González Rey (2005), founded on Qualitative Epistemology, which has as its epistemological assumptions principles that can be listed, in brief synthesis, as: the singularity of production, with the singular being recognized as a legitimate source scientific knowledge (González Rey, 2002); research as a constructive-interpretative process of knowledge (González Rey and Mitjás-Martínez, 2017); and research as a dialogical process of communication between researcher and participants (González Rey and Mitjás-Martínez, 2017). According to Fernando González Rey's Theory of Subjectivity, from a historical-cultural perspective, the emergence of subjective meanings is not a sum, but rather a human process that occurs in the course of experience. This process emerges in culturally organized social life, with the integration of past and future as an “inseparable quality of current subjective production” (González Rey and Mitjás Martínez, 2017, p.63).

EXTENDED SUMMARY

The research focuses on the human rights of children who are in alternative care, especially those who were separated from their families of origin by some judicial measure of protection.

There is special interest in the human right to one's own life story, promoting inclusiveness in the alternative care from respecting the children's cultural-historicity from their origins.

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knowledge (González Rey and Mitjás-Martínez, 2017); and research as a dialogical process of communication between researcher and participants (González Rey and Mitjás-Martínez, 2017). According to Fernando González Rey's Theory of Subjectivity, from a historical-cultural perspective, the emergence of subjective meanings is not a sum, but rather a human process that occurs in the course of experience. This process emerges in culturally organized social life, with the integration of past and future as an "inseparable quality of current subjective production" (González Rey and Mitjás Martínez, 2017, p.63).

Therefore, within the scope of the research, the broad and complex perspective of the right to full respect for the subjective constitution of the child is questioned, as they are faced with a reality in which there is distance from their family references of origin – located in the field of affection, of the bond, of the imaginary and of the memory – by a judicial measure intended to protect.

It is observed, however, that in the Brazilian scenario, the majority of people who experience these family ruptures are inserted in contexts of economic and social inequality, with their cultural and historical references that permeate the exercise of care in different and unique ways. Therefore, it is necessary to consider temporality/historicity as a dimension of subjective meaning, since according to González Rey and Albertina Mitjás, past, present and future are organized as a unit in the movement of subjective configurations, with the aforementioned temporality having a strongly imaginary character in our lives (2017, p. 63).

There is no way to disregard life stories and (auto)biographical contexts of people who are part of a family group: neither adults, nor adolescents, nor children, nor babies. Addressing the theme of social subjectivity, the authors teach us that every experience present in a family is lived as a subjective production through the subjective configurations that "emerge in the course of the stories of its members and the family as an institution" (2017, p. 85). It would not be very simplistic, therefore, for the State to attempt to use a normative and evaluative threshold that is restricted to the hegemonically accepted forms of being in a family in Brazilian society to judge whether a child's stay with their family of origin is or is not appropriate. to preserve their constitutional and human right to full protection? Wouldn't we also be violating the child's right to the development of their individual subjectivity in their family context, which would therefore encompass the social subjectivity in which their family of origin is inserted?

How, then, will it be possible to promote inclusion in alternative care based on respect for the cultural historicity of children since their origins in a context in which social inequality presents itself as a factor in the judgment of their families?

The poster will be presented succinctly within the time provided by the event organizers and the opportunity will be given for participants to ask questions about the work, as well as dialogue will be stimulated through invitations to participate so that interaction between participants is mobilizing criticisms, suggestions and reflections about the work presented.

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481 Promoting caregiver engagement through the co-design of multilingual mathematics activities

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: parent engagement design research multilingual learning at home

SHORT ABSTRACT

Although caregivers with migrant backgrounds possess important and often untapped knowledge, it can be difficult for them to optimally engage in their children's mathematics education at home. If caregivers are limited to the language of instruction for helping with homework and learning, valuable knowledge and engagement could remain unused. In this design study, together with a caregiver we developed, tested, and iteratively adjusted mathematical activities to be used at home, using three design principles: multiple languages, multiple solutions, and game-like. We conceptualized a high-level conjecture that these activities could promote home language use amongst a caregiver with a migrant background and her multilingual child, and that this could unlock caregiver engagement processes. This case study is part of a larger design study in which caregivers are co-designers. The data, collected between September 2022 and July 2023, included observation notes and recordings of 12 one-on-one design meetings (60–120 minutes) with a caregiver. The results of the study indicate that adding certain mathematical features (grid, cm index), and doing the activity as a series with player role reversal can aid in promoting home language use with a caregiver and her multilingual child. Modeling by the caregiver catalyzed a shift from everyday language to mathematical language. In addition, empowerment was observed as caregiver engagement processes associated with the game-like activity. This study indicates how co-design between a researcher and a parent can be used to design math activities that elicit home language use, to unlock valuable caregiver engagement.

EXTENDED SUMMARY

Background

It has long been evident that the engagement of parents and other caregivers in a child's education is important (Barger et al., 2019; Castro et al., 2015). For caregivers of multilingual children with migrant backgrounds, engagement can be uniquely challenging (Antony-Newman, 2019). The funds of knowledge framework (Moll et al., 1992) holds that migrant families have unique "skills, abilities, ideas, practices, and bodies of knowledge" that can be used to promote learning (Williams et al., 2020, p. 478). However, these funds may not be adequately used if caregivers and their multilingual children cannot tap into them, which may happen if the language of instruction is different than their home language. Existing research indicates that caregivers can use the home language to share

mathematical insights with their children (Christensen, 2022; Song, 2016). Our research explores whether and how multilingual strategies in the home setting could enable caregivers with migrant backgrounds to share their funds of knowledge with their multilingual children.

Aim and method

Using design-based research in collaboration with caregivers of multilingual children, we investigate which mathematical activities and materials could support the implementation of multilingual strategies, and how caregivers can use multiple languages to engage in their children’s mathematical learning at home. Starting with a design subject (a realm to be studied, supported using theory), we developed a design conception (a prototype), which was repeatedly tested and iteratively adjusted throughout the process (Bakker, 2018). We determined three design principles founded in theory that would be apart of the design. These design principles were: 1) multiple languages can be used; 2) multiple solutions are possible (there is not one correct answer or description); and 3) the activity is game-like. While a part of a longer design trajectory, this study specifically focuses on the design conception, testing, and re-designing of a math activity with a caregiver (pseudonym: Ulrika). The small scale of the study is chosen because of the novelty of our approach. Results of the co-design process comprised the final design of the activity and caregiver engagement processes that were uncovered based on the caregivers’ report.

Results: final design

In the phase of co-design, Ulrika suggested two changes (a grid and a centimeter reference) to the physical features of the activity, as well as two changes to the game-elements of the activity (conceptualizing the activity as a series and player role reversal). The final design can be seen in figure 1.

Final design as a result of co-design

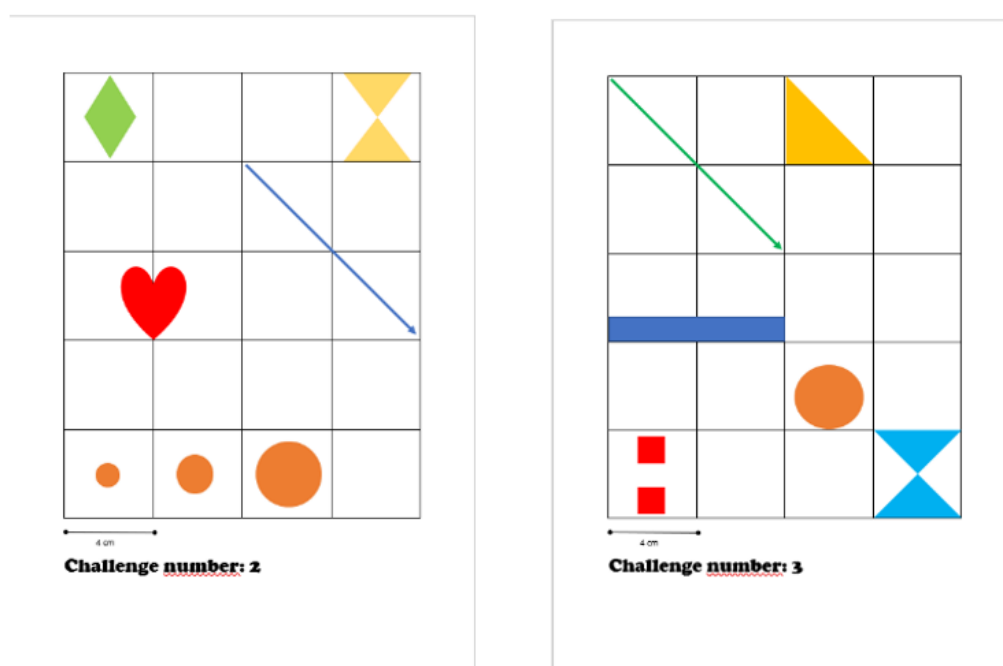


Figure 1

In the first series (three different exemplars) of activity, the caregiver (player A) views the sheet with shapes, while the child (player B) views a blank grid. Player A attempts to describe each shape as precisely as possible, using any language(s) and knowledge. Player B listens actively, asks clarifying questions, and attempts to (using colored pencils) recreate each shape, with the goal of creating an identical sheet. In the subsequent series', roles are reversed.

Results: caregiver engagement

Three caregiver engagement processes through the use of the home language were uncovered. First, Ulrika supported her child using his everyday language to develop his mathematical language through providing translations from everyday language to mathematical language. Using the home language for mathematics activities facilitated this process. Second, Ulrika reported instances of modeling while she enacted the activity at home with her child. She observed him using strategies and vocabulary (in the home language) that had been modeled initially by her. Third, Ulrika seemed to display more ownership—what we interpreted to be empowerment—over time. She noted multiple times “I taught him that” or that she thought her child had learned as a result of her guidance. While doing the activities together, she repeatedly noted moments in which she shared her knowledge (using her home language) with her child, and he was (seemingly) absorbing it.

Conclusions

Reflections of Ulrika indicate that adjusted physical features and game-elements, as co-designed with Ulrika, stimulated the quality of the parent-child interactions, and led to several parent engagement processes. Encouraging the use of multiple languages (and not limiting Ulrika to the language of instruction) during the design sessions allowed the caregiver to take an active role in the design process. Welcoming the use of the home language allowed the caregiver to engage with her child through facilitating the learning of mathematical vocabulary in the home language and modelling. In addition, caregiver empowerment was observed in connection to her taking a more active role in her child's learning using her home language.

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483 The dialectical interrelation between play and learning in STEM in early childhood

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Bringing together theory and practice

Keywords: Play STEM Professional development

SHORT ABSTRACT

The international literature in the field of STEM (Science, Technology, Engineering, Mathematics) learning in early childhood (ec) has highlighted the need of ec teachers for continuous, and high-quality professional development (MacDonald et al., 2020). Empirical findings shows that ec teachers perceive themselves as lacking support, confidence, and knowledge (Park et al., 2017) to integrate STEM into practice. However, as Flear et al. (2022) argue, the difficulty expressed by ec teachers in implementing STEM activities is mainly due to the insufficient pedagogical approach. As Vygotsky (1966) argued, play is a primary aspect of children's development. Thus, supporting teachers in developing STEM play-based activities is a key asset for incorporating STEM in ec. In practice, however, usually one of the two aspects lack of focus and research findings come mainly from play-based settings (Flear, 2019). Following a cultural-historical perspective, this thesis aims to investigate the dialectical-interrelation between play and STEM learning and develop a framework that provides quality indicators to evaluate the dialectical-interrelation of STEM play-based activities. Quantitative data collected from a survey and qualitative data generated as part of an educational experiment (Hedegaard, 2008b) were analyzed from a cultural-historical standpoint. The concepts of motives and demands were the main analytical tools and the data analysis followed the dialectical-interactive method (Hedegaard, 2008a, 2014). The presentation will reflect on and discuss the findings of the questionnaire, the structure of the educational experiment and the axes of the quality indicators which can assess and secure the balance between play and STEM within an activity.

EXTENDED SUMMARY

The importance and effectiveness of play in young children's learning and development is increasingly highlighted in the literature, and there is also an increased effort to interrelate play and STEM in ec education (Fragkiadaki et al., 2022; Magnusson & Pramling, 2018; Stephenson et al., 2021). However, despite that ec teachers report that STEM activities have benefits for children (Simoncini & Lasen, 2018), research related to their teaching choices has shown that STEM subjects are less likely to be included in their curriculum, which seems to be directly related to their proficiency and confidence in the subjects (Gerde et al., 2018; Saçkes, 2014). In addition, there is a need for further training on play to help teachers transform traditional teaching (Bubikova-Moan et al., 2019; MacDonald et al., 2021) by adapting it to the interests and world of the child. Nevertheless, the majority of the research on play and STEM learning in the early years comes primarily from play-based schools, while others use play as a motivator, focusing solely on knowledge acquisition (Bulunuz, 2013; Flear, 2019; Sliogeris &

Almeida, 2019). Therefore, although research on the interrelation of play and STEM has increased in recent years, there is no organized effort to systematically explore their dialectical interrelation and provide a framework that create the conditions for this balance.

This PhD aims to identify the qualitative characteristics and indicators that ensure the dialectical interrelation between play and STEM learning and construct a framework which supports the development of activities that successfully balance these aspects. The dialectical interrelation between play and STEM learning will illustrate the way to equally include both terms in an activity by balancing the use of them and not focusing on the one aspect more than on the other. The thesis research questions are formed as follows:

RQ1: What are ec teachers' attitudes, ideas, and professional development needs about STEM, play as a pedagogical practice and the interrelation between the two?

RQ2: How the dialectical interrelation between play and learning in STEM looks like in practice and how it can be achieved?

RQ3: What are the qualitative characteristics and indicators that ensure the dialectical interrelation between play and STEM learning in educational practice?

In the first phase of the research, quantitative data, collected through a survey that was distributed to ec teachers across Greece, were analysed. The second phase was developed based on the educational experiment method (Hedegaard, 2008b) in which researchers and ec teachers collaborated aiming to investigate the conditions supporting the dialectical interrelation between play and STEM. Initially, 5 in-service teachers took part in the professional development program. Then, through ec teacher-researcher collaboration, the aim was to identify and visualize the dialectical interrelation between play and STEM learning and the characteristic needed to achieve it. Finally, focus groups and stimulated recall interviews were conducted throughout the second phase to better understand the interrelation between play and STEM. The data analysis was based on the cultural-historical framework and Hedegaard's (2008a) three-level analytical framework was used.

Furthermore, the dialectical concepts of motives and demands (Hedegaard, 2014) were used as the main analytical tools as individuals' motives are influenced by the social situation of the setting, and it is important to study the coordination of motives and demands in dialectical relation to the environment in order to change the educational practice (Hedegaard, 2014).

The results for the RQ1 were based on the quantitative data from the questionnaire. According to ec teachers' statements, gaps and needs for professional development were identified in relation to pedagogical approaches and, in particular, play as a STEM teaching tool. Furthermore, qualitative data from the educational practice, the focus groups, and the stimulated recall interviews, which illustrate features of the dialectical interrelation between play and STEM learning, answered the RQ2 and RQ3. The first levels of qualitative analysis have highlighted some principal axes, such as institution, person, and activity settings, that affect the dialectical interrelation between play and STEM and can be transformed into quality indicators.

The present doctoral thesis responds on the challenge of including appropriate STEM learning in ec education. The findings of the research are expected to influence the way STEM learning is delivered in ec education by highlighting the dialectical interrelation between STEM learning and play and the need for this to occur. Finally, the societal impact of the study is expected to be innovative, as a derivative of the research will be a framework with quality indicators that will support ec teachers in

their practice by providing them with a tool to assess their teaching choices and outcomes to help them achieve this dialectical interrelation in their classroom.

During the discussion time the presenter will raise up a set of points that would like to get some feedback such as the use of the dialectical concepts of motives and demands as analytical tools.

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484 Mapping and documenting the process of children's learning and development in science during play

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Bringing together theory and practice

Keywords: Science Play Documentation

SHORT ABSTRACT

In the recent literature there is a gap regarding capturing learning and development in science as a process, rather than a product, within play-based settings and therefore, more research needs to be done to understand and substantiate how learning and development in science occur during play. This doctoral thesis aims to provide new and systematic ways to make visible and map young children's personalized learning pathways during scientific play in the early years. The doctoral dissertation will adopt a cultural-historical approach, studying and interpreting learning and development in science under the lens of the dialectical interaction between the child and the socio-cultural context (Vygotsky, 1967). The research design follows the method of educational experiment as defined by Hedegaard (2008, 2012). The cultural-historical concepts of play, and the interrelation between everyday and scientific concepts are used as the main set of analytical tools. The documentation of children's learning through methods and techniques such as drawings and scientific narratives shed light to children's personalized and unique "learning stories" (Carr & Lee, 2012) in science while playing. Taken together, the outcomes of the PhD thesis will provide a better understanding on how we can demonstrate that preschool children learn through play and construct scientific concepts.

EXTENDED SUMMARY

Background

Longstanding studies in the international literature have shown that preschool children are natural researchers, curious about the physical world around them and they explore concepts and phenomena from the natural world (Trawick-Smith & Waite, 2009; Fazlioglu, Bayir, Günşen & Rumi, 2016; Bulunuz, 2013). The integration of science into early childhood (ec) curricula is a dimension that has been extensively explored (Fleer, Fragkiadaki & Rai, 2020). This focus creates distances from the child's world and overlooks the dominant role that play has during the early years (Vygotsky, 1966, 2004). Therefore, more research is needed to support teaching and learning cultures of science in kindergarten through play. In particular, more needs to be done to understand if and how learning and development in science occur during play.

Capturing children's ideas while engaging in scientific activities is a common practice evaluate and draw conclusions on the knowledge children had before and after a teaching intervention and the evolution of this knowledge (Albin-Clark, 2021). However, what seems to be lacking in the literature is

the mapping of learning and conceptual development during scientific play. While some studies suggest methods of documentation, it is mainly fragmentary and usually comparative (Bulunuz, 2013; Schulz, 2015). More needs to be known and understood about mapping and documenting the entire learning and developmental path that a child follows during their scientific play.

Aims

This cultural-historical thesis aims to give an insight into how we can make visible and document the learning processes that take place during children's engagement with scientific play by exploring diverse methods of mapping and substantiating the process of science concept formation within play-based settings. Thus, the research questions are formed as follows:

In what ways can we map and make visible children's learning pathways in science within play-based activities?

How can we provide evidence that preschool children learn through play and form science concepts?

Methods

The doctoral thesis followed a cultural-historical approach, studying and interpreting learning and development in science through the dialectical interaction between the child and her/his socio-cultural reality (Vygotsky, 1967). The research design followed the method of educational experiment as defined by Hedegaard (2008, 2012). According to the methodology of the educational experiment, ec teachers participated in the research and collaborated with the researcher to create appropriate and condensed developmental conditions for each child to form concepts and phenomena of sciences through play. Therefore, the doctoral thesis aims to create, develop, and support in situ cultures of teaching and learning of science as a real-life experience integrated into the daily lives and educational reality of preschool-aged children. Empirical data were collected in several phases of children's play.

In cooperation with the ec teachers, a wide range of practical tools such as children's drawings and scientific narratives created by children were used. Four (4) kindergartens in North Greece, ten (10) preschool educators, and one hundred (100) children aged 4 to 6 participated in the study. Data collection was conducted through a series of visits to kindergartens, and support of early childhood teachers through a professional development program and planning sessions.

Qualitative data were gathered through a series of visits to the four (4) participating preschools. Empirical data were digitally recorded. Ethics approval was granted by the responsible ethics committee. The cultural-historical concepts of play, and the interrelation between everyday and scientific concepts were used as the main set of analytical tools. The thesis is part of a larger research project entitled PlayProofS (Play-proofing Science) that focuses on enhancing young learners' scientific literacy through play.

Results

The cultural-historical analysis reveals the complexity of children's learning pathways in science and the specific outcomes of their learning in playful contexts. The documentation of children's learning pathways through methods such as drawings and scientific narratives pr seeds light to children's personalized and unique "learning stories" (Carr & Lee, 2012) in science while playing.

Conclusions

By the end of data collection this research project will have contributed to filling a gap concerning the processes of learning and development during scientific play. These results will be a novelty, as the research that has been done so far on documentation ways has been mainly fragmentary and

typically comparative and not often from the perspective of a cultural-historical approach. The outcomes of the PhD thesis will provide us with a set of practices to document and map children's learning and development in science during scientific play, addressing the aforementioned gap in the literature. Finally, it will identify how we can demonstrate that children learn through play and construct scientific concepts while approaching science phenomena, which will be observed during science activities.

How interaction with the participants is planned

The presenter will interact with the audience to get focused feedback on a set of issues such as, the methodology followed, the concepts used as analytical tools, and the qualitative data analysis processes.

References: Acknowledgements The research project Play-proofing Science: enhancing young learners' scientific literacy through play (PlayProofS) is implemented in the framework of H.F.R.I call "Basic research Financing (Horizontal support of all Sciences)" under the National Recovery and Resilience Plan "Greece 2.0" funded by the European Union –NextGenerationEU (H.F.R.I. Project Number: 015253). Albin-Clark, J. (2021). What is documentation doing? Early childhood education teachers shifting from and between the meanings and actions of documentation practices. *Contemporary Issues in Early Childhood*, 22(2), 140-155. Anderson-McNamee, J. K., & Bailey, S. J. (2010). The importance of play in early childhood development. *Montana State University Extension*, 4(10), 1-4. Bulunuz, M. (2013). Teaching science through play in kindergarten: Does integrated play and science instruction build understanding? *European Early Childhood Education Research Journal*, 21(2), 226-249. Carr, M. & Lee, W. (2012). *Learning Stories: constructing learner identities in early education*. London: Sage. Fazlioglu, Y., Bayir, E., Günşen, G., & Rumi, M. C. I. (2016). Teaching preschoolers science through play. *Current Advances in Education*, 603-616. Fleer, M. (2021). Conceptual playworlds: The role of imagination in play and learning. *Early Years*, 41(4), 353-364. Fleer, M., Fragkiadaki, G., & Rai, P. (2020): STEM begins in infancy: Conceptual PlayWorlds to support new practices for professionals and families. *International Journal of Birth and Parent Education*, 7(4), 27-31. Gomes, J., & Fleer, M. (2020). Is science really everywhere? Teachers' perspectives on science learning possibilities in the preschool environment. *Research in Science Education*, 50, 1961-1989. Hedegaard, M. (2008). The educational experiment. In *Studying children: A cultural historical approach*. Open Univ. Press. Hedegaard M, Edwards A, Fleer M (2012) *Motives in children's development: Cultural-historical approaches*. Cambridge University Press, Cambridge. Schulz, M. (2015). The documentation of children's learning in early childhood education. *Children & Society*, 29(3), 209-218. Trawick-Smith, J., & Waite, P. (2009). *Science in support of play: The case for play-based preschool programs*. The Center for Early Childhood Education, white paper. Fall. Vygotsky, L.S. (1966). Play and its role in the mental development of the child. *Voprosy psikhologii*, 12(6), 62- 76. Vygotsky, L.S. (2004). *Imagination and Creativity in Childhood*. *Journal of Russian and East European Psychology*, 42(1), 7-97.

486 Transformative action in sustainability practices: the case of Groene Moslims in the Netherlands

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Presentation: Poster presentation (presented in person at the congress)

Theme: Dealing with climate change

Keywords: sustainability education eco-Islam transformative action Also fits: meaningful education

SHORT ABSTRACT

This study aims to presents insights from a case-study of the pioneering Dutch Islamic foundation for Islamic sustainability, the *Groene Moslims*. The study employs qualitative content analysis of the newsletters of the foundation (N= 26) distributed between 2020 and 2023. Analytically, it is informed by the cultural-historical activity theory and the Islamic pedagogic concept of embodiment, in looking at the emergence of new forms of value-based transformative actions in community-based sustainability education. The results of the study have the potential to contribute to the knowledge of culturally situated practices of role-modelling for youth with Islamic heritage and to feed into sustainability education programs targeting diverse populations.

EXTENDED SUMMARY

Background

This study presents preliminary insights from a single case study that profiles the foundation *Groene Moslims* in the Netherlands. *Groene Moslims* was set up in 2010 initially because the founders noticed that there was a need for organic halal meat. This was not yet readily available at that time. The *Groene Moslims* movement is based on an ethical interpretation of the Islamic concept of halal: according to halal principle, the animals need to be well-cared for, with a natural diet, free from hormones, and they have to be slaughtered with minimal pain for the meat to be halal. This already comes close to the requirements for organic meat, but neither the halal certificate in the Netherlands nor the European halal certificate initiated by the EU standardization body CEN required all that (*Groene Moslims*, 2011a; *Groene Moslims*, 2011b). Also, *Groene Moslims* goes a step further and claims that sustainability is in line with Islamic principles for caring about all living beings.

In time, the movement has expanded in mission and vision beyond its initial goal: it wants to inspire the Muslim community in the Netherlands to live sustainably. For movements inspired by eco-Islam, an Islamic conceptualization of the care for the environment and the role of humans towards it, a vision for sustainability and Islamic values are connected by a shared emphasis on ethical consumption and production in a manner that respects the well-being of humans, animals, and the eco-systems in which they find themselves (Abdelzaher et al. 2019). Today *Groene Moslims* has various working groups, including a book club focused on Islamic environmentalist readings, workshops, and film screenings, it organizes annual green iftar meals during the month of Ramadan, and it expects to start up the educational program Green Muslim Kids in 2024.

Aims

The study explores the role-modelling function of the *Groene Moslims* movement for young Dutch Muslims, and asks: How is a vision for sustainability combined with Islamic teachings in the practices and activities of *Groene Moslims*? It aims to contribute to a better understanding of new forms of value-based transformative actions in sustainability that can be useful in education programs targeting youth with Islamic heritage and culture.

Methods

Methodologically, the study is based on a qualitative content analysis of the newsletters of *Groene Moslims* (N= 26) distributed by the foundation for the last three years (2021-2023).

Theoretically, the study is informed by the cultural-historical activity theory (CHAT): here, it will be applied for a multilayered analysis of the links between the ideas underpinning certain practices and their translation into actions or representations via concrete forms of transformative embodiment (e.g. youth-led vegetarian iftar meals or meatless Feast of Sacrifice Eid al-Adha as a transformative embodiment of (new) Islamic practices of sustainability). Drawing upon notions of transformation within CHAT and particularly the idea that "humans purposefully transform natural and social reality, including themselves, as an ongoing culturally and historically situated, materially and socially mediated process" (Roth et al. 2012, p.1), this study analyses how these young Muslims learn and act while considering the ecosystems they are involved in. Furthermore, embodiment, or actively practicing what is being taught via visible representations and actions, is an integral part of Islamic pedagogy and education (Hardaker and Sabki, 2015; Sözeri et al. 2021, Arjmand 2022). To do justice to the values underpinning the activities of *Groene Moslims*, the pedagogic concept of embodiment and transformative action in teaching and role-modelling in Islamic education will also be employed as an analytical lens.

Results & conclusions

Preliminary findings based on the analysis of the data will be presented and discussed. The insights generated from this case study may map the diverse terrain of climate and sustainability education and shed light on the potential behind community-generated practices for sustainability.

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487 Religious conversion as a dramatic process: becoming a Pentecostal evangelical follower in Brazil

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Dealing with inequality

Keywords: Religion Drama Personality

SHORT ABSTRACT

Pentecostalism has been spreading worldwide, especially in regions with high levels of poverty and social inequality. In Brazil, pentecostalism has found a vertiginous adhesion in recent decades. On a psychosocial level, Pentecostal churches have sought to address human afflictions stemming from concrete experience, as well as stimulating an update on how the subject who adheres to the religion sees themselves and the social world. Adopting Vygotsky's concept of drama as the organization of subjectivity, we aimed to research the drama (dramatic personality) of people who converted to Pentecostalism at any point in their lives. We conducted four life story interviews, with people living in the city of São Paulo/Brazil. The reports indicate that the religious conversion is characterized as a moment of change, signified as the positive outcome of an existential dilemma over conflicts that emerged from concrete experiences. Generally the search for the church was related to a complex psychosocial problem which was influenced by a set of forces. Joining the church implies a personality reconfiguration that is sustained by participation in church activities, reading the Bible, and reconfiguring social relationships. Given the conflict of roles in the dramatic dynamics of the personality, which also mobilizes psychological functions in terms of conflict, the person - as a Pentecostal follower - begins to experience a new process of dramatic constitution. This is due to the fact that the Pentecostal religious role is intended to subordinate and update all the other roles played by the individual in their life.

EXTENDED SUMMARY

Pentecostalism has been spreading worldwide, especially in regions with high levels of poverty and social inequality. In Brazil, the religious segment has found a vertiginous adhesion in recent decades, leading to the construction of churches that are active locally and to the establishment of a religious block that is progressively gaining power to influence social and political spaces (Freston, 2013). On a psychosocial level, Pentecostal churches have sought to address human afflictions stemming from concrete experience, as well as stimulating an update on how the subject who adheres to the religion sees themselves and the social world (Dengah, 2014; Willis, 2020). Adopting Vygotsky's concept of drama as the organization of subjectivity and the axis of human development (Vygotsky, 1929/1989), it is thought that Pentecostal religious conversion is a dramatic moment of reconfiguration of the subject's social role in the world which, in turn, brings forth a personality dynamic that strives to

maintain the subject's constitution as a Pentecostal evangelical follower, guided by the meaning that religion attains for each individual.

Therefore, we aimed to research the drama (dramatic personality) of people who converted to Pentecostalism at any point in their lives. This study proposal entailed identifying the most significant dramatic experiences (*perezhivanie*) before and after religious conversion and the meanings attributed to the self, the social world, and the Pentecostal evangelical church. The life history method allowed understanding each subjectivation process as a dramatic act within the totality that characterizes the life of the subject who is reporting it. Based on a semi-structured script with questions covering the entire biographical trajectory, we conducted four interviews, with three women and one man living in the city of São Paulo/Brazil. This is an ongoing study.

The reports from the interviews indicate that Pentecostal religious conversion mobilizes determining aspects of a person's entire life course and is procedurally established, despite the fact that it can be perceived by the subject as a sudden change. Conversion is characterized as a moment of dramatic change, signified as the positive outcome of an existential dilemma over conflicts that emerged from concrete experiences. In the interviews, the search for the church was generally related to a complex psychosocial problem which was influenced by a set of forces, such as concern for their children in the face of a health problem; suffering and moral conflict as a result of being deprived of their liberty in a prison; suffering and concern due to a risky pregnancy and difficulties in accessing healthcare services; a sense of loneliness and isolation due to the emptying of the family environment, among others.

Joining the church implies a personality reconfiguration that is sustained by participation in church activities, reading the Bible, and reconfiguring social relationships. Given the conflict of roles in the dramatic dynamics of the personality, which also mobilizes psychological functions in terms of conflict, the person - as a Pentecostal follower - begins to experience a new process of dramatic constitution. This is due to the fact that the Pentecostal religious role is intended to subordinate and update all the other roles played by the individual in their life, establishing, for instance, memory conflicts between the religious self of the present and the self of the past; between the desires that emerge from life and the awareness of what is morally correct for the church; between participation in the church and participation in other secular spaces as an ordinary citizen.

In terms of personality, becoming a Pentecostal evangelical follower is perceived as a profoundly positive change, which acquires a distinctive quality in social relationships. The followers describe the church, adherence to religion, and contact with the Bible as processes that enable cultural development, which leads to new changes that deepen the religious complex in their subjectivity. In addition to updating their sense of self-worth, religion is mobilized as a resource that provides a sense of security and support in the face of the uncertainties that characterize the material conditions for maintaining life. In dramatic terms, religious conversion is mediated by a religious role that involves the subject acting in the public environment in such a way that there are reports of them seeking and desiring social transformations based on elements of religion so that the positive experience of contact with the Pentecostal gospel can be experienced by a larger group of people. It is hoped that this work will encourage discussion at the ISCAR conference regarding the application of the concept of drama and human development to issues related to religion and social inequality. We will provide the conference participants a printed copy of this abstract so that they can refer to this resource during the discussion or even contact the authors at a later date.

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488 Algorithmic experiences of young people and the consequences for digital citizenship education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: algorithmic experiences critical media literacy social media platforms Dealing with technology

SHORT ABSTRACT

In this study of the algorithmic experiences of secondary education students in the Netherlands, **our aim** is to contribute to insights on how students gain knowledge on the algorithmic workings of social media and their awareness of how such working might feed into the phenomenon of ‘filter bubbles’. In addition we use this knowledge to build our own educational application: The Filter Bubble App. **Our methodology** included a walk-through exercise and two vignettes. Both methodologies were designed to facilitate reflection on social media experiences in relation to the phenomenon of filter bubbles. Our sample consisted of 18 Dutch pre-vocational secondary school students aged 12-16 years who were frequent users of Tiktok, Whatsapp, Youtube, Instagram, Discord, Snapchat or Reddit. **Results** show students build situational, practical-experiential knowledge of algorithmic workings that is closely in line with the features of the interface of the social media platforms they use. The young users in our study mostly seem to form their imaginations of algorithms based on their ‘smooth’ and positive experiences with the workings of algorithms, which again seemed to be closely related to a sense of control over, and trainability of, the algorithm. Furthermore students rarely reported awareness of the potential problematic nature of information filtering. In this paper, implications for critical media literacy are discussed. We use a CHAT perspective to analyse how students can be provided with system level awareness and agency, as well as insights into the societal-political consequences of algorithmic workings.

EXTENDED SUMMARY

At **the background** of this study is the concern many have voiced that platform logics based on surveillance and maximizing the attention of the user, intervene in traditional pedagogies (Perrota et al., 2021), and that critical education is in danger as a result of the logics and practices of datafication and automation (Sefton Green and Pangrazi, 2021). Algorithmic workings of platforms might prevent us accessing particular knowledge and insights and lock us into ‘filter bubbles’ (Pariser, 2011) or ‘echo chambers’ (Jamieson and Capella, 2008), that limit access to information and opinion formation in ways that are outside our control and consciousness.

In this study of the algorithmic experiences of secondary education students in the Netherlands, our focus is on how students gain knowledge on the algorithmic workings of social media, and in particular their awareness of how such working might feed into the phenomenon of ‘filter bubbles’, online segregation and filtering of information.

Theoretically, we build upon studies that have argued for a reformulating critical media literacy (Sefton-Green and Pangrazio, 2021; Pangrazio and Sefton Green, 2020; Jacques et al., 2020; Perez Vallejos et al., 2017), work on understanding and experiencing algorithms (Eslami et al., 2015; Klawitter & Hargittai, 2018; Swart, 2021; Bucher, 2017; Cotter, 2019) while applying a CHAT perspective in thinking about how new technological infrastructures challenge the way we learn (Ünlüsoy e.a. 2022) and how such perspectives should be integrated in critical media literacy programs.

The context in which this research is carried out is a project in which we are building an educational app which allows students to reflect on the algorithmic workings of their social media apps, by teaching them to build their own platform: [The Filter Bubble App](#).

Our aim is 1. to contribute to insights on how students gain knowledge on the algorithmic workings of social media and their awareness of how such working might feed into the phenomenon of ‘filter bubbles’ while 2. also using this knowledge for our own educational app.

Our methodology included a walk-through exercise and two vignettes. Both methodologies were designed to facilitate reflection on social media experiences in relation to the phenomenon of filter bubbles. Our sample consisted of 18 Dutch pre-vocational secondary school students aged 12-16 years who were frequent users of Tiktok, Whatsapp, Youtube, Instagram, Discord, Snapchat or Reddit.

Results show students build situational, practical-experiential knowledge of algorithmic workings that is closely in line with the features of the interface of the social media platforms they use. The young users in our study mostly seem to form their imaginations of algorithms based on their ‘smooth’ and positive experiences with the workings of algorithms, which again seemed to be closely related to a sense of control over, and trainability of, the algorithm. Furthermore students rarely reported awareness of the potential problematic nature of information filtering. The results showed that students did not apply their knowledge on algorithmic awareness to the possibility of receiving one-sided information on controversial issues, and the risk of being confronted with limited perspectives and opinions. Surprisingly, as our results show, students rarely use their algorithmic awareness and imaginations in terms of how they reason about such risks. Even though they were aware that their content was being filtered by their social media platforms, they still claimed that they were presented with ‘the whole story’, and with multi-sided content.

In conclusion, in this paper, implications for critical media literacy are discussed. We use a CHAT perspective to analyse how students can be provided with system level awareness and agency, as well as insights into the societal-political consequences of algorithmic workings.

How interaction with the participants is planned

We present our conceptual perspective, goals, methodology and key data after which we engage in a dialogue with the audience about the key challenges this research addresses on the reformulation of critical media literacy and how a CHAT perspective is able to shed light on this.

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489 The Study of Discriminatory and Resistance Discourses of Social Movements on Dutch National Identity

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: National Identity Anti-Racism Social Movements

SHORT ABSTRACT

As national identities are collectively imagined, created, and not fixed, they are prone to contest over inclusion and exclusion but also to renegotiation and change. This research aims to understand how a broader and more inclusive national identity can emerge. By bringing perspectives of anti-racist social movements to the fore, this research voices the people who raise consciousness about exclusion and othering. By including these ‘voices from the margin’ this study holds theoretical relevance on national identities as well as practical relevance for policymakers, educators, and professionals.

Methodologically, this study consists of a multiple case study design of four anti-racist social movement organizations in The Netherlands. Data of the first study will be shared answering the following research question: which discourses on Dutchness are challenged by anti-racist social movements? By exploring this research question through the lens of different organizations, this study gives a broader understanding of which discourses on Dutchness are experienced as discriminatory. Three different types of data collection are carried out: A) interviews with key-figures, B) social movements’ website data and C) social movements’ social media accounts data. This study draws on theory from CDA and incorporates a CHAT-perspective in analysing preliminary results. The poster presentation will contribute to a broader conversation on promoting inclusiveness in social practices as it will give examples of discourses that are challenged as well as emerging insights of a more inclusive national identity.

EXTENDED SUMMARY

The recent electoral victory of the Dutch nationalist-populist party PVV, marked by their campaign slogan ‘Nederlanders weer op 1’ (Dutch people back in first place), exemplifies the resurgence of nationalist ideas and sentiments across Europe and beyond. By using the fear of erosion of national identities and adherence to the idea of ethnic homogeneity, right-wing parties draw distinctions between ‘us-natives’ and ‘them-immigrants’ (Alba & Duyvendak, 2017; Duyvendak, 2020; Milačić & Vuković, 2017). At the same time an increasing number of individuals are speaking out against racism and injustices, with the Black Lives Matter protests in June 2020 being most significant (Duyvendak, 2020; Ghorashi, 2020). Social movements, such as ethnic minorities, contest dominant discourses on national identity and present alternative versions to reshape and broaden the boundaries of who is included and who is not (Itzigsohn & vom Hau, 2006). As national identities are collectively imagined,

created and not fixed, they are prone to contest over inclusion and exclusion but also to renegotiation and change.

As social movements challenge hegemonic representations, point out social inequality, and present alternative versions, it would be relevant to understand *which* discourses they contest, *how* they reframe current discourses on Dutchness (national collective identity) and how such reframing can be understood in terms of social transformation. Building upon a Cultural-Historical Activity Theory (CHAT) perspective with respect to the understanding of social transformation and semiotic mediation, this study bridges a CHAT perspective with a Critical Discourse Analysis (CDA) perspective (Collins, 1999) to understand how power relations and racial inequity are constructed in discourses by incorporating the social and historical context. There exists extensive CDA research about how minority groups are depicted negatively by the dominant majority group, mostly by examining the political field (Reisigl & Wodak, 2005; Cheng, 2013), newspapers (Flowerdew et al, 2002; Alameda Hernández, 2008; Cui & Kelly, 2013; Belmonte et al, 2010; Rasinger, 2012; Tahir, 2013) and policy documents (Ndlovu, 2008; Blackledge, 2006). These studies all stress the power imbalances between majority and minority groups and the production of certain ideologies and thoughts about the 'other'. Yet, there exists relatively little research around this topic (exclusion, racism, and discrimination) from the starting point of antagonists that attack these discriminatory discourses. Foucault (1982) stresses the importance of looking at antagonists that oppose or resist these dominant discourses. By focusing this research on anti-racist social movements, this research takes the people who raise consciousness about exclusion and othering, as a starting point. The findings of this research contribute to the academic body of knowledge on national identity and social movements, while also holding practical relevance for policymakers, educators, and professionals. For the poster presentation, the preliminary results of the first study of this research will be discussed, focusing on the research question: which discourses on Dutchness are challenged by anti-racist social movements? In addition, the poster will address the question how such discourses potentially can be reframed and how such reframing can be understood in terms of social transformation.

To answer this research question, a qualitative study with a multiple case-study design of four anti-racist social movement organizations will be carried out. Data collection is based on A) interviews with key-figures of the anti-racism community, B) social movements' website data and C) social movements' social media accounts data. Results will be discussed bridging a CHAT and CDA perspective. The poster presentation will give examples of contested discourses as well as emerging new insights on a more inclusive national identity. After the poster presentation, there is space for people to ask questions. To raise the participation of the audience, a follow-up question will be asked towards the audience: for instance, were you surprised by hearing some of the results and if so, how did your own perspective shifted hearing these anti-racist social movement perspectives? It is hoped that these questions will spark a broader conversation regarding promoting inclusiveness in social practices and inclusiveness as a future challenge.

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491 The potential of the “OGO”-approach for “Transformative Geographical Education”

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Presentation: Poster presentation (presented in person at the congress)

Theme: Dealing with climate change

Keywords: Transformation Geography Ontwikkelingsgericht Onderwijs (OGO)

SHORT ABSTRACT

In view of the current pressing crises, the “value-action-gap” (Chiari et al. 2016: 5) and the great importance of a functioning education in terms of motivating and enabling pupils to participate in transforming their future (Oberrauch & Keller 2016: 1) an educational approach called “Transformative Geographical Education” (e. g. Pettig & Ohl 2023), mainly seeking for ways to adequately prepare pupils for their uncertain future shaped by those multiple crises, has only recently emerged in the (German-speaking) geography didactics, evolving the concept of education for sustainable development. In line with various initiatives and experts (e. g. <https://schule-im-aufbruch.de>) I argue however, that a fundamental reorientation of the structural and organizational framework of (German) school education is needed to make “Transformative Geographical Education” possible. In view of its overarching educational goals and postulates, I further argue, that the „OGO“-approach could provide valuable points of reference in the regard mentioned above. Within two research stays at the development-oriented Gelderlandschool in The Hague I will thus mainly focus on the enabling features of the „OGO“-approach concerning “Transformative Geographical Education”. The methodological framework in order to explore “OGO’s” potentials in relation to the aforementioned interest is primarily oriented towards the principles of ethnographic (educational) research. By using multimodal qualitative research methods, I seek to identify the implicit characteristics, implementation possibilities, and success factors of “OGO”, that cannot be solely derived from a its theoretical examination. During the poster presentation I would like to discuss the superordinate objectives and the methodological embedding of this research project.

EXTENDED SUMMARY

Regarding the pressing crises of our time that no longer allow for delay in action (e.g.: Bedehäsing & Padberg 2017), and considering the fact that the success of a necessary “Great Transformation” (e.g.: Schneidewind 2019) “primarily depends on the field of education” (Oberrauch & Keller 2016: 1, translated by J. K.), my superordinate research interest is focused on the question of how a solution-oriented, transformative, and motivating (geography) instruction can reduce the “value action gap” (Chiari et al. 2016: 5). This concept refers to the fact that “increased awareness of problems [on the part of the students] does not automatically lead to climate-conscious behavior” (ibid., translated by J. K.); the education for sustainable development that has got promoted and actually has widely been implemented in educational institutions in the past decades (e.g., Brock 2018; Bagoly-Simó &

Hemmer 2017) has not been successful in the sense of actually leading to sustainable behavioral changes in terms of “spatial action competence” (Dgfg 2020: 5, translated by J.K.).

This thesis is undermined by the results of a representative population survey on ‘Environmental Consciousness in Germany 2020’, published by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection in 2022, showing that “the willingness to change and environmental behavior in the population appear to be less pronounced than their attitudes towards environmental and climate protection” (Bmuv 2022: 41, translated by J. K.). This especially holds true for the group of 14 to 29-year-olds whose “indicator value for environmental behavior is below average” (ibid.), despite generally having “strong attitudes towards climate protection and a high willingness to change” (ibid.). Consequently we have to ask: Where and why does this theoretical willingness to change run dry? How could this be compensated by appropriate (geography) instruction that not only imparts climate-relevant knowledge but also, in the context of transformative education, considers emotions, creates open-ended spaces where the students’ lifeworlds and futures can be reimagined (Pettig & Ohl 2023), and – above all – generates motivation for action in the face of global (environmental) changes, instead of fostering feelings of powerlessness and passivity? It seems clear that “we need a new kind of education for sustainable development that works, that must work!” (Oberrauch & Keller 2016: 1, translated by J. K.).

A similar demand is also phrased by the ‘teachers for future’-movement who advocate for a fundamental rethinking of education under the premise of a great transformation, that (for instance) formulate the claim that “school learning environments should transform into real-world laboratories and models for sustainable coexistence” (Teachers for Future e.V. 2023, translated by J.K.). This highlights that for transformative education to be effective, different structural and organizational frameworks in order to realize alternative teaching and learning approaches are necessary. Other initiatives (e. g. <https://schule-im-aufbruch.de>; <https://schule-verantworten.education>) suggest that this viewpoint is shared by various actors involved in (German school) education.

Following on from this, my PhD-project aims to investigate the extent to which alternative and reform pedagogical concepts offer potentials concerning a fundamental reorientation of the structural and organizational framework of (German) school education to make ‘Transformative Geographical Education’ (e.g., Nöthen & Schreiber (2023); Pettig 2021) possible. In view of its overarching educational goals and postulates, the focus of the research project will be on the development-oriented approach ‘Ontwikkelingsgericht Onderwijs (OGO)’ (e.g., van Oers 2012) and in how far it could provide valuable points of reference in the regard mentioned above.

The methodological approach in order to explore the potentials of the educational approach ‘OGO’ for transformative (geographical) education is primarily oriented towards the principles of ethnographic (educational) research. It is assumed that the “exploratory identification, questioning, and understanding of institutional and contextual particularities, as well as those lying within the interaction of actors” (Buck 2013: 9) of this specific educational approach can be achieved effectively through the ethnographic “holistic way of understanding” (O’reilly 2005, cited in Genz & Yildirim Tschoepe 2021: 225, translated by J.K.) and thus with the help of “multimodal methodological approaches” (Genz & Yildirim Tschoepe 2021: 226, translated by J.K.). In light of the ethnographical approach, two research cycles of approximately eight to nine weeks each will be conducted at the ‘Gelderlandschool’ in The Hague, involving participant observations as well as qualitative (expert) interviews with students, teachers, and ‘OGO’-coaches at the school.

Finally, the insights gained from both research cycles are related to discursively developed criteria of 'Transformative Geographical Education', which enable critical reflection on its potential with regard to its facilitation in the context of a 'Great Transformation'.

On the basis of prepared theses and critical questions concerning the superordinate objectives and the methodological embedding of the research project, the audience will be interactively involved in the further development of this project during the poster presentation.

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493 Taking back control: youth agency and transformative sports education to overcome violent contexts

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: youth agency neighbourhood violence sports education Dealing with inequality

SHORT ABSTRACT

This paper examines the complex dynamics of youth agency in violent contexts and considers the transformational potential of educational environments against the backdrop of a community history of multiple forms of violence. Based on a qualitative longitudinal analysis of young people's trajectories engaged in community sports programmes in a Brazilian slum neighbourhood, we investigate how they develop strategies to deal with violence and create alternative future pathways. We adopted a sociocultural-historical approach to data analysis focused on the youth's strategies to develop resilience and resistance to neighbourhood violence, how these changed through time and were related to participation in educational sports programmes. The results demonstrate the importance of developing a highly tuned set of different levels of (perceived) agency. As youth came to understand violence in the neighbourhood as largely beyond their control, they altered their strategies to negotiate related external constraints in order to nevertheless make a future for themselves. Encouraged by a shared moral discourse, their participation in sports education fostered not only *individual* agency, but also provided a *collective* resource for resilience and resistance towards violence and social stigma attached to the neighbourhood. Following Freire's (1994) reflections and related dynamic perspectives on agency (Evans, 2007; Bisgaard, 2021), we interpret their strategies for resilience as acts of resistance, directed at re-creating their environment and future prospects. Finally, using a CHAT perspective towards social transformation, we consider how bottom-up and context-based educational (sports) interventions can enhance opportunities for agency to overcome structural constraints and challenge disempowering social systems.

EXTENDED SUMMARY

Youth's exposure to violence and reported detrimental consequences (e.g. post-traumatic stress, poor academic functioning, gang involvement) cause great concern worldwide (UNICEF, 2016). In a violent environment with limited control, learning to navigate external circumstances and negotiate opportunities for agency might be crucial. Some youth join gangs as a strategy to take care of themselves, particularly when they cannot rely on public safety and face deprivation and social exclusion (Ilan, 2015). Whereas numerous studies have investigated gangs around the globe, there's less knowledge of youth who haven't joined gangs and their strategies to deal with neighbourhood violence (Baird, 2012). Some evidence suggests that sports programmes can contribute to youth's resilience in these contexts (Grossman, Johns & McDonald, 2014).

Building on the insights of dynamic perspectives on agency and resilience (Bisgaard, 2021; Evans, 2007), this study aims to shed more light on the situated character of youth agency and how sports education might support agency development in violent contexts. We investigate the perspectives of youth participating in educational sports programmes in a Brazilian slum neighbourhood. How do they find ways to enhance their agency in a context with high levels of violence that poses constraints on their future paths? Can their strategies be read as resilience and resistance to violence? And what role does their participation in community sports play? This paper aims to answer these questions based on qualitative longitudinal analysis of their trajectories from adolescence towards young adulthood. Using a CHAT perspective towards agency and transformation we discuss implications for educational interventions.

The study site is a community on the outskirts of Salvador, an area characterised by poor housing, infrastructural deficiencies and a lack of public services (Carvalho & Arantes, 2021). Socio-spatial inequalities are reflected in limited access to education, employment and public safety (Firpo de Souza Porto et al., 2015). In absence of adequate government policy, slum residents formed community organisations, providing various services including educational sports programmes (Gohn, 2014).

Data was collected over the course of six years through in-depth interviews with six youth during ethnographic fieldwork. Firstly, a comprehensive process of thematic analysis was applied (Braun & Clarke, 2006), with the central focus on young people's strategies to deal with neighbourhood violence and construct alternative future plans. Secondly, a qualitative longitudinal case study analysis (Thomson, 2007) was conducted to analyse changes through time. These combined analyses were directed at understanding *how* these youth became resilient and resistant to neighbourhood violence and identifying patterns to understand *why*, including the potential role of community sports education.

The findings show that 'control' was central in youth's strategies to protect themselves from violence and prevent gang involvement, reflected in how they learned to strictly control where (not) to walk, what (not) to talk about, and who (not) to hang out with. Although these restrictions partly blocked action, they also seemed to provide a way to feel in control and create opportunities for agency while faced with limiting circumstances. Encouraged by their participation in sports (karate), where they learned control, discipline and determination in a supportive community, they grew a stronger belief in individual change. While over the years most youth tried to accept the idea that changing the violent situation on a neighbourhood or societal level was beyond their power, karate's philosophy encouraged them to develop themselves and care for others. The sports programme deliberately displayed an opposite morality focussed on care, nonviolence and personal change, which can be considered an implicit form of resistance to the street environment. Being part of a supportive sports community made youth feel they have the inner strength to resist the attraction of gangs and create alternative future possibilities. Our findings show that their refusal to participate in gangs, despite financial difficulties, did not only articulate opposition towards violence but also towards social stigma. They refused dominant society's stereotype, framing youth from their neighbourhood as criminals, determined to show people wrong.

Our findings demonstrate that youth developed a flexible set of different levels of perceived agency, adapted to the context. We would like to discuss how educational interventions can be designed to not only foster internal control beliefs, but encourage dynamic interplay between acceptance of

external circumstances and belief in the impact of youth's own and collective efforts. Furthermore, we would like to discuss how (sports) education, in addition to promoting *individual* agency, also can provide *collective* resources for resilience through shared philosophies and supportive communities. How can educators encourage dynamic agency to overcome paralysis created by despair and fear to collectively come to creative solutions to thorny issues? How can we shift an individualised educational focus on qualification of assets to overcome structural constraints, towards fostering youth's agency to collectively resist systemic barriers like inequality and re-create social systems? Through a quick inventory we will select discussion topics that best fit the audience's interests.

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494 Contributions of Theory of Subjectivity to gender and sexuality studies

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: gender sexuality theory of subjectivity

SHORT ABSTRACT

This paper presents a theoretical reflection, which aim to discuss the contributions of González Rey's Theory of Subjectivity in a cultural-historical perspective to gender and sexuality studies, in order to open up new explanatory avenues for these phenomena. From this perspective, subjectivity is ontologically defined by the integration and dialectical articulation of emotions and symbolic processes, forming new dynamic qualitative units: subjective senses and subjective configurations. In this perspective, subjectivity refers to a complex symbolic-emotional system, which is configured by individuals and social groups, through the interweaving of individual and social subjective productions in various dimensions of life. From this perspective, sexuality and gender are understood as individual and social subjective configurations, which are generated from subjective processes that the person neither directs nor controls. Individuals and social groups subjectively configure gender and sexuality during lived experiences, within various social contexts, fed by different cultural practices, including cisheteronormative ones, which are tensioned by the actions of individuals and social groups. This means that individuals and social groups can produce alternative paths of subjectivation to cisheteronormativity, in order to generate new subjective configurations related to gender and sexuality, which can favor the subjective development of individuals who experience sexual and gender dissidences. This opens up a way forward in proposing new relational practices that are oriented towards the emergence of the subject, favoring the opening up of more authentic and less repressive paths of subjective expression of sexuality and gender, which are always beyond normative control and intentionality.

EXTENDED SUMMARY

Gender and sexuality studies have become fundamental theoretical productions for shaking up various "instituted truths" by colonial patriarchy, overcoming the biologizing, individualistic and fragmenting approach to gender and sexuality, by emphasizing how symbolic constructions organized in social practices constitute the actions of individuals beyond their consciousness (Beauvoir, 1980; Wittig, 1980; Rubin, 1984; 1993; Scott, 1990; Butler, 2003; Rich, 2012; De Lauretis, 2016). However, based on the discursive turn in the social sciences, these analyses of the social often neglected the individual as an active dimension of these symbolic constructions, falling back on sociologizing explanations by hiding the generative dimension of subjectivity in the constitution of human processes (González Rey, 2018). The individual began to be understood as an epiphenomenon of dominant social discourses, rather than as an agent that generates and tensions symbolic processes.

In this context, subjectivity was reduced to the intrapsychic dimension of the human being, and was not recognized as a constituent dimension of the genesis of historical-cultural processes.

Based on criticisms of this dominant context, which has neglected the study of subjectivity in the social sciences and cultural-historical psychology, Fernando González Rey proposes the Theory of Subjectivity within a cultural-historical approach as a theoretical system that specifies the subjective quality of human processes, both individual and social (González Rey; Mitjáns Martínez; Goulart, 2019). His new ontological definition of subjectivity doesn't restrict the understanding of human phenomena only to the symbolic processes that constitute them, such as discourses, social representations, and social norms (González Rey, 2018). It highlights the generative role of emotions linked to symbolic processes, both in terms of individual and social processes (González Rey, 2022). From this perspective, individuals are constituted by social processes, just as they constitute, tension, and develop social processes, in a recursive way, based on their own subjective productions. This opens up a way of understanding not only how culture produces individuals, institutions and social groups, but also how culture is (re)organized and produced by individuals, institutions and social groups, in their singular social practices based on the actions of agents and subjects, in different ways in each historical period.

This paper presents a theoretical reflection, which aim to discuss the contributions of González Rey's Theory of Subjectivity in a cultural-historical perspective to gender and sexuality studies, in order to open up new explanatory avenues for these phenomena. From this perspective, subjectivity is ontologically defined from the integration and dialectical articulation of emotions and symbolic processes, forming new dynamic qualitative units: subjective senses and subjective configurations (González Rey, 2019). Subjectivity refers to a complex symbolic-emotional system, which is configured by individuals and social spaces, through the interweaving of individual and social subjective productions in various dimensions of life.

In this regard, gender and sexuality are inseparable from other subjective senses resulting from the way in which individuals subjectivize multiple other social symbolic constructions in their lives, such as race and social class, for example. Therefore, both gender and sexuality are understood as complex, singular and procedural subjective productions, which are subjectively configured in the experience of different individuals and social groups, who have lived through different histories and cultural/social contexts, so a universal form of configuration for these phenomena cannot be established. The process of subjective configuration always takes place procedurally and in tension with new subjective productions currently being produced by individuals (individual subjectivities) and social groups (social subjectivities) (González Rey, 2018). This process is responsible for the development of culture in each historical period.

Subjectivity is a way of understanding how culture is singularly experienced, tensioned and (re)constructed by individuals and social groups in their interrelationships (González Rey, 2016). In this perspective, cisheteronormativity represents a dominant social norm that has been subjectively configured in several social spaces in our current historical time, does not take shape in the lives of individuals as an objective and deterministic reality. It is always lived singularly, being tensioned and reconstructed by the subjective production of individuals and social groups based on the subjective configurations that emerge in their actions. This means that individuals and social groups can produce alternative paths of subjectivation to cisheteronormativity, putting pressure on cisheteronormative social subjective configurations in order to generate new subjective configurations related to gender

and sexuality, which can favor the subjective development of individuals who experience sexual and gender dissidences, for example. This opens up a way forward in proposing new relational practices that are oriented towards the emergence of the subject, favoring the opening up of more authentic and less repressive paths of subjective expression of sexuality and gender, which are always beyond normative control and intentionality.

During the final 10 minutes of presentation the interaction with the participants will take place. This exchange will be encouraged through mobilizing questions on the topic presented, inviting participants to share their doubts and thoughts.

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496 The pedagogy of translanguaging and its potential for change: A systematic review

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: translanguaging migration boundary work

SHORT ABSTRACT

This presentation introduces the results of a systematic review which examines the potential for change involved in translanguaging when it is used as a pedagogical approach for multilingual children with a migrant background engaged in content learning. A pedagogy of translanguaging involves encouraging the use of children's home languages alongside the mainstream language; as such, it is claimed to lead to change by fostering learning, inclusion, and equity. This systematic review followed the PRISMA guidelines for identifying and selecting publications and it included 94 publications. To shed light on the results, we employ a boundary-work lens, following the work of scholars such as Akkerman, Bakker, Gieryn, and Thomson Klein. Boundary work is understood here as encompassing the ongoing efforts involved in boundary creation, maintenance, and crossing, as well as the continuity and discontinuity in action and interaction that such processes involve. The results of this review highlight that translanguaging involves a promising potential for change, enabling boundary crossing and establishing continuity across learning settings for multilingual children. Such continuity is materialized by supporting content learning, playing a strong-socioemotional role, and a disruption of oppressive power relations. However, the results highlight that this continuity comes embedded in an interplay with (new) boundaries and discontinuities for both educators and multilingual children. It is by paying attention to this dynamic interplay that we can get nuanced insights into the consequences of decisions taken at policy, institutional, and educator level.

EXTENDED SUMMARY

Against the background of a largely monolingual norm in mainstream education, the voices, experiences and worldviews of multilingual children with a migrant background are often marginalized during their learning trajectories (e.g., Blackledge, 2001; Mallinson, 2024; Rojo, 2010). Moreover, this group of children may face the "double challenge" of acquiring disciplinary content in an additional language of instruction which they are also simultaneously learning (Karlsson et al., 2019; Nygård Larsson & Jakobsson, 2017). A pedagogy of translanguaging involves encouraging the use of children's home languages alongside the mainstream language; as such, it is claimed to lead to change by fostering learning, inclusion, and equity. This presentation introduces the results of a systematic review which examines the potential for change involved in translanguaging when it is used as a pedagogical approach for multilingual children with a migrant background engaged in

content learning. This systematic review followed the PRISMA guidelines for identifying and selecting publications (Page et al., 2021) and it included 94 publications.

To shed light on the results, we employ a boundary-work lens understood as encompassing the ongoing efforts involved in boundary creation, maintenance, and crossing, as well as the continuity and discontinuity in action and interaction that such processes involve (Akkerman & Bakker, 2011; Gieryn, 1983; Thompson Klein, 1996).

The results of this review highlight that translanguaging involves a promising potential for change, enabling boundary crossing and establishing continuity across learning settings for multilingual children. Having the opportunity to employ the home language alongside the mainstream language at school, and out-of-school settings, such as homework clubs, libraries, or museums allows children with migrant background to use all their resources, knowledge and worldview to learn better: translanguaging does not only provide access to content for newcomer children, but it enriches disciplinary content meaning-making for all multilingual children. Furthermore, it plays a strong socio-emotional role, and, from a broader perspective, it can partially disrupt oppressive power relations. However, the results highlight that this continuity comes embedded in an interplay with new boundaries and discontinuities for education systems, institutions, educators and even multilingual children. Translanguaging both leads to and requires certain discontinuity for educational settings, entering a strong tension with the monolingual norm. For translanguaging to happen, a boundary against the monolingual norm is needed, and changes at the level of ideology, policies, attitudes, pedagogical knowledge, structural conditions, and practices need to take place. At the same time, potential discontinuities for multilingual students have also been reported: translanguaging enters a tension with the curriculum, and lessons are sometimes slower than regular; as a result, multilingual children may experience missed opportunities to practice subject-specific content. Furthermore, while translanguaging may ensure continuity across home and school for certain children, it can also lead to the emergence of group boundaries, where certain students may feel excluded when they do not share the same home language with others. Importantly, the discontinuities for multilingual children are reported to a much smaller degree in comparison to the continuities it can foster. Furthermore, it is key to highlight that neither continuities nor discontinuities are fixed, but rather emerge in a constant, dynamic interplay that can be regulated in different ways in each learning setting depending on the specific socio-historical conditions which characterize it. It is by paying attention to this dynamic interplay that we can get nuanced insights into the consequences of decisions taken at policy, institutional, and educator level.

In this presentation, the audience will be expected to engage in a reflective discussion regarding the role of home languages in mainstream education.

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497 Cultural commodities: searching for developmental potential in a home-school project

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Imagining future worlds

Keywords: cultural commodity capital curriculum Dealing with inequality

SHORT ABSTRACT

This paper presents a new empirical application of our ‘cultural commodity’ concept - defined elsewhere as a dialectical unit of ‘knowing in practice’ which holds developmental potential (see Black et al., 2021). Drawing on Marx’s analysis of capital, we argue that this ‘cultural commodity relation’ allows us to recognise the contradictory unity of both use value and exchange value in unpacking home-school relations in ways that can help explain or see potential for development and change. We present data from a home-school project located in an area of high poverty in the North of England. During the project, we worked with parents/caregivers to surface the tensions they experienced in navigating the expectations of their children’s school and we also presented these tensions back to teachers within the school. The paper will seek to identify if/how such tensions can be said to exemplify the aforementioned ‘cultural commodity relation’ in order to speculate whether they offer developmental potential if they can be harnessed by communities, social movements, schools and researchers to challenge and overcome the class contradiction inherent in schooling.

EXTENDED SUMMARY

In our previous work, we have drawn on Bourdieu and Passeron (1990) to critique pedagogic approaches that seek to address educational ‘disadvantage’ by merely surfacing ‘capital’ in the home and community and/or scaffolding the movement of such capital from home into school as a means to generate educational success for the individual student (Black et al, 2021). Williams (2016) notes that whilst this may offer private capital gain for the individual, it may do nothing to challenge or transform unequal structures operating within schools or the positioning of families as serving the needs of the school (and its obligation to aggregate its indicators of success, e.g. qualifications and exam results).

To address this concern, we have outlined our concept of ‘cultural commodity’ (drawing on Marx’s analysis of capital) which recognises the dialectic relation of use and exchange value in framing how schools might overcome alienation and serve both their own needs and the needs of oppressed families/communities as a public good (Black et al., 2021). Our reference to ‘use value’ here, draws on what Zipin et al., (2012) have identified as knowledge that has use for life in a social setting. Zipin et al., (2012) also note the tensions that arise when generating such knowledge within an educational system that seeks to produce knowledge that has market or exchange value – to be exchanged for qualifications which serve to stratify and select, and thus reproduce oppression . Crucially, our concept of cultural commodity implies that knowledge (or knowing) does not have *either* use-value

or exchange-value (as implied above) but instead contains a contradictory unity of both that might explain the cultural dynamics involved when unpacking how everyday knowledge and the academic curriculum relate to one another. Our purpose in unifying these values in one commodity relation is to identify forms of knowing/knowledge in our work that can help explain/see potential for development and change.

In this paper, we seek to identify a new empirical application of our 'cultural commodity' concept by drawing on research with a group of caregivers/parents living in an oppressed community in the North of England. This work focuses on surfacing the conflicts and contradictions experienced by parents between their lived experience of surviving poverty and meeting the expectations of school. The parents and caregivers we are working with live in a high-poverty area (pseudonym 'Hillington') and Emilia (first author) occupies an 'insider' position as a fellow parent with situated knowledge of the Hillington estate and the participants involved. Emilia and this particular group of parents/caregivers all have children attending the same primary school (St Catherine's – pseudonym) and all have historically experienced difficult relationships with the school for a variety of reasons. The data we present involves observations of parent/carer and teacher interactions in home-school-community settings, semi-structured interviews with families and informal 'ad hoc' conversations through social media which took place on a regular basis, including periods of national lockdown over the COVID-19 pandemic. A key feature of the project was that the parents/caregivers (and Emilia) were positioned as enabling their children's teachers to 'see' the tensions they experienced in navigating the expectations of the school and for this reason, conversations with teachers at St Catherine's also form part of our dataset.

The paper will present various examples of tensions reported by parents regarding their relationship with the school during the project - some of which were presented to teachers by the researcher for their reflection. These examples relate to issues such as homework, reading, parental voice and mathematics. Firstly, we consider how such contradictions manifest the structural class contradiction between the schools' obligation to reproduce 'capital' and parents who feel 'othered' or 'looked down on' by the school. Secondly, we consider how such contradictions relate to the use-value/exchange value dialectic enacted through our concept of the cultural commodity relation. We speculate that these cultural commodities might offer developmental potential if they can be used by communities, social movements, schools and researchers to challenge and overcome the class contradiction inherent in schooling.

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499 Bloomsbury Handbook on CHAT: a discussion on themes for potential authors

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Presentation: Discussion table (45 minutes)

Theme: Bringing together theory and practice

Keywords: Cultural historical Activity theory Handbook

SHORT ABSTRACT

In this discussion table we provide an opportunity for scholars interested in contributing to the Bloomsbury Handbook on Cultural Historical Activity Theory to engage with the editors of the book and discuss potential chapter contributions to the book. The discussion table will be held as a sister event to a similar session held as part of the American Educational Research Associations (AERA) Cultural Historical SIG's programme at AERA's annual conference in Philadelphia in April 2024. As such, it aims to continue discussing the handbook's aims, central ideas and core themes with the ultimate goal of securing good alignment between various contributions across the handbook and its sections. Importantly, the open nature of the discussion table format allows for us, the editors, to invite and entice contributions from a wider and diverse community of CHAT scholars than conventional editorial processes allow.

In recent years, we have seen a number of books published that present and discuss the wide range of scholarly work done within the cultural historical research paradigm (e.g., Levant, Murakami & McSweeney 2024; Yasnitsky, van der Veer & Ferrari, 2014). The new Bloomsbury Handbook on Cultural Historical Activity Theory continues the same initiative with the aim of widening the range of topics, discussions and contributing authors even further. What underscores the need to continue the effort of the previous volumes, is the continuing theoretical fragmentation prevalent in the field of the social sciences and to which the work done within the cultural historical parading offers a clear counter move to.

EXTENDED SUMMARY

In recent years, a number of books have been published that present and discuss the wide range of scholarly work done within the cultural historical research paradigm (e.g., Levant, Murakami & McSweeney 2024; Yasnitsky, van der Veer & Ferrari, 2014). The new Bloomsbury Handbook on Cultural Historical Activity Theory we are currently in the process of editing continues the same initiative with the aim of widening the range of topics, discussions and contributing authors even further. What underscores the need to continue the effort of the previous volumes is the continuing theoretical fragmentation prevalent in the field of the social sciences and to which the work done within the cultural historical parading offers a clear counter move to.

In the discussion table we will provide an opportunity for scholars interested in contributing to the upcoming Bloomsbury Handbook on Cultural Historical Activity Theory to engage with the editors of the book and discuss their potential chapter contribution to the book. The discussion table will be held as a sister event to a similar session held as part of the American Educational Research Associations (AERA) Cultural Historical SIG's programme at AERA's annual conference in Philadelphia in April 2024. As such, it aims to continue discussing the handbook's aims, central ideas and core themes with the ultimate goal of securing good alignment between various contributions across the handbook and its sections. Importantly, the open nature of the discussion table format also allows for us, the editors, to invite and entice contributions from a wider and diverse community of CHAT scholars than conventional editorial processes allow.

The discussion will be centred around the tentative main themes of the book. The participating editors will shortly introduce each theme as well as previous discussions around them at the previous sister event. The editors will also provide a short overview of the expected production schedule for the handbook. The rest of the allotted time is reserved for participant questions, joint discussion and collaboration between the participants and the editors.

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501 Emerging transformative agency in volunteerism: A case of children's cafeterias for children in need

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Transformative Agency Volunteerism Child Poverty

SHORT ABSTRACT

The current relative poverty rate for children in Japan is 15.4%; that is, one in every seven children lives in poverty. Although the government and welfare organizations are providing support, the support remains standardized, linear, and rule-based, despite the diversity in children's backgrounds, and does not necessarily meet the children's needs. Under these circumstances, "children's cafeterias" are attracting attention. There are two main forms of its operation: public and private. Currently, more than 7,000 children's cafeterias are in operation in Japan. Drawing on the author's past five years' experience in conducting field research on one of those children's cafeterias, this study explores the evolution of and changes in unorganized activities. The cafeteria strives to provide support to the children according to their diverse circumstances. As it's not publicly organized cafeterias, it cannot develop standardized manner, so they need to keep trying to find goals/object of this activity with the owner and volunteers. The author conducts qualitative analyses of the field notes, interviews, and meeting records obtained through five years long project with this cafeteria based on Cultural-Historical Activity Theory (CHAT). The author examines factors that ensure diverse support and the nature of the volunteers' collaboration process by observing how they build mutual trust, clarify their object of this activity. And share their experiences and cases with each other, as part of the volunteer's expansive learning process (Engeström, 1987).

EXTENDED SUMMARY

Background

The growing diversity awareness has brought attention to diversity in various dimensions, which can lead to inequality. Despite Japan being one of the most developed countries in the world, socially vulnerable children are left to suffer because of increasing social fragmentation. The current relative poverty rate for children in Japan is 15.4%; that is, one in every seven children lives in poverty. However, the support provided by government authorities remains standardized, linear, and rule-based; it does not consider the diversity in children's backgrounds and may not meet the children's needs. Consequently, there is an urgent need to find appropriate support.

Aims

Children's cafeterias may be seen as an organization that is capable of providing support tailored to their diverse needs. While some children's cafeterias are publicly supported and some are private, a commonality among them is that they are largely run by volunteers. this study explores the evolution of and changes in unorganized activities like children's cafeterias. This study aimed to trace the

process of creation and change in unorganized activities through a field study of one such children's cafeteria, which is operated by a private business owner and is a private entity that does not receive public funding. With the help of volunteers, the owner strives to provide support to the children according to their diverse circumstances. Therefore, the purpose of this study is to examine how volunteer organizations, which are not fixed organizations, fulfill children's needs, based on the Cultural-Historical Activity Theory(CHAT).

Methods

Drawing from the experience in conducting field research through five years long project with this cafeteria, the author conducts qualitative analyses of the field notes, interviews, and meeting records obtained through. First, I will examine cases of failure in attempts to organize as fixed public organization like NPO. Next, I will examine what happened in the cases where volunteers, including owners, were united.

Results

Many people have volunteered in this cafeteria since it opened in 2019. There was a movement to incorporate it as a non-profit organization or an incorporated association because being registered as a public organization is assumed to have advantages such as social recognition and the ability to obtain grants. However, this did not materialize. What we found was that in providing support to children, first volunteers need to connect and trust with each other rather than operating as an organization. The sustainability of support activities relies on the connection of volunteers through the sharing of practices. In this case, shared stories about one of the children's development functioned as mediating tools and became a major turning point. Regarding the activities organized by volunteers, a semi-figurative mediating tool was based on shared experiences accumulated through concrete practices, rather than being based on an explicit and concrete organization of activities; in this case, children's stories became an agent for collaborating. Given the diversity of children's backgrounds, we found that stories that could be shared by members, rather than concrete rules or practices or abstract slogans, were the important medium that drove this activity system. The mediation of concrete objects functioned as a medium to transcend the contradictions of concrete; this formed the foundation for each of the volunteers to engage as an agent. Unlike abstract slogans or concrete rules, children's stories became tools that could be positioned between them.

Conclusions

Support for diverse and uncertain practices is fraught with practical contradictions; therefore, it may be necessary to guarantee a relationship in which supporters can try to transform the current situation agentively from time to time to respond flexibly to these contradictions. That is, "knotworking" (Engeström, 2016), rather than a fixed organization, is more effective in implementing practices that require responses to diverse needs, such as child poverty support. Furthermore, the actions seen in this case, seeking to transform the activity systems in which they are involved, are what is being discussed as transformative agencies (Sannino, 2015, 2022). This study contributes to the discussion on the emergence of transformative agency in ambiguous systems, such as this volunteer group case.

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504 A Cultural Historical Perspective on Emotional Education

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: Emotion Development Emotional Education

SHORT ABSTRACT

The objectives for this session are twofold. First, in the interest of creating an ongoing, generative dialogue, we have joined researchers from around the world who are working in very different educational contexts and are all interested in applying a cultural historical perspective to understanding emotional processes. Second, many of us have already engaged in dialogue together for two years and at other conferences, and we are striving to articulate a coherent understanding of emotional education from a cultural historical perspective. The session starts with a first paper, in which a cultural historical perspective on emotional education is outlined with original references within Vygotsky's work and summarizes some of the recent theoretical contributions made by Western researchers. After this general paper, the next contribution focuses on the emotional impact of adversity within the context of community college, contrasting mainstream discussions of trauma to the legacy of Vygotsky's work to consider how educational systems can address trauma. The third paper presents a study of emotional ideals among Mapuche children entering school in Chile as they engage in an educational system that does not explicitly recognize emotional development or its cultural variations. The last contribution focuses on emotions in post-colonial South Africa's effort to end corporal punishment, working across three generations to investigate how emotional suppression, ambivalence, and acceptance shape views of corporal punishment. The discussant will relate these papers to her own work, in which she has collaboratively created and studied playworlds in educational contexts.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

In recent years, within an effort to rescue the role of emotional processes in Western Psychology, researchers from a sociocultural perspective have returned to the original Vygotskian works. We have taken this new sight, searching for holistic and dialectical theoretical inspiration in order to develop a sociocultural theory on human emotional processes and their development. This search has already produced results as can be seen in the monograph volumes published in *Mind, Culture and Activity*, 2013 and 2016. Our objective for this paper is to collect and integrate different contributions trying to systematize them within a shared frame. We first collect and present the disseminated mentions to

emotional processes within Vygotsky's writings, starting from his first reference to the concept of *Perezhivanie* in *The Psychology of Art* and finishing with his claim for an integrative analysis of cognitive and volitional planes included in his last published work. In the process, we try to understand all his references to emotional content, including his specific *Treatise of Emotions*. After this, we review different current contributions for an updated Vygotskian approach on emotional education. We present Holodynski's theory of emotional internalization (Holodynski, 2013), the theoretical proposal from Magiolino and Smolka (2013), and the work of Ferholt and Lecusay on playworlds and emotional education (Baumer et al., 2005; Ferholt et al., 2018). Finally, we present the contributions from Montero on the role of private speech as a self-regulatory tool for motivational and emotional processes (Atencio & Montero, 2009; Montero & De la Cueva, 2020).

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

During the last years, within a broader claim to rescue the role of emotional processes in Western Psychology, researchers from a socio-cultural perspective have returned to read the original Vygotskian works. We have taken this new sight searching for holistic and dialectical theoretical inspiration in order to develop a socio-cultural theory on human emotional processes and their development. This search has already produced some results as can be seen by reading, for example, the monograph volumes published in *Mind, Culture and Activity* in 2013 and 2016. Our objective for this paper is to collect and integrate different contributions trying to systematize them within a shared frame.

We first collect and present the disseminated mentions to emotional processes within Vygotsky's writings. We start with his first reference to the concept of *Perezhivanie* in *The Psychology of Art* (Vygotsky, 1925/1971), as well as his use within the explanation of the personality development (Vygotsky, 1935/1994), considering this concept that recently has produced strong interest (see Clarà, 2016). But at the beginning we also refer to his earlier mentions to emotion and emotional education in his *Educational Psychology* (Vygotsky, 1926/1997) a less mentioned book, finished by 1923 (see Blank, 2001). We finish this first section presenting his claim for an integrative analysis of cognitive and volitional planes of the Human Psyche included in his last published work (Vygotsky, 1934/1987) taking also into account his own notes (Zavershneva & Van der Veer, 2018). In the process, we try to understand all his references to emotional content, including his specific *Treatise of Emotions* (Vygotsky, 1933/2004), keeping in mind that he was not able to organize all of his ideas on these issues and that we are making is just a sort of hypothesis on his own conceptual development.

In a second part of the paper, we review different current contributions for an updated Vygotskian approach to the human emotional processes, emotional development and emotional education. We first present Holodynski's theory of emotional internalization (Holodynski, 2013) in which proposes a theory for development from birth to adulthood: "the internalization model." This model, echoing Vygotsky's law of the dual formation of higher psychological functions, emphasizes the fact that emotion is externally regulated for newborns (interpersonal regulation) and is supposed to become internally regulated in healthy adults (intrapersonal regulation).

Focused in early childhood, Montero and his colleagues (Montero & De la Cueva, 2020; Sánchez et al., 2006; Vindel & Montero, 2010) have empirically explored the potential of applying Vygotsky's to explain the development of emotional self-regulation through private speech (see Winsler et al., 2009). Studying the use of different emotion regulation strategies among preschoolers in stressful

situations (including the delay of reward task), Montero and his colleagues show that some older participants (with a mean age of six years old) use private speech, while most of the preschool children still used body movements, attention shifting, and searching for adult help as strategies to cope with unsettling emotions.

We also mention the theoretical proposals from Magiolino and Smolka (2013) and Burkitt (2021). The Brazilian authors, following Vygotsky's ideas, assume that emotions are also affected by sign production and transformed by signification and language. They postulated that the dramatic construction of the human subject can be explained by historical-cultural development, psychological functioning and personality formation and presented some examples to illustrate how emotion signifies. Burkitt's (2021) contribution, on the other hand, is framed within the Activity theory, taking into account not only L.S. Vygotsky's perspective but adding A.N. Leontiev's ideas on the role of motivation and needs in personality and social development as well as M.M. Bakhtin's work. In addition, we present contributions coming from educational contexts. We present three different empirical works carried out by Montero and De la Cueva (2020) in Spain, Riquelme and Montero (2013, 2016) in Chile and Mirza (2016) in Switzerland.

Finally, we reflect on the implications of all these review for the formulation of a sort of Vygotskian Emotional Education just in contrast with the main stream approaches to socio-emotional curriculum in Western Schools. We organize our discussion around the following ideas: a) School is not just a context for applying some general knowledge about emotional processes but a socially organized activity which leads development, b) Education should be conceived as an integral/holistic task, c) so we have to promote an experiential emotional education instead of an expert emotional curriculum, d) within this holistic approach, emotion is a product of as well as a tool for learning, kind of *glue* for the Zone of Proximal Development, and e) in such a way in which the integral relationship between emotion and cognition can be managed as a figure/ground dynamics.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Trauma and Adverse Childhood Experiences have gained widespread attention, partly due to research indicating a connection with long-term health disparities. Vygotsky argued against "the isolation of the intellectual from the volitional and affective aspects" (Vygotsky, 1927/2004, p. 40), yet mainstream research isolates variables and cultural-historical activity theory (CHAT) has rarely addressed how adverse emotional experiences affect learning and development beyond identity. Research with community college students, conducted by students, turned to questions about trauma, and student interest in and difficulty speaking about adversity is evidence of the need to study it. New York community-college students have high rates of poverty and immigration and routinely acknowledge adverse experiences when given the opportunity, yet the structure of schooling tends to reject emotional expression and encourage compartmentalization and suppression. This presentation uses discussions with diverse students, who were encouraged to include their own experiences as relevant for designing and analyzing research, to explore how trauma is a fundamental part of exploring the inequality that leads to widely divergent educational attainment. Acknowledging life's difficulties with students led to questions about the nature of trauma while also demonstrating taboos around the expression of intense emotion. Vygotsky theorized that language leads to greater consciousness and self-regulation, but the cultures of science and academia and narratives about resilience appear to be obstacles for student

development, because of the severing of emotional experiences. CHAT can contribute to the broader practices and understandings related to trauma, adding a necessary focus on culture and the dynamics of lived experience.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Trauma, adverse childhood experiences (ACEs), and resilience have been gaining widespread attention, and this paper explores the concept of trauma from the perspective of cultural-historical activity theory (CHAT) as a biopsychosocial phenomenon with a focus on the parts that are generally left out: the cultural and the structural to answer developmental questions. Focusing on Vygotsky's (1962) work about the role of emotion in the development of higher mental functioning and the development of cultural tools serves as a framework for understanding the exploration of trauma by community-college students and its frequent transformation into stories of resilience.

For decades, doctors and psychologists resisted the idea that war caused trauma. The diagnosis of post-traumatic stress disorder (PTSD) was finally accepted by the American Psychiatric Association in 1980 and has found increased attention since Felitti and colleagues (1998) shared work about the prevalence of childhood adversity and its long-term effects on health, entering school settings through trauma-informed pedagogy (Brunzell, Stokes, & Waters, 2016; Carello, & Butler, 2015). In a community-college student research group, diverse students eagerly discussed trauma and childhood experiences. Students debated what counted as trauma, and one pushed the group to focus on resilience. Exploring these ideas, while developing surveys and analyzing data, students demonstrated an array of tensions, and institutional discourse demonstrated a focus on resilience. Emotions were never discussed easily and have never been encouraged in academic settings. Both coping strategies and cultural taboos limited discussion as students' unspoken histories shaped the conversations.

Students rarely have an opportunity to acknowledge emotionally-laden events in school and instead tend to be ushered to private therapeutic settings, but even while we push students to keep emotions private, various entities encourage students to capitalize on their stories of hardship to gain financial support for the college and for themselves. Under capitalism, even trauma is commodified, and there is a "right" way to tell these stories so that they are full of resilience and absent of despair and anger. These scripts emerged and were contested in student discussion.

Vygotsky's emphasis on words as tools for thinking and his assertion that emotion is at the root of higher psychological processes guide the work. Vygotsky (1934/1962) found the origins of language and intellectual development in emotions, viewing the effort to communicate originating in emotion and expanding to develop rational thinking. Language then allows humans to reflect on and regulate psychological processes. Multiple theories identify the dysregulation that comes with trauma as being intricately connected to the difficulty in verbalizing the experiences, but going back to Plato at least, rational thought has been viewed as overcoming emotions. Vygotsky (1934/1962, p. 243) argued, "The affective and volitional tendency stands behind thought," thus maintaining that connection. Efforts to control rather than acknowledge and use emotion may contribute to dysregulation and interfere with the development of higher mental functioning.

Engeström (1987) focused on bounded activity systems and the idea of boundary objects as an intersection between systems. Each part of a college student's life can be thus conceptualized as students moving through a network of activity systems that create the larger system of college (Beatty,

2015). The object of one classroom, with its contradictions, are bound to the object of college and its contradictions, and simultaneously, the student returns to a home and often works at a job with their own contradictory objects. Under capitalism, each activity system is directed to a single (if contested) object (Engeström). A student's emotions and subsequent motivations interact with each activity system, yet the efforts to integrate a person's home life with school are nearly non-existent by the time they reach college. Capitalism depends on the boundaries of activity systems for efficiency and commodification. As was seen with students who were veterans or who faced significant adversity, compartmentalization works well in dangerous situations but does not help them move beyond traumas to develop intellectually.

The isolation of emotional experiences prevents the connection between abstract concepts and lived experience and between people. It is a source of ongoing struggles that impedes the development of higher psychological functioning and college success. Student discussion of adverse experiences invites emotionally laden experiences into academic places, encouraging connections between ideas and people, but the process has not been simple or complete. Stories of resilience allow people to speak of past traumas but not of how they remain stuck in trauma. The splintering of experience by academic discipline and prohibitions against sharing most emotion within academia limit discussions. The culture(s) of academia are an obstacle for student development, particularly when students are from non-traditional backgrounds and have histories with multiple adverse experiences. This study shows that these students, in particular, benefit from having the boundaries between the academic and the personal and between different activities systems broken.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

In contexts of social and cultural diversity, dialogue between cultural groups that share a geographic space is considered desirable. However, with occasional variations, the relations between majority and minority groups remain in a monologue where the expected knowledge and what is taught is dictated by the majority and dominant culture (Ogbu & Simons, 1998). Although the emotional life of children has been ignored by the explicit school curriculum, the educational process is sustained by daily emotional interaction. In this way, when Mapuche children enter school education, they must incorporate regulations and ideals about what is appropriate on the emotional level in different cultures (Riquelme, et al, 2016), acquiring in the schooling process, a set of cultural elements related to emotion that are transmitted in the hidden curriculum (Quintriqueo & Torres, 2013). The objective of the study was to reveal the representations about emotional ideals that Mapuche children have built from the Lafkenche territory of the La Araucanía region, in order to provide knowledge for the social construction of an emotional education with cultural relevance that responds to their sociocultural characteristics. Educational processes show value principles, associated with being Norche: correct person; Kimche, wise person; Newenche, a person who carries spiritual strength and Kümeche person in solidarity. These emotional ideals are sustained from formative actions, including conversations, advice, stories, and ceremonies, among other mechanisms, which translate into expected behaviors for the child where respect, the link with nature, autonomy, being a good host and the necessary reflection before responding.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

In contexts of social and cultural diversity, dialogue between cultural groups that share a geographic space is considered desirable. Thus, to promote this dialogue, the idea of interculturality arises in its different meanings. However, with occasional variations, the relations between majority and minority groups remain in a monologue where the expected knowledge and what is taught is dictated by the majority and dominant culture (Ogbu & Simons, 1998). However, although the emotional life of children has been ignored by the explicit school curriculum, the educational process is sustained by daily emotional interaction. In this way, when Mapuche children enter school education, they must incorporate regulations and ideals about what is appropriate on the emotional level (or emotional ideals) in different cultures (Riquelme et al., 2016), acquiring in the schooling process, a set of cultural elements related to emotion that are transmitted in the hidden curriculum (Quintriqueo & Torres, 2013).

Emotional education is a continuous process that integrates an ideal of knowing how to feel in particular social contexts (Tsai, 2017). In the education of this knowing how to feel, the child is given guidelines on what is desirable and appropriate (Halberstadt et al, 2013), which constitute dynamic action scripts, those that initially operate in the behavioral planes, to then be internalized as models of action capable of being organized in representational models (Scollon et al., 2009).

These recursive processes of action-internalization and representation of emotion are articulated in daily activities of socialization and early childhood education both in institutionalized education (Hagan et al., 2020; Tsai et al., 2007) (among which kindergarten stands out as school) and in family education (Gentzler et al., 2018). During these interactions of formal and non-formal education, norms are delivered—explicitly or implicitly—that indicate emotional guidelines expressed in language, about what is expected or desirable in a social context that are then culturally reinforced. Thus, frames of reference are built that not only allow us to understand the world, but also allow us to conduct our-selves in it effectively or competently. From this perspective, we can understand emotions as social constructions on which we can reflect and build representations, thus organizing our daily work, but also allowing us to reorganize our experiences in this way, our memory about emotional experiences is also mediated by cultural information (Scollon et al., 2009).

It is then possible to observe that the social interaction of a culture mediates, through these daily interactions, those emotions that are part of the expected, of an emotional ideal (Tsai et al., 2006; Tsai et al., 2007). These cultural emotional ideals are constructed in direct interaction with the family (Dunbar, 2016; Lozada et al, 2016) and social actors such as nursery educators (Denham et al, 2020) and teachers who socialize emotion in interaction with children (Denham et al 2012; Kılıç, 2015).

In this context, cross-cultural research on culture and emotion has revealed cultural differences in the experience and expression of certain emotions (Fernández et al., 2020). Diener (1994) argues that “different groups have different norms regarding, for example, how desirable it is to be happy or how undesirable it is to be sad” (p.103), that is, how they can differ in how normative it is to express or admit those emotions. In Chile, unfortunately, few attempts have been made to explore the emotional dimension with cultural relevance in the classroom (Ibáñez, 2015; Riquelme & Munita, 2017). There are also few studies that ask children about the social construction of certain dimensions of reality (see Williamson, 2012, for an exception), and those that explore what children themselves have constructed as an ideal emotional state are practically non-existent. This has resulted in the maintenance of a mono cultural educational system in the emotional sphere and in

the denial of an epistemology, education and emotional ideals typical of Mapuche families. Given these antecedents, the objective of this study was to reveal the representations about the behaviors associated with emotional ideals that Mapuche boys and girls have built from the Lafkenche territory of the La Araucanía region. This is an attempt in order to provide knowledge for the social construction of an emotional education with cultural relevance that responds to the sociocultural characteristics of Mapuche children. It was possible to show educational processes related to value principles, associated with being *Norche*: correct person; *Kimche*, wise person; *Newenche* person who carries spiritual strength and *Kümeche* person in solidarity (Riquelme et al, 2020). These emotional ideals are sustained from formative actions, including conversations, advice, stories, ceremonies, among other mechanisms (Riquelme et al., 2020), which translate into expected behaviors for the child where respect, the link with nature, autonomy, being a good host and the necessary reflection before responding (Riquelme et al., 2019).

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Cultural practices are driven by emotions, and emotions are cultural too. The use of corporal punishment to discipline children “is cruel, it is inhuman, and it is degrading” according to the Constitutional Court Justice Pius Langa in 1995, leading to the abolishment of juvenile corporal punishment in South Africa. However, most teachers still argue that it is an effective disciplinary tool they know, used by their parents and teachers; “It made us,” they say as they continue using it. The question to be answered in this presentation is, what do emotions have to do with it? In a study of three generations in the education setting, where primary school children, their teachers, and retired teachers from the same community participated in a study that investigated why teachers continue to use corporal punishment two decades after it was abolished. From the data collected through ethnographic observations, focus groups, and individual interviews, the transfer and internalisation of the suppression of the expression of emotions of fear and anger across the three generations were evident. The CHAT analysis is employed to understand the participants’ emotional ambivalence or acceptance, and positive appraisal of corporal punishment. The suppression of negative emotions and the internalisation of positive emotions towards corporal punishment were observed among children and teachers who supported its use, explaining the perpetuation beyond its legal disapproval.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

Schools are spaces of learning. The object of the activity of teaching and learning in a school environment is to stimulate cultural development of higher psychological functioning (Vadeboncoeur and Collie, 2013). However not all school experiences and psychological development produce positive emotional experiences. One of the critical paradoxes in post-colonial education systems that have a history of slave education, (Amponsah, 2013) such as in South Africa, is the glaring contradiction embedded in the object of instilling discipline in school children through the infliction of physical and emotional pain. From the qualitative data collected through interviews with teachers and learners from a case study of a primary school, this paper discusses the transgenerational reproduction of emotional pain from the exposure to school corporal punishment and verbal abuse. This paper interrogates the link between the development of cognition and emotional pain (Mesquita, 2012) that is evident in the violent schooling system, while it also shows some disconnect

between the school system and the community's psychosocial challenges. The further paper reveals how cognition is linked to the collective and internalised experience of corporal punishment and verbal abuse. In the same vein, it illuminates compromised higher psychological development evident in the participants' justification and advocacy for the continued use of corporal punishment. The argument in this paper is guided by Vygotsky's analytical work of theories of emotions, limiting itself to Vygotsky's CHAT related appraisal of some aspects of Freud's and Lewin's assertions on the development of emotions (Vygotsky, 1987)

A cultural psychologist Ratner (2000) simplified the definition of emotions by first explaining what emotions are not. He asserted that emotions are not two separate dichotomous entities, further refuting the view that emotions lead to non-objective thinking and argued that scientific research, with all its effort for objectivity, is motivated by emotions. According to Ratner, "emotions are feelings that accompany thinking. They are the feeling side of thoughts; thought-filled feelings; thoughtful feelings. Emotions never exist in alone [in isolation] apart from thoughts" (Ratner, 2000, p.6). If emotions and thoughts are intertwined, the question is, how come researchers focus on understanding behaviour, community practices, etc. from the social, cognitive, and economic, among others while the emotional aspect is neglected?

Progressive communities and researchers have been puzzled by the persistent use of corporal punishment by mostly those teachers from Non-WEIRD countries. Although some literature has brought some light on social, and cognitive, perceptions and beliefs that inform the practice, very little has been to light concerning the emotional aspect of the practice. While data of some researchers (Mayisela, 2017; Arosi, 2023; Kau, not published yet), have glaring content on emotions associated with the childhood experience of corporal punishment and its enactment in adulthood, which has not been analysed. This paper explores the nature of emotions and the emotional expressions of teachers about their childhood experiences of corporal punishment.

According to Mesquita (2012) that as much as some academicians believe that Vygotsky's exploration of emotions was very limited, records of his writings suggest otherwise. Ratner (2000) has noted that Vygotsky believed that emotions, just like cognition, emotions, are culturally mediated. What is cultural, is mediated or socially created within intersubjective activities, with feelings and cognition as the two sides of the coin. In his "The Psychology of the Art of Emotions," emotions are viewed as an aspect of higher psychological function—because emotions signify meaning-making or emotions—and are another form of signs. "Vygotsky gives to emotions a character similar to that of cognitive processes, as a constituent of the psyche..." (Mesquita, 2012, p.810). He views emotions as emanating from cultural interactions and to be having cultural meaning.

Drawing from Burkitt's (2021) work, emotions are constituted of physiological reactions to what could be external to the body, and they are socially and historically mediated. They are informed by the evaluative element such as attitude, ethical values, cognitive maturity, social identity, etc.

Additionally, emotions are also determined by how one identifies the self against their social world, experience being in the world, and in relation to their social interaction with others. How a child experiences schooling and teachers may influence their emotions towards learning.

This paper focuses on case studies of primary schools: one rural and the other urban in a South Africa. Participants in case study 1 were three generations of teachers, current parents, children, and community members. In case study 2, teachers and school management representatives participated. All participants were previously exposed to corporal punishment in their childhood, and exposed to

poor slave education. As adults, they still support corporal punishment even though corporal punishment was outlawed in 2016 in South Africa. Observations and interviews have led to the following three conclusions to emerge from analysis: emotions towards corporal punishment are culturally mediated, the expressions of emotions are culturally suppressed, and emotional consciousness on corporal punishment is suppressed.

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508 Experimenting with change towards Equitable Educational Systems in Open schooling Science Education

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Sustainability education Open schooling Transformation

SHORT ABSTRACT

An education able to inform and foster social change towards sustainability entails the building of collectivities capable of comprehensive and large-scale action. This cannot be achieved unless learning is understood as an achievement of the whole ecosystem (Damsa & Jornet, 2016) and education fosters deep change by transforming individuals and their communities and engages students with global learning and global citizenship in local projects (Gajparia, 2022; Tarozzi, 2023). The current study approaches meaningful sustainability education by investigating *how can education participate in organizing and facilitating the transformation towards more sustainable and equitable futures while simultaneously acknowledging the needs for continuity in the current reality?* The study draws from data collected in a European sustainability education project, where local and global members in open schooling communities were implementing (interdisciplinary) science education projects and articulated their visions of, and experimented with possible pathways towards more sustainable futures. The preliminary data analysis shows that in teachers', students', and other actors' efforts to make changes for sustainability, a tension exists between transformation and the need for continuity of identities and practices.

EXTENDED SUMMARY

Background

Narratives of change which “refer to sets of ideas, concepts, metaphors, discourses or storylines about societal transformation” (Wittmayer et al., 2015) can be considered as a method to envision as well as critically evaluate pathways towards desired futures. The envisioning entails connecting with both imaginative and real-life experiences, knowledge, and learnings from them. Accordingly, agency in sustainability can be conceptualized as a process that engages individuals in the collective action towards global and local sustainability issues, and embeds them as historical actors (as defined by Giroux, 1997 and Gutierrez et al., 2019).

Experimenting with change for sustainability takes place in practical struggles of collectives and creates a tension between the need for continuing with established practices, and transformation, which considers both desire and responsibility. Education is the field of such local struggles, where students can learn to critically view and develop their hopes for the future and narrate how the required pathways towards desired futures can be build. Bloch (1986) includes the future horizon as an essential part of being that conditions consciousness besides the past oriented consciousness. When *being* in action, the subject needs to be understood as part of the motives that energize the

action (Dewey, 1929). The students' and teachers' subjectivities are embedded in narratives where their needs are intertwined with social motives. Therefore, social motives and commitment to act for the long-term well-being of the local and global community develop parallel with the community. Here, learning needs to be understood as an achievement of the whole ecosystem, which transforms its epistemic, social and affective relations including identities and agency (Damsa & Jornet, 2016).

Aims

The current study approaches meaningful sustainability education by investigating how open schooling initiatives allow students to participate in creating collective motives for acting for sustainability issues. The study draws from data collected in a European sustainability education project.

The current study poses the following research question:

How can education participate in organizing and facilitating the transformation towards more sustainable and equitable futures while simultaneously acknowledging the needs for continuity in the current reality?

Methods

In the current study, local and global members in open schooling communities who were implementing (interdisciplinary) science education projects, learned about, articulated their visions of, and experimented with possible pathways towards more sustainable futures. The participants were upper secondary students, their teachers, school leaders, researchers in all six participating countries, activists, workers in a museum, economics, and some politicians and other cooperative agents. The study follows the methodology from a design-based participatory research (Penuel, Cole, & O'Neill, 2016) and draws from data collected in a European Open schooling collaborative project. Through three cases from the field study, the current study discusses what it entails to develop practices for collective agency in sustainability education in the context of open schooling. The data material includes policy documents, field-notes, interview data and written narratives. The data analysis focuses on tensions between simultaneous need for continuity, and the transforming towards sustainable and equitable futures in educational practices.

With discourse analysis, the current study explores the organizing and facilitating of the transformation towards more sustainable and equitable futures while simultaneously acknowledging the (experienced) needs for continuity in the current reality.

Results

In the analysed students' written narratives of their ideal futures and pathways towards them, a small minority (N=7 out of 273) directly discuss enhancement in equity and fairness in global or national scale. In the suggested pathways, the rich people and countries help the poor countries by handing out money, human resources and technology. One of these narratives suggest a need to build a system that prevents and helps in natural disasters and prevents people from ending up as climate refugees. In addition, in the narratives that discuss equity, people (or the society) intervene with rich peoples' polluting habits, pay attention to safety, equal opportunities, and education, stop racism and homophobia and create better working conditions.

The field study and preliminary data analysis show that teachers and students seem to struggle to make connections between the practical activities they can take for sustainability, and how these connect with some larger phenomenon such as changes in politics and global consuming. It is

occasionally difficult for the students to discuss their care towards sustainability issues without having - what they self can experience as - meaningful action possibilities to do something about their care.

Conclusion

Additional findings from the field study indicate that open schooling methodology can in the long-term develop collective agency for sustainability by including students into visioning, and critically developing their desired futures. The open schooling methodology can contribute both as a way to realize students' own and construct new visions.

I am interested in a common discussion on the tension between the need for continuity and transformation towards sustainability and its resolving in education.

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517 ONLINE - Affect-cognition unit in remote education: a qualitative study in Brazilian higher education

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Dealing with technology

Keywords: Affect-cognition Remote teaching Pedagogical activity

SHORT ABSTRACT

This study investigates the affect-cognition unity in remote teaching within the framework of the COVID-19 pandemic. Based in Vygotsky's historical-cultural approach, the research aims to analyze the intrinsic relationship between affectivity and cognition the modes of action experienced, apprehended, and objectified by the participants in teaching and learning processes that occurred remotely, through digital technologies, specifically in times of crisis generated within the context of the COVID-19 pandemic. The study, conducted at a federal institution of higher education in Brazil, involved eight college professors and forty-seven students. Data production included focus group, reports from participating professors, student questionnaires, and descriptions of the learning management systems used. Analysis was guided by Vygotsky's principles, focusing on the process rather than the object, essence seeking, and identifying fossilized behavior. Findings revealed essential objective conditions for remote teaching's development, along with challenges and contradictions in pedagogical planning and execution. Family support emerged as crucial for student learning, while professors faced tensions between institutional direction and pedagogical freedom. Remote teaching evoked a mix of emotions, with creativity observed in professors' responses to challenges. Interpersonal relationships mediated by synchronous classes played a significant role, albeit with difficulties in establishing effective virtual meetings. The study underscores the importance of considering both affective and cognitive dimensions in designing effective remote teaching strategies. It highlights the need for adequate support structures, including multidisciplinary collaboration and ongoing professional development, to enhance the quality of remote pedagogy.

EXTENDED SUMMARY

Introduction

From the historical-cultural approach, the theoretical-methodological framework that underpins this research understands that affectivity and cognition form a unity in the human psyche, which is dialectically constituted and constantly changing (Vygotsky, 1997). The research problem arises from the social context of the COVID-19 pandemic in 2020, when educational networks and institutions adopted remote teaching, largely through digital information and communication technologies (DICT).

This study stems from a doctoral research aimed at analyzing the intrinsic relationship between affectivity and cognition, the modes of action experienced, apprehended, and objectified by the

participants in teaching and learning processes that occurred remotely, through digital technologies, specifically in times of crisis generated within the context of the COVID-19 pandemic.

Methods

The field research was conducted during the pandemic period and has as its locus of investigation a federal institution of higher education in Brazil that offered a mini-course on the Virtual Learning Environment (VLE) to the institution's professors to provide them with pedagogical-technical knowledge for the emergency moment. The research involved 8 college professors who completed the course and 47 students of these professors.

Data collection was conducted in four stages, namely: 1. Online meetings with professors, divided into two focus groups; 2. Preparation of a report on the period of remote teaching by participating professors; 3. Questionnaire answered by participating students; 4. Description of the LMS used in classes.

The analysis of the research was guided by the three basic principles proposed by Vygotsky (2007): (1) analysis of the process and not of the object; (2) search for the essence of the phenomenon; and (3) the problem of fossilized behavior.

The data were selected and organized by contents that expressed the most relevant ways of feeling, thinking, and acting of the participants regarding the experience of remote teaching. These contents were then grouped into three analytical axes based on guiding threads that brought them together, allowing discussion and theorization. The following is a synthesis of the discussion based on the analytical axes.

Results

In the analysis axis "The planning and execution of pedagogical activity, mediated by the social context," essential objective conditions for the development of remote teaching were identified, and the contradictions, difficulties, and paths taken to organize the educational process were highlighted. The family appeared as an important element for students' learning, through the recognition and appreciation of the time they dedicated to studying. The contradiction experienced by professors between the need for institutional direction and the freedom to teach was revealed. Difficulties in reconciling demands related to various spheres of life during the pandemic period were also evident. In the analytical axis "The affective and volitional basis present in remote teaching," the needs and motives for the objectification of pedagogical activity and the affections constituted in remote teaching were highlighted. The development of remote teaching produced sad feelings that diminish the subjects' capacity to act (Spinoza, 2020). However, new affectations during the process and new modes of action contributed to the transformation of some feelings. Previous experiences (Vigotski, 2006) constituted expectations regarding the behavior of students and professors during this period. Creativity (Vygotsky, 2010) was observed in overcoming difficulties by professors. professors' meanings relate students' engagement to the improvements and adjustments made by them in the disciplines. This correlation between the improvement of teaching and the realization of learning reveals the objectification of pedagogical activity (Bernardes, 2009).

In the analysis axis "Interpersonal relationships as mediators of the affective and cognitive constitution of pedagogical activity," it is discussed how interpersonal relationships between professors and students developed, how both were impacted, what they expected, and what relationship was established with face-to-face meetings. Divergences between virtual and face-to-face academic means are revealed. Synchronous class appears as a potential tool to overcome the

lack of face-to-face meetings. However, the data reveal difficulties in establishing good virtual meetings (Spinoza, 2020).

Conclusions

The experience of remote teaching passes through the prism of previous experiences and objective conditions that emerge from the environment. The affection-cognition unity unfolds in the interaction between professor and students as an important and constitutive mediation of pedagogical activity. In education, especially mediated by DICT, the intention or desire for interaction is not enough; adequate objective conditions and the creation of strategies for its realization are necessary. The dialectic between the affective and cognitive dimensions is revealed in professors' pursuit of improving educational processes. During remote teaching, individually performed work hindered pedagogical activity, as did work based on everyday experience. The importance of multidisciplinary work and the need for training processes and collective studies on online teaching to qualify pedagogical activity are evident.

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520 ONLINE - A Case Study of the Developmental & Sociocultural Dimension of Learning L2 Academic Writing Process

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Meaningful education

Keywords: Additional language Perezhivanie Writing process

SHORT ABSTRACT

Academic writing in an additional language presents a complex challenge within the university context where writing serves as a central social practice for knowledge production. Despite interest in the learning of the writing process, the literature has predominantly drawn upon its cognitive aspects (Flowers & Hayes, 1981; Li, 2023; Wingate & Harper, 2021), not fully addressing the developmental and sociocultural dimensions of learning L2 writing. This study aims to shed light on the learning of the L2 writing process of a Brazilian undergraduate student from a sociocultural perspective. To this end, the language activity that underlies the undergraduate's L2 developmental academic writing process is explored considering its inter and intrapsychological role (Vygotsky, 1987). In order to provide insights into the developmental process of learning L2 writing, Perezhivanie (Veresov, 2017) was used. The methodology integrates Descriptive Experience Sampling (DES) (Hurlburt et al., 2013) and Stimulated Verbal Recall (SVR) to examine four L2 academic writing tasks over a year. Following a 3-day training session, the participant's writing tasks were recorded, and she was prompted to document her inner experiences. These notes were later reported and supplemented by SVR interviews that were conducted on the following days. A microgenetic analysis was then applied to identify and analyze dramatic collisions (Veresov, 2016), alongside a thematic analysis of the language activity. Findings provide evidence of the sociocultural nature of the individual's learning process and of qualitative changes that emerged from the dramatic collisions observed.

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526 Psychotherapy and Theory of Subjectivity: alternatives for practice

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: Subjectivity Psychotherapy Practice

SHORT ABSTRACT

In this symposium we want to present a discussion about different strategies in psychotherapy based on Gonzales Rey's theory of subjectivity. We will present discussions about autism, psychotherapy care, mental health and adolescence. Psychotherapy is an important scenario for understanding the diverse configuration of both social and individual subjectivity. In this sense, the recognition of the person in psychotherapy involves their recognition as a subject in the process of their life. Thus, the psychotherapist's actions are not guided by knowledge dissociated from the subjective meaning processes produced by the person undergoing psychotherapy.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Care in Theory of Subjectivity-based psychotherapy: a case study

González Rey's Theory of Subjectivity, advancing Vygotsky's legacy from a complex standpoint, represents an original critical-propositional framework within cultural-historical psychology. The Theory of Subjectivity is an inseparable theoretical, epistemological, and methodological tripod that includes the Theory itself, as well as Qualitative Epistemology and the constructive-interpretative method. In this regard, subjectivity is seen as a complex system of symbolical-emotional processes and formations (subjective senses and subjective configurations) whose integration carries the history and present life of individuals and social instances in a given culture. Subjectivity is both individual and social; each of these dimensions configure itself and the other without establishing relations of determination and subordination. Therefore, subjectivity involves the ways by which people, groups, and institutions not only experience reality, but also how they move within it, change it, and shape their lives and their contexts within a concrete society and culture. In the Theory of Subjectivity, subjective development represents the generation of new subjectivation venues and of alternative life courses which creatively disrupt conformance to contextual normative, being favored by the emergence of new subjective senses. On this subject, Theory of Subjectivity-based psychotherapy is here taken as a professional care practice, primarily devoted to the subjective organization of paths and places of/to existing and living by the people psychotherapists' care for. Anchored in Qualitative Epistemology as dimensioned for the space of psychotherapy in its specificities, psychotherapists facilitate these processes: a) by continuously devoting to favor the configuration of the psychotherapeutic space as a dialogical one, as simultaneously home and work, freedom and

responsibility, rest and movement for the people cared for, b) by focusing their actions within the psychotherapeutic space on the singularity of the other, especially when it comes to facilitating the emergence of new subjective senses with sensibility to the other's subjective resources and moment in life, and c) by permanently generating, in each psychotherapeutic process, theoretical production concerning the subjective processes of the other and of the psychotherapeutic relationship. This theoretical production is crafted by the continuous intertwinement of thoughts, sensations, ideas, intuitions, suspicions psychotherapists have while performing their activity (referred to as indicators, in the Theory of Subjectivity), which are turned into hypotheses and theoretical models about subjective processes. To do so, psychotherapists work with the constructive-interpretative method, using the Theory of Subjectivity's categories to continuously create micro theories about each ongoing psychotherapeutic process. Stemming from this point of view, this paper aims to discuss care in Theory of Subjectivity-based psychotherapy through a case study, which focuses on Claudia's (fictitious name) psychotherapeutic process. She was cared for by the first author during a period of approximately three years, from when she was eighteen years old until she turned twenty. Throughout this period, Claudia and the first author met mostly once a week for their sessions (with a few breaks for holidays and vacations). Each session lasted between forty-five minutes to one hour. The case study was developed from the psychotherapist's theoretical production about Claudia's psychotherapeutic process during the time she was cared for; and, therefore, via constructive-interpretative method. This method is guided by Qualitative Epistemology's three pillars: a) the dialogical nature of knowledge production, b) singularity as a legitimate source for knowledge production, and c) the constructive-interpretative nature of knowledge production. Moreover, in this method, results and conclusions are understood as being simultaneously generated in and through theoretical production. This process is known as "information construction". Presenting key points of information construction is presenting main results and conclusions. Our information construction about Claudia's psychotherapeutic process allowed us to understand how important it can be, for care to really take place in psychotherapy, that psychotherapists comprehend how the people they care for subjectively produce regarding time, their bodies, their financial conditions, and the economic and political conditions of their local context and country. That made it possible for us to reflect upon how generating new subjective venues and alternative life courses is deeply connected to subjective production on these themes in their recursive production of each other. Finally, our information construction also allowed us to consider that, even when it is not possible for the other to make life changes that disrupt contextual normative, subjective development is already in motion if the other has creatively begun to feel and think differently about it. We plan to interact with the symposium participants by presenting excerpts of the case study that relate to turning points in Claudia's care in psychotherapy. The excerpts will be in slides so that the participants have a visual aid to assist them. We plan to conduct our presentation by encouraging participants to talk about their views on the matter and add to it from their own thoughts and experience. In doing so, we mean to favor spontaneous conversation about the theme.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Psychoeducational approach of children with ASD: a cultural-historical perspective of Subjectivity

This paper discusses, from the perspective of Qualitative Epistemology and González Rey's Theory of Subjectivity, some considerations in relation to the psychoeducational approach with children

diagnosed with ASD. To achieve this objective, the way in which diagnosis is conceived within the approach of subjectivity is critically debated, highlighting the possibilities of subjective development in children with ASD, beyond the pathologization and exclusion commonly produced in various social spaces. Subsequently, the principles of Qualitative Epistemology are presented, namely: dialogicity, singularity and the constructive-interpretative character of scientific knowledge. The methodology used in this type of approach is constructive-interpretative, characterized by a dynamic and dialogic conception of the field and the instruments developed with the participants. In addition, the methodological value of concepts such as conjecture, indicator, hypothesis and theoretical model is shown, which are part of the configurational logic of the production of scientific/professional knowledge that favors the subjective development of children. As a final result, the heuristic value of subjectivity as a theoretical and methodological perspective that gives rise to emotion, the quality of the links between teachers, students and the school community and the promotion of children with ASD as agents and subjects of their experience is shown.

Key words: Subjectivity; ASD; Subjective development.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Crisis, adolescence and mental health: theoretical possibilities based on the Theory of Subjectivity

Considering a global context that has seen the increasingly severe emergence of psychological suffering, especially among adolescents, we see the phenomenon of crisis as an important aspect of these experiences. Due to its often unexpected, conflicting, tense and contradictory nature, but at the same time so frequent in mental health care services, it is considered appropriate to discuss this issue. This study aims to discuss, from González Rey's Theory of Subjectivity from a cultural-historical standpoint, theoretical alternatives to the traditional medical-centric crisis perspective, that allow us to advance both in the understanding of the crisis in adolescence, as well as in the foundation of new practices in the care of people who live this experience. Initially, the concept of adolescence is discussed, problematizing the universalizing tendencies that have prevailed in scientific discussions on this subject. Next, a critique is made of the notion of crisis which is predominantly thought of in terms of its symptomatological expression, conceived as an individual, urgent dysfunction that needs to be contained at all costs due to its essentially negative aspect. Alternatively, the notion of crisis is discussed as a complex, dialectical phenomenon, mutually configured between individual and social dimensions. One of the main developments of this theoretical perspective is the valuing of the protagonism of adolescents in crisis, emphasizing the development of subjective resources that allow them not to return to a pre-crisis state of normality, but to open up qualitatively to new possibilities in life.

Keywords: crisis, adolescence, subjectivity

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529 Formative assessment in an activity system: heterogeneity, contradictions and dilemmas

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Other CHAT-related topic

Keywords: Formative assessment Heterogeneity of Thinking Activity System Chemistry teaching and CHAT

SHORT ABSTRACT

In this work, we analyze formative assessment processes in view of the heterogeneity of ways of thinking and speaking, considering possible dilemmas and contradictions constituted in Chemistry classes structured as an activity system for studies on heat. We are based on the Theory of Conceptual Profiles (MORTIMER; EL-HANI, 2014) to characterize the heterogeneity of verbal thinking expressed by students engaged in activities, and to prospect and analyze assessment processes constituted by students' actions and interactions, based on a formative assessment perspective (BELL; COWIE, 2001). A system of activities for studies on heat was structured based on the CHAT (ENGESTROM, 2001). Students from the year 10 in High School participated in this research, the classes were videorecorded for later analysis. The results point to tensions and contradictions in the evaluation processes, which can be associated with aspects of formative assessment, such as interactivity, responsiveness, proactivity, reactive action, contingent formative interaction, diversity of sources, contextualization and dilemmas. Interactivity and the dialogic communicative approach were essential for the emergence of different ways of thinking, and the heterogeneity of ways of thinking expressed by students brings challenges to the learning formative assessment.

EXTENDED SUMMARY

In this work, we analyze formative assessment processes in view of the heterogeneity of ways of thinking and speaking, considering possible dilemmas and contradictions constituted in Chemistry classes structured as an activity system (ENGESTROM, 2001) for studies on heat. We are based on the Theory of Conceptual Profiles (MORTIMER; EL-HANI, 2014) to characterize the heterogeneity of verbal thinking expressed by students as engaged in activities, and to prospect and analyze formative assessment processes constituted by students' actions and interactions (BELL; COWIE, 2001). These three theoretical perspectives constitute axes of analysis in our study, leading us to establish the following articulated categories: tensions and contradictions, different ways of thinking about heat, characteristics of formative assessment. The activity system involved a set of actions that provoked discussions for the understanding of the concept of heat associated with different contexts, presented from diverse strategies and resources: brainstorming (previous ideas), experimentation to differentiate heat and sensation, analysis of everyday situations involving the heat concept, analysis of phenomena related to the concept of heat, among others. The diversity of contexts evoked in the

activity system enabled the emergence of different ways of thinking and speaking about heat, which were characterized by zones of the conceptual profile of heat (AMARAL; MORTIMER, 2001), so that, this heterogeneity should be considered in evaluation processes. In all activities, we seek to enhance students in discursive interactions to promote sharing and negotiation of meanings. Students from the year 10 in High School participated in this research, the classes were videorecorded, and relevant episodes were constituted for the analysis of discursive interactions, in which moments for formative assessment occur. According to the perspective of Bell and Cowie (2001), formative assessment is necessarily articulated to teaching and learning, in a continuous and processual way, and it can be characterized by interactivity, responsiveness, proactivity, reactive action, contingent formative interaction, diversity of sources, contextualization and dilemmas.

Results led us to understand the importance of elements of the activity to engage the subjects in interactions that constitute the evaluation processes, which were marked by several *tensions and contradictions*, such as: students questioned the absence of a formal assessment exam (tension in the subject-mediator artifact-rules relations); in a diagnostic activity, some students resorted to the internet to elaborate answers, diverging from the rules; students presented low interactivity in the discussions (contradictions in the subject-object-rules relations); different ways of thinking provoked contradictions in discursive interactions, and were powerful in the teacher's actions to search for negotiation of meanings (contradictions in subject-object-community relations); the absence/low engagement of students caused tensions for a formative assessment based on interactivity (subject-object-community-division of labor relations). Some of these tensions and contradictions can be detailed based on characteristics of the formative evaluation process.

The interactivity was crucial for emergence of different ways of thinking about heat, for example, the understanding of heat as energy exchange (rationalist zone) can be discussed as a counterpoint to initial ideas that related heat to sensations (realist zone). Thus, when there are problems of interactivity, a tension is created in the formative assessment as process based on the articulation between teaching, learning and evaluation, with damage to the negotiation of senses and meanings between students and teachers. It would be desirable to adopt a dialogic communicative approach by the sharing and systematization of ideas to be established in the classroom. In the investigation, we found that the teacher intentionally proposed activities with the objective of raising informal ideas (responsiveness) and promoted proactive actions for a negotiation of senses and meanings. However, unplanned evaluation processes also emerged during the discursive interactions, leading the teacher to reactive actions, such as perceiving, acknowledging, and responding to ideas raised by the students. In this dynamic, the formative assessment involved uncertainty and risk-taking, leading the teacher to highlight and mark some specific meanings. Contingent formative interactions marked by interpretative listening during discursive interactions enabled evaluative actions such as asking questions and problematizing situations brought by the students. This required the use of a diversity of sources of information and evidence, promoting contact with different contexts, which gave a contextualized dimension to the evaluation.

Throughout the formative assessment process articulated with teaching and learning, dilemmas arose, for example: in the discursive interactions, different ways of thinking and speaking emerged but they do not necessarily appear in the written formal exams or assessment; the continuous and processual formative assessment demands care about the structuring of the activity, which should favor productive relations between subject, object, rules, community, discussions and interactions for

sharing and negotiating of meanings, and which necessarily brings tensions and contradictions that are part of the evaluation processes; and assessment tools should make it possible to identify different ways in which students represent and apply knowledge.

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531 Activity Theory: The History, Significance and and Future Prospects (Part 1)

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: Activity Theory CHAT Integration of theory and practice

SHORT ABSTRACT

This symposium features a recent book titled Activity Theory: An Introduction, which presents a unique approach to studying the nature, origin, and development of human subjectivity. Its core proposition is that the mind cannot be reduced to individual brain or body functions, nor can be understood as a discursive or cultural phenomenon. Instead, Activity Theory posits that the mind emerges and develops inter-subjectively, and is internalized by individuals always embedded, along with their culture and language, in the context of object-oriented social practices. By refocusing the lens of inquiry from the individual onto the patterns of activity in which they move, this method illuminates a special reality—the materiality of human practice, which shapes the subject in ways that biological and cultural explanations cannot fully capture.

The symposium assembles current scholarship from prominent figures across diverse fields who share the Activity Theory approach. It presents their findings and reflects on Activity Theory's history, significance, and prospects, with contributions by Mikael Brunila, Juliano Camillo, Michael Cole, Yrjö Engeström, Cathrine Hasse, Alex Levant, Miriam McSweeney, Cristiano Mattos, Kyoko Murakami, Juhana Rantavuori, André Machado Rodriguez, Annalisa Sannino, Anna Stetsenko.

EXTENDED SUMMARY

Activity Theory to the current generation of theorists and researchers. Originating in early Soviet psychology, suppressed by Stalin, and later rediscovered, this rich theoretical tradition and intellectual movement proliferated globally and developed in different directions across a variety of disciplines. However, until recently it remained “the best-held secret of academia” (Engeström 2009).

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

A World of Activity: A ‘Special Reality’ with a ‘Peculiar Objectivity’

Alex Levant, Department of Communication & Media Studies
Department of Communication & Media Studies, York University, Canada

In *Dialectics of the Ideal* (2009/2014) the philosopher E. V. Ilyenkov describes a “special reality” with a “peculiar objectivity”. He aims to illuminate an aspect of the world that typically remains out of sight—something as material as the objects we see around us, but which usually goes unnoticed. This special reality is the world of human activity, and its peculiar objectivity is the materiality of practice. What makes this reality special is that it is not always perceptible, although it occupies the same space as the everyday observable world. As a metaphor, consider a still image from a film on pause. Looking at the screen, one could make observations about what one saw, but these observations would be limited by not having seen what had happened prior to everyone freezing into place. Quite easily, a simple gesture, like a kiss for example, could come to mean something very different when seen in the context of the film unfolding.

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SYMPOSIUM PAPER 2, SHORT ABSTRACT:

The Politics of Expansive Learning: A Study of Two Social Movements

Yrjö Engeström (CRADLE, University of Helsinki), Mikael Brunila (McGill University, Montreal), Juhana Rantavuori (CRADLE, University of Helsinki)

For social movements, a critical issue is their sustainability over longer periods of time. Durable movements are relatively rare. Learning is a key factor behind durability. To overcome setbacks and sheer exhaustion, a movement needs to establish mechanisms of learning that allow it to renew, develop and transform its practices. Standard mechanisms of learning based on didactic instruction or apprenticeship-like peripheral participation are insufficient for this challenge. Some scholars have recently turned to expansive learning as a longitudinal and generative mode of learning that might be adequate for supporting resilience and sustainability in social movements (Caldwell & al., 2019; Melendez, 2020; Zavala, 2016). However, systematic fostering of expansive learning involves deliberate political choices and actions – a politics of expansive learning. We will examine elements of

such politics in three social movements, namely La PAH in Barcelona, Spain; NYCCLI in New York City; and the Herttoniemi Food Cooperative in Helsinki, Finland.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

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Expansive learning is *learning in activity*, not learning about or learning added to activity (Greeno & Engeström, 2014). A critical question is: *How is expansive learning embedded in, or woven into, the activity system(s) of the given social movement?*

La PAH is a movement aimed at preventing evictions and securing affordable housing for victims of the bursting of the Spanish mortgage bubble. La PAH has developed an unorthodox combination of spectacular public action, emotional labor, and mutual aid to prevent thousands of home evictions. Our researchers spent three months documenting the regular Monday and Tuesday assemblies of La PAH in Barcelona. The data collected consists of recorded assembly discussions, interviews, and recordings and fieldnotes of public actions. The analysis of this paper is focused on the interview data.

NYCCLI is a movement advocating Community Land Trusts (CLTs) as a means of developing affordable housing amid speculation and gentrification. CLTs are nonprofit organizations that own land in a set geographic area, and are governed by a board of residents, other community members, and trusted professionals. CLTs design and monitor a lease that enforces affordability and use restrictions on housing over the long term. Our team spent five months collecting data on NYCCLI. The data consists of interviews, recordings and fieldnotes of numerous meetings and actions, historical documents, and artifacts developed in the movement. Our analysis draws on the entire body of the ethnographic and historical data.

The Herttoniemi Food Cooperative is located in the metropolitan area of Helsinki. The cooperative has about 200 members. It rents a field where a hired farmer produces vegetables for the cooperative. During the harvest season, vegetables are transported weekly from the field into the city to distribution points where members come and pick up their share. In spite of its growing popularity, the continuity of the food cooperative is constantly at risk. Small-scale ecological farming is labor-intensive and has to compete with heavily subsidized mass produced farm products of large food store chains. A member of our research team participated in and recorded 27 meetings of the board of the cooperative over a period of 13 months. The data consists of the recorded meetings and complementary interviews with key members of the cooperative.

In the analysis of each of the three cases, we identify expansive learning actions and examine to what extent they form expansive learning cycles (Engeström, Rantavuori & Kerosuo, 2013). The scale and scope of the focal learning process, as well as the way of embedding learning in the activity system(s) of the movement, were different in each case.

We conclude our analysis by comparing the findings of the three cases, which leads to a theoretical and methodological discussion of the notion of politics of expansive learning. We suggest that the deliberate fostering of expansive learning in social movements entails strategic choices related to the way learning is embedded in the activity system(s) of the movement. These are also choices pertaining to who are the key learners and how are their learning actions distributed and punctuated in time and space.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Socratic Ignorance in Technological Activity

Cathrine Hasse, University of Aarhus, Denmark

Keywords: activity theory, technology, posthumanism

How can activity theory help us understand how humans are capable of creating their own destruction with technologies designed to help? In this entry I shall address this question by pointing to how a lack of Socratic ignorance and the agency of technologies inform engineering activities.

Activity theory focusses on how humans create the world and each other through constant activities simultaneous transforming both. New posthuman theories focus on the agency of the environment (materials, animals, plants etc.) and regard the humans as decentered. I shall argue both approaches can be connected through a focus on Socratic Ignorance.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

How can activity theory help us understand how humans are capable of creating their own destruction with technologies designed to help? In this entry I shall address this question by pointing to how a lack of Socratic ignorance inform engineering activities. Activity theory focusses on how humans create the world and each other through constant activities simultaneous transforming both. New posthuman theories focus on the agency of the environment (materials, animals, plants etc.) and regard the humans as decentered. I shall argue both approaches can be connected through a focus on Socratic Ignorance. Though fieldwork studies among engineers creating robots (e.g. in the REELER project – see <https://responsiblerobotics.eu/>) we have been able to follow how engineers envision how their technologies can affect the world.

The main goal of the REELER project was to align robot makers' visions of a future with robots with empirically based knowledge of human needs and societal concerns, through a new proximity-based human-machine ethics.

We chose 10 different robot laboratories engaged in creating robots designed to help the world. Through fieldwork and individual interviews with 160 robot developers and people presumably affected by their technologies (called affected stakeholders in the project) we achieved a deep insight in the discrepancies between the everyday activities and agencies of technologies in the affected stakeholders lives, and the activities of engineers (<https://responsiblerobotics.eu/research/perspectives-on-robots/>). In the present paper I build on these results but add both insights from posthuman theories and considerations over how human

ignorance in activities make people unaware of the consequences for other of their own activities. In REELER we gave voice to those affected by the robots created by engineers, and thus opened up for new possibilities to understand both the ignorance of robot makers and those of affected stakeholders and how the agency of technology can remain unknown to both.

Following posthuman theories we can study the actual effects on how these machines affect the world regardless of what the engineers consider the main objectives of their activity. From an activity theoretical point of view the engineers are some of the few of the planet's many billions of people who can actually create the new technologies and materials that have changed peoples living conditions across the globe for better or worse. What we have seen in the REELER project as well as other projects focusing on the creation of technologies the engineers are often ignorant of how machines affect local environments. Furthermore, they are now aware of their own ignorance. Engineers want to solve problems (not create them) and I argue that Socratic ignorance in engineering activities could help create an awareness of how unintended effects of how the agency of materials and technologies combined with humans may be helped by activity studies that increase the Socratic ignorance of engineers. If we accept climate change as human made, we need theories, like a new approach to Socratic ignorance and posthumanism in activity systems, that help us understand how, when, and where human activities either accelerate or stop the materials and technologies from being developed and/or having negative agencies for humans and wider environments.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Tracking the Object: A Case of a Small-scale Developmental Work Research-based Intervention

Miriam McSweeney, Kyoko Murakami

We present an activity theory analysis of the data collected from Department A during the formative Developmental Work Research Intervention (hereafter DWR-based intervention), which took place between January and December 2010. We begin with describing the problem, followed by a brief overview of Developmental Work Research intervention (Engeström, 2007) as the tool for changing the lecturers' pedagogic practice. We present an Activity-Theory-led analysis focusing on the movement of objects in the activity system, tracking the object in the course of the six intervention sessions. Lastly, we conclude that our analysis on tracking the object according to Activity Theory reveals the pervasive nature of emotions in the lecturers' work practice. We draw implications for future work for advancing Activity Theory, especially an emotional dimension of the Activity-Theory led intervention research.

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future work for advancing Activity Theory, especially an emotional dimension of the Activity-Theory led intervention research.

As a full-time lecturer in Department A, the first author has had the opportunity to work in different schools and campuses across a Higher Education Institute in the Republic of Ireland. The technology MOODLE, a virtual learning environment (VLE, hereafter). Academic staff viewed MOODLE with a certain level of discomfort, especially those not using it, although there was a general feeling that MOODLE should be employed. The university provided training courses in MOODLE-use, but they were often poorly attended. Lecturers could have regarded MOODLE as a starting point for the technological transformation of their practice, but their interest and motivation in doing so seemed low. As being a straightforward educational technology, MOODLE itself does not seem to be the problem, but that something about the lecturers' work context may have been contributing to the problem.

It is argued ([Conole, 2010](#); [Selwyn, 2011](#)) that explorations of lecturers' engagement with Technology Enhanced Learning (TEL) have predominantly focused on the technologies themselves, driven by the belief that technologies are capable of improving education. Our interest moves away from a potentially technologically deterministic approach to a more encompassing one, namely an Activity Theory ([Engeström, 1987](#)) perspective. With the Developmental Work Research-based intervention ([Engeström, 2007](#)), the lecturers moved to a position of critical engagement with MOODLE. Similar to [Palmer \(2009\)](#), the lecturers' everyday work context did not afford the opportunity to participate in collaborative work, whereas the DWR-based intervention sessions enabled a collaborative working space where lecturers could share their experiences, understandings and practice. It was found that when lecturers meet with colleagues who are more adept in the use of teaching technologies, they can relate the potential of the technology to their own practice: the collaborative effort enables development.

From an Activity Theory perspective, collaboration can be viewed as object formation. Similar to other studies ([Engeström, 1987](#); [Miettinen, 1998](#)), when the lecturers engaged in collaborative discussion, they identified a shared object—to explore the potential of MOODLE to enhance their pedagogic practice. In the collaborative context, afforded by the DWR-based intervention, the lecturers explored historical tensions and contradictions, which in turn highlighted the shared object of the lecturers' activity. Our analysis focuses on tracking the movement in the lecturers' object throughout the Intervention. The shifting and developing object of the lecturers' activity system was, as [Daniels \(2010b\)](#) suggests, related to the motive that drove it, i.e., the lecturers' desire to explore the potential of MOODLE to enhance their pedagogic practice.

534 Young People: Transitions, Identities and Futures

Helen Haste,¹ Thalia Magioglou,⁵ Laura Boubert,⁵ Reidar Schei Jessen,⁶ Luca Tateo,⁶ Orkun Yetkili,⁵ Deborah Husbands,⁵ Jamile Leidiane dos Santos César,² Adam King,³ Nikola Turière,⁴

¹ University of Bath , Bath , United Kingdom

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Presentation: Symposium (90 minutes)

Theme: Imagining future worlds

Keywords: Young People Future Aspirations Transitions Meaningful education

SHORT ABSTRACT

Our symposium is part of an ongoing discussion that started in the conference we organised at the University of Westminster in October 25, 2023 (<https://www.westminster.ac.uk/events/young-adults-transitions-identities-and-future>). This symposium aims to connect this discussion on the transitions of Young People and their identities with ways to support them. Our panel members encompass research on different aspects of these transitions from the perspective of Cultural, Political and Educational Psychology. We will explore how these perspectives may bring new ways to understand and to enable inclusive, just and peaceful community building both within our “multiple” selves, our homes, neighbourhoods, work-life, our social media circle, country and global community. We will also discuss how we can diversify and decolonise Cultural and Political Psychology in ways which could contribute to democracy as a form of community building and decision making inclusive of groups historically misrepresented in their socio-political context, but also marginalised from important decisions because of their race, gender, age, or other minority status.

EXTENDED SUMMARY

Our panel will explore aspects related to employment, future aspirations, Imposterism and interiorisation of structural inequalities, community building, activism and civic engagement.

Who are the “Young people”?

What are their challenges and aspirations both in and after they leave the education system?

Which groups are experiencing more difficulties and vulnerabilities due to race, class, gender or other intersectional identities?

How do they engage with activism, citizenship?

How can they be supported in their journey?

Keywords: Young People, Future Aspirations, Transitions, Identities, Future Challenges

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Young Adults between Civic Engagement in the Public Space and Personal Aspirations: discussing data from Greece and the UK (in person):

Dr Thalia Magioglou: (UoW)

The presentation is based on a study with Young Adults' in London (18-25 year olds). The research question explores the way young people construct their future aspirations and challenges. The approach adopted is that of social representations (Moscovici, 2001; Howarth, 2006), where future aspirations are conceptualized as shared meanings, constructed through communication and practices, in specific socio-cultural and historic contexts. Previous, over time research on young adults' representations of democracy in Greece with in-depth interviews (Magioglou, 2008; 2017) has highlighted that young adults interviewed on the representation of democracy, were bringing up their personal fears and aspirations for the future. In this research, the aim is to investigate whether the term "aspirations for the future" is associated to societal and political values, social representations of a common future, in the light of the importance that Extinction Rebellion, Black Lives Matter and anti-Brexit movements have acquired among young people.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

The research question explores the way young people construct their future aspirations. The approach adopted is that of social representations (Moscovici, 2001; Howarth, 2006), but also of cultural psychology (Valsiner, 2019; Zittoun, 2006) where future aspirations are conceptualized as shared meanings, constructed through cultural resources, communication and practices, in specific socio-cultural and historic contexts. Previous, over time research on young adults' representations of democracy in Greece with participants from different social and political backgrounds (Magioglou, 2008; 2014; 2017) has highlighted that young adults interviewed on the representation of democracy, were bringing up their personal fears and aspirations for the future.). Overall, the future appears either as an "individual achievement" attainable for the minority of the participants, or as collective distraction and fear, for the majority. In this research, the focus is on the investigation of the construction of the "aspirations for the future" for young adults and whether this representation is constructed as an individual path or also embedded in societal and political values, social representations of a common future, in the light of the importance that Extinction Rebellion and Black Lives Matter have acquired among young people.

Method

Semi-directive interviews were used, with an interview guide composed of four open questions focusing on future aspirations and challenges in different areas from personal to career and experiences: What are your future aspirations? (If the participant says they don't have any, alternative question: if I tell you "future aspirations" what comes to your mind?)

-How would you like your life to be in the future?

-What are your aspirations regarding your career and professional life? (If not, can you elaborate, tell me more ...)

-How would you like your personal life to be? (Can you elaborate...)

-Do you have other goals or desires that are important to you? (If not can you elaborate?)

Our objective has been to examine whether the university experience participates in the construction of common representations of aspirations for the future or accentuates shared fears (Hoskins &

Barker, 2017). A thematic analysis (Braun & Clarke, 2006) has been conducted on the transcripts of the interviews, and they are discussed in comparison to previous studies (i.e. Haste&Hogan, 2006), and the social profile of the participants. Our findings are compared with those of previous research in order to discuss shifts in values that can be observed in current cohorts of young people.

Results

The thematic analysis resulted in four themes:

Back to the Future-Influence of the PAST:

Or the importance of personal history/trauma of significant others (parents, siblings, ...) or their own traumatic experiences during childhood

Hopes/fears to achieve a middle class life:

beautiful home, good job, family, car

Personal desires dismissed as UNREALISTIC:

experiences for a limited period of time before getting serious

Societal values as offering back to family and community, or specific groups (e.g. special needs children, imprisoned youth), or character traits (being less egoistic)

NO MENTION TO WIDER SOCIAL GROUPS, Common Good or activism

Finally, the results highlight a tension between two main themes: a. the possibility of a “safe and secure” individual future, and b. the certainty of a dystopic collective future, for those who are not engaged in any form of activism. How is it possible to be hopeful as an individual when the world future is perceived as dystopic? The rational thing to do would be to fight or flight in the face of a perceived threat. This is not presented as completely illusory since there are representations of individual success in the content of the media and the social media, which the participant young adults consume.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Time perception in first year undergraduate: correlation with stress, anxiety and depression (in person)

Dr Laura Boubert (University of Westminster, UK)

The transition from school to university is a period of intense change for young adults. For many, it means moving away from home for the first time, learning to manage many aspects of independent living that they’ve never had to do before, alongside integrating to a new social circle of friends and adapting to new more independent ways of studying. More students than ever are reporting symptoms of depression and anxiety, which is directly linked to their coping skills.

One area often reported to cause difficulty is time management, The level of stress experienced by a student was measured using the Undergraduate Student Questionnaire (Crandall et al, 1992), anxiety and depression were measured using the State Trait Anxiety Text and the Becks Depression Inventory, respectively. The study focuses on the importance of the symbolic transition of young adults between the school and the University cultures which differ in their representation and the organisation of time.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

The transition from school to university is a period of intense change for young adults (Worsley et al., 2021). For many, it means moving away from home for the first time, learning to manage many

aspects of independent living that they've never had to do before, alongside integrating to a new social circle of friends and adapting to new more independent ways of studying. More students than ever are reporting symptoms of depression and anxiety, which is directly linked to their coping skills (Duffy et al., 2020) .

One area often reported to cause difficulty is time management, which relies heavily on a person being able to make realistic cognitive judgements about time passing, which is crucial in planning study time and in particular working to assessment deadlines. Time management relies heavily on a person being able to make realistic cognitive judgements about time, an ability which can be measured experimentally. It is known that perception is different in people with depression and anxiety compared to healthy participants so here (Mioni & Stablum, 2014; Sévigny et al., 2003), we asked whether the cognitive ability to perceive temporal order, temporal bisection and prospective movement might be different in those students who are experiencing high stress levels.

These were measured with a series of computerised behavioural experiments. The first measured participants' accuracy to distinguish the order in which either visual appeared on the screen as the interval between them decreased from 96ms to 0ms (Block & Gellersen, 2010), the second measured their accuracy in distinguishing between the length of 2 auditory stimuli. The final task required participants to judge how long it would take for a visual target to travel across the screen. The level of stress experienced by a student was measured using the Undergraduate Student Questionnaire (Crandall et al., 1992), anxiety and depression were measured using the State Trait Anxiety Text and the Becks Depression Inventory, respectively.

The study revealed a correlation between scores on the undergraduate stress questionnaire and prospective time estimations, which suggests that under stressful situations, students underestimate the time tasks will take, which could in turn impact their studies.

These findings highlight real individual differences between students, which reflects the enormous shift in the demographic of student population in the last 20 years. This diversity means that old teaching techniques and pedagogies (Winstone & Hulme, 2019), along with how we help students to develop the essential study skills for their successful journey through Higher Education, need to become more flexible to adapt to different student profiles. There is a growing shift in individualisation in teaching and learning as well as in the support provided for students, especially in their first few weeks settling in. Future HE success is going to be dependent on the agility of Universities to become more inclusive of the range of cognitive and cultural aptitudes of their students, to create more opportunities for students to become aware of their skills and how to enhance them. The study focuses on the importance of the symbolic transition of young adults between the school and the University cultures which differ in their representation and the organisation of time.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Branded Clothing, Identity Development and Social Relations Between Brazilian Adolescents

Jamile Leidiane dos Santos César, (Federal University of Bahia, Brasil) and Prof. Luca Tateo, (University of Oslo)

The talk discusses how branded clothing use relates to the developing identity and social relationships of Brazilian urban adolescents. A netnographic case study of a teenager from the northeast of Brazil will be shortly presented. The theoretical articulation between psychoanalysis and

semiotic cultural psychology will be used to explore how brands mediated the elaboration of the universe of meanings and the personal narratives.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Supported in an articulation between semiotic cultural psychology and psychoanalysis, this research aimed to understand how the use of branded clothing and accessories is articulated to the development of identity and social relationships among young people, taking identity as a set of identifications that a person establishes throughout his life, dynamically, from the social cues. Based on the notion that clothing and accessories have meanings that extend beyond their use value, constituting an old and well-known way of marking distinctions between people and groups, and that young people are precisely the biggest consumers of this type of products, this research sought, through the netnographic case study of a young resident of the metropolitan region of Recife, as well as the insertion in social networks like Instagram and Youtube platform, where young people from all regions of Brazil produce and discuss content on the subject, understand the universe of meanings attached to the use of some popular brands among young people, as well as the narrative produced by them on the subject. Thus, this research sheds new light on the process of identification with brands and people, as well as the internalization or not of social cues that will configure identity in this sense, raising some new questions about what else may be behind this process.

Keywords: Identity; Clothes; Youth; Cultural Psychology; Psychoanalysis.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

The Impostor Phenomenon Among Racially Minoritised Students in Higher Education

Dr Orkun Yetkili (UoW) and Dr Deborah Husbands (UoW)

Dr Orkun Yetkili and Dr Deborah Husbands report the findings from a multi-method funded project. Participants were Black female undergraduate students in the UK and the US. The quantitative study found that as feelings of being an impostor increased, students reported lower belongingness and reduced task and citizenship performance. Sense of belonging mediated the effect of IP on school satisfaction and student performance measures. The qualitative study gathered four themes from focus group data with a novel finding. Implications and recommendations will be discussed.

Keywords: impostor phenomenon; racially minoritised students; sense of belongingness

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536 Teacher growth in a professional development program on historical reasoning in primary schools

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¹ Universiteit van Amsterdam and Iselinge Hogeschool, Amsterdam and Doetinchem, Netherlands

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: teacher professional development primary teachers inquiry-based history learning

SHORT ABSTRACT

This study reports on the ways in which a professional development (PD) programme results in change in teachers' knowledge, attitudes, and practice. The programme taught primary school teachers to reason historically and develop skills to design inquiry-based lessons for historical reasoning. The programme was tailored to participants' needs, promoting teacher agency in inquiry and implementation. It consisted of fifteen 2.5-hour meetings spread over two school years.

Teacher development was monitored through:

- in-depth individual interviews (pre and post)
- interactions between participants in recorded PLC meetings

The model at the basis of the study and analysis is the Interconnected model of teacher professional growth (Clarke & Hollingsworth, 2002). Analysis focused on individual development trajectories and a description of change sequences and growth networks that indicate teacher change during the programme. The interviews indicated that a combination of professional experimentation (engaging in historical inquiry, searching and using historical sources when designing lessons and bringing lessons into practice), information and stimuli of external sources (modelling historical inquiry by the facilitator, connecting theory about historical reasoning and inquiry to teachers' experiences during experimentation) and seeing positive outcomes in pupils was fruitful. Examples of growth networks are provided that show how teachers gained more knowledge of historical reasoning and pedagogic approaches to promote it in students and made changes in their practice.

EXTENDED SUMMARY

Background

Professional development (PD) for teachers is crucial for maintaining high-quality education (Clarke & Hollingsworth, 2002). As history is one of the challenging subjects for many primary school teachers, PD focusing on subject-specific history teaching skills can be meaningful for schools, especially since researchers emphasize the importance of historical reasoning and inquiry activities in teaching history to young pupils (Levstik & Thornton, 2018; Van Boxtel et al., 2021). To address this, we developed a two-year PD programme, 'The history workplace', where teachers learn the concepts of

historical reasoning, collaborate on inquiry and design lessons to engage children in grade 3-6 in historical reasoning and inquiry. These inquiries are examples of play in Van Oers' (2013) definition. The programme was tailored to the teachers' needs, promoting teacher agency in inquiry and practical implementation. We drew inspiration from Engeström's (2011) formative interventions. The model at the basis of the study is the Interconnected model of teacher professional growth (Clarke & Hollingsworth, 2002). In this model, Clarke and Hollingsworth describe how teachers' professional development is a process of enactment and reflection between an external stimulus (like a PD programme) and professional acts in the domain of practice, with effects in the domain of consequence and the personal domain. Teacher change occurs as an interplay between these change domains. Clarke and Hollingsworth warn that although PD can lead to different forms of change in teacher practice, 'short-time change should not be mistaken for long-term growth' (2002; p. 959).

Aims

The research question of this qualitative study is: How does a PD programme, in which primary school teachers learn to reason historically and develop skills to design inquiry-based historical reasoning lessons, result in change in teachers' knowledge, attitudes and practice? We aim to identify aspects of the programme that promote sustainable change (growth).

Methods

The PD program, set up as a PLC, is based on scientific literature concerning effective professional development for primary teachers, inquiry-based lessons and historical reasoning and interviews with prospective participants (Potjer et al., submitted). The program consisted of fifteen 2.5-hour meetings over two school years. Participants were actively involved in all parts of the meetings, as active partakers in inquiry, active learners when information was shared and discussed and as teachers talking about how to adapt activities for their pupils and in developing new lessons. Six teachers from three primary schools in the Netherlands participated. Teacher development was monitored through: in-depth individual interviews (pre and post)

interactions between participants in recorded PLC meetings

Code books were developed for the analysis of the interviews and the analysis of interaction in meetings (Potjer et al., 2024; Potjer et al., submitted). Intercoder agreement for the interviews was Cohen's kappa 0,76 and for the interactions 0,72. A second step in the analysis focused on mapping change sequences and growth networks that show teacher change during the programme.

Results

The analysis of interviews showed that a combination and repetition of professional experimentation, stimuli of external sources and seeing positive outcomes in pupils was fruitful for teacher development. In combining remarks during the meetings with reflections in the final interviews we got insight in how specific teacher change occurs. Examples of this are shown in Figure 1 and 2 which demonstrate interactions between the external domain (E), the personal domain (Pe), the domain of practice (Pr) and the domain of consequence (Co).

In Figure 1, change is visible in Rose's experiments in the classroom based on new practices from the PD programme (arrow 1). Rose describes outcomes she sees in her pupils (arrow 2) and reflects on becoming more proficient in asking questions that prompt further inquiry and reasoning (arrow 3). In Figure 2, Evelyn explains how the meetings inspired her to do historical inquiry in her class (arrow 1) and how she reflected on materials from the PD program (arrow 2) to make motivated choices for her lessons (arrow 3). She describes how pupils reacted to the lessons (arrow 4), but also reflects on her

choices and beliefs about history (arrow 5). Afterwards, she reflects on her professional growth (arrow 6). The back-and-forth enactment and reflection (arrows 2, 3, 5) is indicative of growth, because it shows how development in the domains of practice and consequence, lead to change in aspects of the personal domain (like attitude and beliefs).

Figure 1: Change sequence about teaching skills that promote historical reasoning: Rose

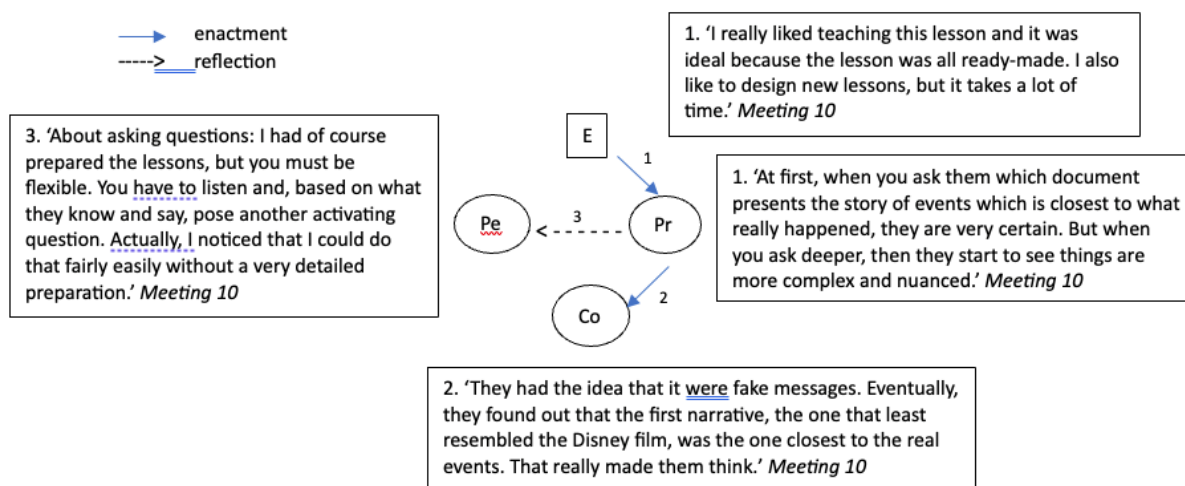
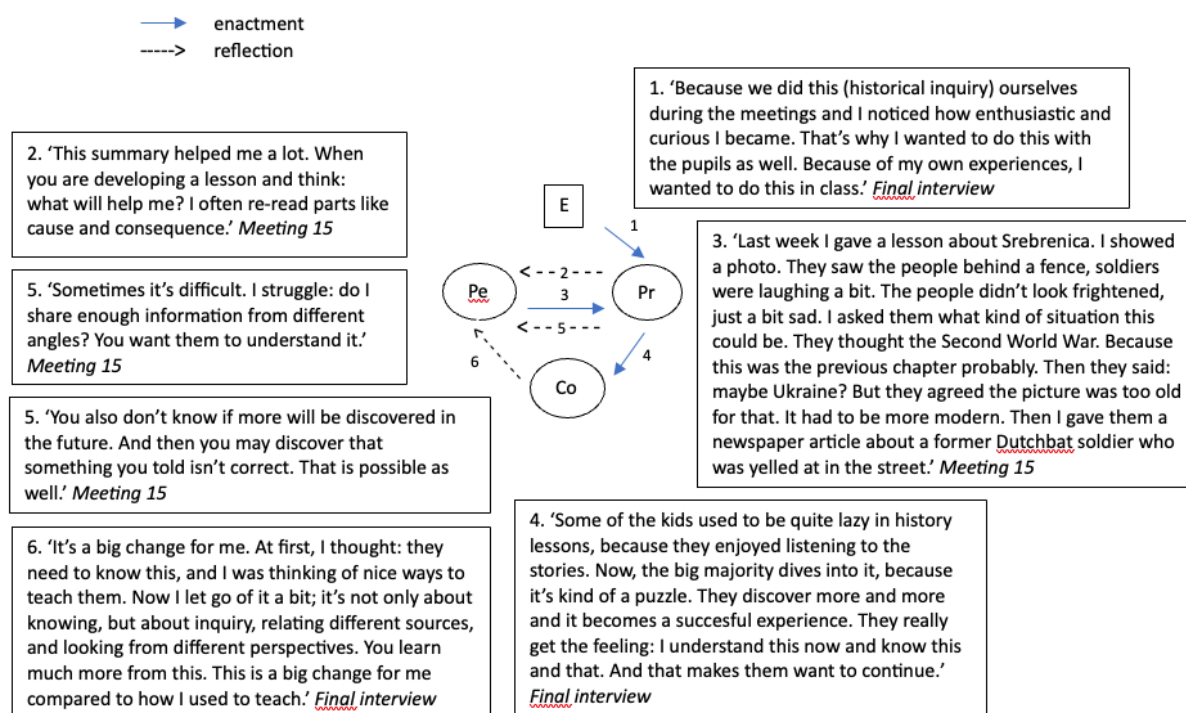


Figure 2: Growth network indicating lesson design, teaching and reflection on these: Evelyn



The coding of interviews and interaction during meetings has been completed and at this time the second step of analysis is in progress.

Conclusions

One preliminary conclusion is that combining inquiry by participants with reflective talk and by designing inquiry in which participants transfer their experience to the level of the students, constitutes a stimulus for development in both the personal domain and the domain of practice.

Interaction with the participants

Participation in an exercise.

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537 Supporting pupils with special needs in emergency situations: the reflective and activity approach

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¹ Stockholm University, Stockholm, Sweden

Presentation: Discussion table (45 minutes)

Theme: Bringing together theory and practice

Keywords: Vygotsky pupils with special needs emergency education

SHORT ABSTRACT

The presentation focuses on discussion of possibilities of organizing education for pupils with special educational needs and disabilities (SEND) during emergency situations similar to that of the COVID-19 pandemic in the light of the Vygotsky's Principle "One Step in Learning — A Hundred Steps in Development" as described by Zaretsky (2015). It is built on findings from research conducted with parents of adolescents with SEND aimed to explore their perspectives of provision of educational and special educational support by school professionals in general lower secondary schools (grades 7-9) during the pandemic in Sweden. The discussion will seek to understand ways and possibilities to apply the reflective and activity approach (Zaretsky et al., 2013; 2015) to provide high quality special educational support in general (inclusive) school settings during emergency situations that may arise in the future.

EXTENDED SUMMARY

Background

It has been proposed that Vygotsky's multi-vector model of the zone of proximal development – an important conceptual tool of the reflective and activity approach – can be used to provide educational support to children with special needs and disabilities to promote their positive development as expressed by Vygotsky's expression "one step in learning may denote hundred steps in development" (see Zaretsky, 2015).

538 "It was the high school or the street": narrative structures for school persistence.

Gonzalo Gallardo, ^{1, 2, 3}

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Exclusion Learner Identity Educational Meaning

SHORT ABSTRACT

The activity of producing a learner identity typically woven through narratives (Coll & Falsafi, 2010). As narrative production, this activity is related to the discursive genres and narrative structures available in the life context of each subject. Nowadays, the ideology of merit, the emphasis on innovation and self-regulation promoted by the self-entrepreneur (Bröckling, 2015) and the so-called "société du concours" (Allouch, 2017) reinforce the individualizing and heroic perspective of the narratives available to trace and narrate educational trajectories.

This presentation will illustrate through two cases of Chilean high school students the narrative efforts and symbolic resources that have to be elaborated by those who cannot credibly tell their learning stories in a heroic way, having to include failure and exclusion in their narratives in order to persist in the educational system. In these cases, faced with major life difficulties and events signified as failures by their contexts, both students used alternative narrative structures to the marvelous or heroic narrative to narrate their school stories: (1) the testimonial account of conversion and (2) the penitent's account or ascent from purgatory. In both cases, going to school only made sense in terms of "cleaning up" one's resume or showing the world a new face of oneself, capable of transcending the negative stigmas that had previously characterized them. Their cases invite us to urgently consider challenging the dominant school narrative that refers to learning as an individual adventure, where the selective enlightenment of some restricts the possibilities of involvement of others.

EXTENDED SUMMARY

Fragmentation of the school experience

In Chile, 12 years of compulsory schooling have been guaranteed for more than 20 years. This has meant extending the educational limit of the population and the juvenile condition. This national effort has not had a redistributive correlate in terms of results and development opportunities. The school experience is fragmented, and the social origin still has a relevant weight in shaping the educational trajectories of children and adolescents (UNDP, 2017)

In this scenario, a phenomenon of growing development is the progressive loss of relevance of school activity among the adolescent population, especially in contexts of poverty. Students do not see a correlation between the promises of education and the concrete results of their school practice. In

such a scenario, it is difficult for many students to find meaning in education. The pandemic and school closures exacerbated this phenomenon.

The absence of meaning in school activity must be assumed as a serious educational problem.

Building a learner identity, linking through narratives the learning activities with the development of the self would be directly related to the involvement in learning (Barbier, Bourgeois, De Villers, & Kaddouri, 2006; Kaddouri, 1996; Sebastián, 2005; Gallardo & Sebastián, 2016). From the encounter between training and identity, the student's cognitive investment, the motivation placed on the task and his or her affections linked to learning are derived (Bourgeois, 2000).

The activity of producing a learner identity

The activity of producing a learner identity typically woven through narratives (Coll & Falsafi, 2010).

As narrative production, this activity is related to the discursive genres and narrative structures available in the life context of each subject. A narrative is not elaborated in a vacuum, every culture offers argumentative plots that can be adopted by its members, who can share with others the characteristics of a common argument or narrative structure (v.g. Polkinghorne, 2005).

Educational activities tend to privilege the development of narratives related to the heroic story, structures like those of wonderful tales, where every student is itself positioned as the hero of a process in which he or she must overcome various tests to obtain victory, represented in awards, distinctions, marks of status and recognition (Gallardo & Sebastián, 2016; Sebastián, Gallardo & Calderón, 2016). The ideology of merit, the emphasis on innovation and self-regulation promoted by the self-entrepreneur (Bröckling, 2015) and the so-called "société du concours" (Allouch, 2017) reinforce the individualizing and heroic perspective of the narratives available to trace and narrate educational trajectories. In a world of winners and victors the defeated counterparts are obscured, marked as responsible for their academic failure, dropout or early exit from the educational plane. This presentation will illustrate through two cases of Chilean high school students the narrative efforts and symbolic resources that have to be elaborated by those who cannot credibly tell their learning stories in a heroic way, having to include failure and exclusion in their narratives in order to persist in the educational system. In these cases, collected through in-depth interviews in the framework of a larger study (Gallardo, 2012; Gallardo & Sebastián, 2016), faced with major life difficulties and events signified as failures by their contexts, both students used alternative narrative structures to the marvelous or heroic narrative to narrate their school stories: (1) the testimonial account of conversion and (2) the penitent's account or ascent from purgatory. In both cases, going to school only made sense in terms of "cleaning up" one's resume or showing the world a new face of oneself, capable of transcending the negative stigmas that had previously characterized them. The skillful use of literary mechanisms by schoolchildren will be discussed from what Vygotsky (2008) postulated when analyzing differences and similarities between a professional author and a popular storyteller. For Vygotsky, there would not exist -from the psychological point of view- any fundamental difference between the creativity processes of a popular storyteller and the work of a professional author. Author and popular storyteller, being members of the same culture, would be immersed in a common literary tradition or current. In analogy with the above, the use of narrative structures recognized in literary analysis by the students interviewed would account for the presence of these structures in their culture.

The cases to be presented represent students who, while inside schools, learned that learning was not an activity to which they were invited. Their physical permanence in classrooms and high schools

was justified in order to avoid the threat and risk that inhabits the street, to avoid exclusion and to save their image before the world. Their cases invite us to urgently consider challenging the dominant school narrative that refers to learning as an individual adventure, where the selective enlightenment of some restricts the possibilities of involvement of others, where success is based on discarding.

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539 Activity Theory: The History, Significance and Future Prospects (Part 2)

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² University of São Paulo, São Paulo, Brazil

³ Tampere University, Tampere, Finland

⁴ University of California, San Diego, San Diego, United States

⁵ City University of New York, New York, United States

Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: Activity Theory CHAT Integration of theory and practice

SHORT ABSTRACT

This is Part 2 of the two-part symposium titled: Activity Theory: The History, Significance and Future Prospects.

This symposium features a recent book titled *Activity Theory: An Introduction*, which presents a unique approach to studying the nature, origin, and development of human subjectivity. Its core proposition is that the mind cannot be reduced to individual brain or body functions, nor can be understood as a discursive or cultural phenomenon. Instead, Activity Theory posits that the mind emerges and develops inter-subjectively, and is internalized by individuals always embedded, along with their culture and language, in the context of object-oriented social practices. By refocusing the lens of inquiry from the individual onto the patterns of activity in which they move, this method illuminates a special reality—the materiality of human practice, which shapes the subject in ways that biological and cultural explanations cannot fully capture.

The symposium assembles current scholarship from prominent figures across diverse fields who share the Activity Theory approach. It presents their findings and reflects on Activity Theory's history, significance, and prospects, with contributions by Mikael Brunila, Juliano Camillo, Michael Cole, Yrjö Engeström, Cathrine Hasse, Alex Levant, Miriam McSweeney, Cristiano Mattos, Kyoko Murakami, Juhana Rantavuori, André Machado Rodrigues, Annalisa Sannino, Anna Stetsenko.

EXTENDED SUMMARY

This symposium features a recent book titled *Activity Theory: An Introduction*, which presents a unique approach to studying the nature, origin, and development of human subjectivity. Its core proposition is that the mind cannot be reduced to individual brain or body functions, nor can be understood as a discursive or cultural phenomenon. Instead, Activity Theory posits that the mind emerges and develops inter-subjectively, and is internalized by individuals always embedded, along with their culture and language, in the context of object-oriented social practices. By refocusing the lens of inquiry from the individual onto the patterns of activity in which they move, this method illuminates a special reality—the materiality of human practice, which shapes the subject in ways that biological and cultural explanations cannot fully capture.

Activity Theory to the current generation of theorists and researchers. Originating in early Soviet psychology, suppressed by Stalin, and later rediscovered, this rich theoretical tradition and intellectual movement proliferated globally and developed in different directions across a variety of disciplines. However, until recently it remained “the best-held secret of academia” (Engeström 2009).

The symposium assembles current scholarship from prominent figures across diverse fields who share the Activity Theory approach. It presents their findings and reflects on Activity Theory’s history, significance, and prospects, with contributions by Mikael Brunila, Juliano Camillo, Michael Cole, Yrjö Engeström, Cathrine Hasse, Alex Levant, Miriam McSweeney, Cristiano Mattos, Kyoko Murakami, Juhana Rantavuori, André Machado Rodriguez, Annalisa Sannino, Anna Stetsenko.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Thinking with Cultural-Historical Activity Theory: Examining Science Education Key Issues

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Keywords: Science Education Research, Historicity, Object and future oriented activity

This work aims at exploring the challenges and complexities of science education in contemporary society. We argue that science education, traditionally, is often based on an overload of fragmented concepts and facts that are rarely relevant to students' lives, leading to a disconnect between learning science and transforming society in a radical way.

We highlight the importance of Cultural-Historical Activity Theory (CHAT) in providing a framework for analyzing key issues in science education, based on two principles: historicity and object-oriented and purposeful activity.

We emphasize the importance of the critical analysis of knowledge production in science education and the need to move beyond a technocratic and deterministic view of science. We conclude by calling for a more critical and transformative pedagogical approach that empowers learners and fosters a deeper engagement with science and an alternative future.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Background

Take into account the turbulent landscape of science education in contemporary society, the growing societal disputes surrounding scientific knowledge, such as vaccine effectiveness and environmental concerns, the widespread distrust in science and institutions, and the traditional dichotomy between training future scientists and educating non-scientists in a society permeated by science related issues, there is the need to offer an alternative conceptualization and analysis of key issues in the field of science education based on a critical approach to human development, which is offered by Cultural-Historical Activity Theory (CHAT) in terms of the principles of historicity and object-oriented and purposeful activity.

Aims

This work aims to critically analyze the current state of science education, highlighting its challenges, limitations, and disconnect from societal radical transformation. It seeks to question traditional approaches and shed light on the need for a more critical approach to science education practices. Moreover, this work aims to demonstrate the relevance and applicability of CHAT in the context of

science education, showing how CHAT can provide a comprehensive framework for understanding key issues in science education, emphasizing its historical, social, and purposeful dimensions.

Methods

This work draws on theoretical analysis, literature review, case studies, and reflective practice to provide a comprehensive and compelling argument for the adoption of CHAT principles in science education.

Results/Conclusions

Historicity: CHAT highlights the historical context in which scientific knowledge is produced and understood. By acknowledging the historical development of scientific concepts and practices, educators can help students appreciate the dynamic and evolving nature of science. This perspective challenges traditional linear views of science education and encourages a more nuanced understanding of scientific knowledge production.

Object-oriented nature of human activity: According to CHAT, human activity is purposeful and directed towards specific goals or objects. In the context of science education, this means that learning science is not just about acquiring facts and concepts but also about engaging in meaningful activities that contribute to a deeper understanding of the world. By focusing on the object-oriented nature of science education, educators can design learning experiences that are more engaging and relevant to students.

Co-authoring community practices: CHAT emphasizes the collaborative and social nature of learning. In science education, this means that students should be actively involved in co-constructing knowledge with others and engaging in authentic scientific practices. By promoting collaboration and community engagement, educators can create a more interactive and participatory learning environment that fosters deeper understanding and critical thinking skills.

Critique of mainstream science education: CHAT challenges traditional approaches to science education that prioritize memorization of facts and passive learning. By highlighting the limitations of technocratic and deterministic views of science, CHAT encourages educators to adopt a more critical and reflective stance towards science education.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Foundations of Educational Studies of Agency: An Activity-Theoretical Critique

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Keywords: Theories of agency; Dialectical rationale of contradictions; Cultural-historical activity theory

This study engages the dialectical rationale of contradictions from cultural-historical activity theory (CHAT) in critical dialogue with three theories of agency from psychology and sociology, which are frequently used as foundations of educational studies of agency and which seem to have transferred somewhat uncritically to the field of education: Bandura's social-cognitive theory, Archer's realist social theory and the chordal triad approach by Emirbayer and Mische. The perspective developed here suggests that the use in the field of education of these three theories have led to dominant conceptions of agency primarily seen as an inherent quality residing within the individual, or as an outcome of a vaguely defined interplay between individuals and their social contexts. These views of agency are problematic for a domain which is so crucial to foster agency in the making of a just and sustainable world.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

This study explores the suitability of psychological and sociological conceptualizations of agency for the field of education, offers arguments toward the renewal of inquiries on agency in educational research, and presents CHAT dialectical rationale of contradictions for such a renewal of educational studies of agency.

Arguments are put forward pointing out that the borrowed conceptualizations from Bandura's social-cognitive theory, Archer's realist social theory and the chordal triad approach by Emirbayer and Mische build on the classic rationale of non-contradiction, which has significant limitations to contribute to formative and transformative endeavors in society. This is in fact a rationale that prioritizes the identification of fixed and pure categories. As such, contrary to the rationale of contradiction, it does not account for movement and for relations among seemingly incompatible and contradictory terms. To illustrate a key difference between the two rationales, let's take the example of a person that is showing no agency at all. A rationale of non-contradiction would lead this person to be considered a passive agent. A rationale of contradiction, instead would lead to consider the circumstances that prevent this person from undertaking agentive actions and to explore ways in which these circumstances could be overcome. Educational scholarship on agency must be able to inform concretely lived processes and socially productive relations.

As an alternative to the status quo, this study proposes a CHAT perspective in which a dialectical rationale of contradiction is seen as a useful means to develop conceptualizations of agency that lend themselves to the actual fostering of transformative capacities, i.e., contributing to the creation of conditions to concretely enact agency. With the lenses of CHAT dialectics, agency is an inherent feature of human action, embedded in and interacting with historically developing activities as a process through which human beings change themselves and the history of the activities they inhabit. This means that instances in which agency may seem not to be occurring, can actually be instances of agency after all and that even those who may be considered least agentive can exert agency if suitable conditions are developed that may support this development.

Instead of bypassing concrete processes through which individuals and collectives struggle with structures, prescriptions, and procedures, CHAT rationale of contradiction invites us to dig into what people actually do. This may lead to noticing local experimentations and innovations that are often disregarded under abstract categories that do not allow accounting for them. The study encourages educational researchers to turn to CHAT dialectical rationale of contradiction, outlined in this presentation, to explore how the lived drama of agency in today's capitalism translates into everyday instances of enacted transformative agency and how their research can contribute to support this type of agency.

The presentation of the study will proceed in the following steps. First, the conceptualizations of agency in the works initiated by Albert Bandura, Margaret Archer, Mustafa Emirbayer and Ann Mische will be briefly summarized and critically discussed. Then, a CHAT led dialectical rationale will be presented as a perspective which could be more suitable to educational inquiries on agency. Continuing the critical dialogue started in the first three sections, the fourth section elaborates on the differences between the rationale of non-contradiction informing the discussed three theories and CHAT's dialectical rationale of contradiction. The conclusion summarizes the arguments put forward in the study and its contribution to the way in which CHAT rationale on contradiction can inform future research on agency.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Chatting about CHAT

Michael Cole, University of California, San Diego

Keywords: cultural, historical, activity

My presentation describes the origins of the idea of cultural-historical, activity theory during the 1980's.

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SYMPOSIUM PAPER 4, SHORT ABSTRACT:

This talk contributes to taking stock of, and charting possible futures for, Activity Theory (AT) by considering its contemporary relevance to today's sociopolitical struggles. I problematize the legacy of Marx and Vygotsky in light of their affiliation with Eurocentric traditions and possible charges of colonialism and racism. Is it possible, as Audre Lorde cautions, to draw on old legacies such as Marx and Vygotsky's at such a critical time, as allies in the struggle against neocolonialism, hegemony, planetary devastation, and racism? Caution is especially warranted given the proliferation of a radically critical scholarship exposing the grave dangers of Eurocentric approaches associated with Western imperialism and colonialism including epistemic violence. Yet my answer is positive as predicated on a substantive, and above all, critical engagement with Marx and Vygotsky. Though belonging to a broadly understood European tradition, their approach de facto goes against many of its central pillars. Briefly, theirs is a call for a philosophically grounded revision – an overhaul – of all major assumptions about human development, mind, the nature of knowledge and ultimately reality, away from assumptions of individualism, passivity, neutrality (aka objectivity), and adaptation to the status quo. The resistance and rebellion against the grim realities of the present, and the movement beyond the status quo, in a transformative-activist mode, constitutes the sine qua non of both Marxism and Vygotsky's (de-domesticated) framework. From the stance of anti-capitalism, their work can be recruited to develop psychology and education, while building on anti-colonialist, anti-hegemonic, and anti-racist premises and agendas.

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predicated on a substantive, and above all critical engagement with Marx and Vygotsky. This answer is not an abstract pronouncement from a hubris of a zero point. Instead, it is an act of taking a stance from within a particular sociopolitical context and history, as typified by specific struggles in a given context at a given time, and with concrete, future-oriented goals and ethics – a specifically anti-capitalist sociopolitical ethos – in mind. Arguably, though Marx did not provide ready-made blueprints for enacting revolutionary social changes, he did offer powerful intellectual tools for exactly such changes. Importantly, Marx insisted that such tools need to be used creatively and based in concrete realities and struggles of the day. Vygotsky, in his stead, was straddling traditions of both east and west, while generalizing from the dilemmas and disruptions of his dislocation and addressing his paradoxical legacy of disinheritance. He was responding to this complicated legacy while taking it up in his own unique way that resulted in a complex, ambitious, and challenging approach to “a resilient tradition that draws power from the very sources it is intended to combat” (Cavanagh, 1994, p.11). It is this positioning of an outcast who had to struggle for recognition, while developing new approaches for a new society during revolutionary times, at great personal costs, that likely fuelled Vygotsky’s passion in unison with the oppressed and subjugated, in striving for revolutionary changes in society at large and specifically in psychology and education. In this sense, Vygotsky’s voice resonates with the very gist of Marxism and with other critical approaches of resistance, such as by scholars of color, Indigenous scholar and scholars from the Global South. Overall, Vygotsky’s approach, at its core – just like that of Marx – is predicated on, first, associating all of human development and social dynamics with our dependency upon each other for our very survival and, moreover, this dependency is cast as an anthropological position infused with clear politics and values, at the intersection of ontology, epistemology, and ethics. Second, this approach is marked by a future-directed and transformative, revolutionary orientation. Most significantly, such an orientation is understood to be the prime condition for all forms of effective – that is, life-sustaining and life-saving – human existence and knowing-being-doing. This approach cancels no less than the major pillar of traditional ways of thinking including mainstream philosophies and sciences. Namely, what is cancelled is the contemplative (de facto, passive) stance of adaptation – that is, of accepting the world “as is,” acquiescing with what exists and thus, resorting to merely describing the world in its fixed and presumably unalterable “givenness.” For both Vygotsky and Marx, instead, nothing is fixed in place, nothing can be taken for granted as a “given,” to be accepted and adapted to. Rather, all existence comes down to challenging “what is” and moving beyond it, including and especially as regards the sociopolitical and economic status quo and its supporting ideologies. It is the resistance and rebellion against the grim realities of the present, and the movement beyond the status quo, in a transformative-activist mode, that constitutes the sine qua non of both Marxism and Vygotsky’s (de-domesticated) framework. From the stance of anti-capitalism, their work can be recruited to develop psychology and education, while building on anti-colonialist, anti-hegemonic, and anti-racist premises and agendas. Notably, this conclusion is in sync with Vygotsky’s own strategy that insists on continuing with a given tradition, while at the same time, also insisting on critically and radically challenging and even overturning any and all traditions – in striving to overcome their tired postulates and instead, aiming at developing novel, and quite daring, approaches and ideas. Social justice movements like Black Lives Matter (BLM) are in fact in a strong resonance with Marx and Vygotsky in terms of an unapologetic commitment to a radical social change, in recognizing, as did Marx, that

overturning capitalism is a matter of life versus death, requiring a transition to a new society where relations among people and their well-being, rather than profit making, are at the forefront.

542 Documenting Deservingness: Emerging evidentiary practices and expertise in US immigration

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Deservingness in Immigration Forensic Mental Health Evaluations Expert Communities of Practice

SHORT ABSTRACT

Psychosocial immigration reports written by Mental Health Care (MHC) professionals based on a forensic mental health evaluation are becoming vital pieces of evidence in U.S. immigration processes. Reports offer evidence to make an applicant's *deservingness* for humanitarian relief legible to immigration adjudicators. As an analytic, *deservingness* can make visible systemically embedded, morally-articulated inequalities (Tošić and Streinzer 2022). Humanitarian logics shift the way legitimacy of immigration claims and priorities for protection are determined by invoking compassion, representing individuals as victims, and demonstrating trauma (e.g., Fassin 2012; Tickten 2011, Lakhani 2013; Galli 2020). In current immigration contexts, justification of humanitarian action increasingly requires certification of trauma (e.g., Fassin and Rechtman 2009; Malkki 2007). My research describes emerging MHC professional communities and evidentiary practices that constitute a "documentary reality" (Smith 1974) influencing what can be mobilized as "real" in charged social, political, and legal contexts involving diverse experts and genres.

Drawing on interviews from 2020-21 with 15 MHC professionals and analysis of reports they have written, I found that evaluators had diverse professional backgrounds, professional guidelines were limited, and reports varied widely in length, style, and goals. Adopting sociocultural theories that shift from expertise as individual cognition to situated and distributed processes of doing and developing expertise, (e.g., Lave and Wenger 1991; Mertz 2007; Carr 2010; Engeström 2018), I highlight experiences and motivations of the MHC professionals, exploring how they learn to do this work, points of divergence in practices, and tensions around differing therapeutic/evaluative practices.

EXTENDED SUMMARY

In the context of US immigration, humanitarian logics of care have been challenged by heightened political tensions and severe administrative limitations. These challenges have increased the importance of, and scrutiny on, methods to demonstrate the validity of claims of *deservingness* for legal relief. Mental health care (MHC) professionals have generally provided treatment for refugees and asylum-seekers, written letters of support for migrants in their care, and assisted lawyers in eliciting migrant experiences; however, MHC professionals are increasingly asked to contribute "objective" reports based on purely forensic evaluations rather than reports grounded in extended therapeutic relationships. This shift is occurring without established standards and expectations from either professional organizations or governmental institutions (e.g., US Citizen and Immigration

Services). My research explores the professional communities and evidentiary practices emerging amidst quite charged social, political, and legal contexts.

To aid individuals seeking a legal status in the US, immigration lawyers request various types of evidence and documentation from their clients, often including expert evaluation and opinion to assess the veracity of an individual's claims in relation to legal criteria. Legal relief, immigration relief, and humanitarian relief are terms used largely interchangeably to refer to conferring a legal status that reduces harm in the form of legal protections, rights, and access to resources (e.g., stays of deportation, eligibility for employment, access to public services). Beyond certification of qualifying for humanitarian legal categories, *deservingness* must be demonstrated. Humanitarian logics often invoke "compassion for these exceptional, suffering victims" (Ticktin 2011, p. 129) and involve "choosing the best way of representing the populations assisted (for instance, as victims rather than resistance fighters)" (Fassin 2012, p. 226). In this context, justifying humanitarian action routinely requires certifying trauma (e.g., Fassin and Rechtman 2009; Malkki 2007). Legal professionals then become responsible for constructing narratives of "clean victimhood" (Lakhani 2013) and for assessing the potential to use humanitarian logics to make a case to immigration adjudicators, what Galli (2020) refers to as the "humanitarian capital" a migrant possesses.

Psychosocial immigration reports based on forensic mental health evaluations are valued by legal professionals and case managers as forms of evidence that can make an applicant's *deservingness* for humanitarian relief legible to immigration adjudicators. Deservingness has been theorized in research that examines how inequality is normalized and justified through systemically embedded moral assessments that impact distribution of, and access to, resources like healthcare, education, employment, social welfare, and legal statuses (e.g., Tošić and Streinzer 2022; Willen 2012; Zakariás & Feischmidt 2021). As genres establishing "documentary reality" (Smith 1974), psychosocial immigration reports become critical legal artifacts where client narratives, diagnostic categories (e.g., for trauma), legal codes, and judicial reasoning intersect and interact. MHC professionals are culturally-positioned to evaluate a key aspect of this figuring: psychological categorizations that recognize suffering, trauma, and other negative impacts of a situation or experience. In this context, understanding emerging systems of expertise and the mediating role of documents yields insights about how deservingness is adjudicated in US immigration.

This paper draws on my interviews from 2020-21 with 15 MHC professionals and analysis of the psychosocial immigration reports they have written. I found that evaluators had diverse professional backgrounds and reported limited professional guidance for their forensic practice. Across striking variations in length, style, and goals of the reports, MHC professionals generally considered eight elements of the reports essential: 1) objectivity, 2) readability, 3) psychometrics (results from tests), 4) professional credentials of evaluator, 5) use of clinical terms (or jargon), 6) an argument not motivated for the client, 7) highlighting trauma and suffering when possible, and 8) an *indirect* focus on legal questions and criteria. My analysis is framed through theories of learning and expertise that reject individual-as-expert, highlighting processes of doing expertise, trajectories of expert socialization, negotiations among "systems of expertise," and the situated contexts that generate perceived needs for specialized tasks to be done, roles to be fulfilled, or advice to be sought (e.g., Lave and Wenger 1991; Rose 1993; Foucault 2003; Mertz 2007; Carr 2010; Grundman 2017; Engeström 2018). The professionals involved in the evidentiary practices around forensic mental health evaluations and US immigration case-making can be understood as part of emerging "systems

of expertise,” a community of practice(s) that is working on developing expert knowledge and skills for producing forensic-based psychosocial immigration reports and addressing an expanding need for expert labor, advice, and intervention.

I will present vignettes from my research that highlight experiences and motivations of MHC professionals, how they learn to do this work, points of divergence in practice decisions, and tensions around differing therapeutic/evaluative practices. The presentation will include slides with accessible online versions so participants can read, comment and add questions at will. In the last 10 minutes, I will address any questions and comments submitted during the presentation and invite session participants to ask questions and share comments directly.

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543 Play-based teaching Laboratory: an experience of in-service teacher education in the Early Years

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Roleplay Early Childhood Education In-service teacher education

SHORT ABSTRACT

This paper reports an experience of in-service teacher education in the context of Early Childhood Education (ECE). Given the theoretical-practical gaps regarding the possibilities for educational mediation in preschool children's roleplay, particularly related to what type of educational action is necessary for play to develop, this research-intervention experience aimed to investigate, design, and consolidate developmentally-appropriate pedagogical practices in the context of ECE based on the understanding of role-playing as the leading activity at preschool age. In total, ten meetings were held, with seventeen participants divided in two groups. Teachers were required to individually and collectively design pedagogical plans for roleplaying with children and applying it in the classroom. The results were shared and collectively discussed, articulating the assumptions of cultural-historical psychology and a critical and historical approach to pedagogical science. The Laboratory's framework allowed the participants and the researchers to advance in the articulation between theory and practice, proving to be a powerful form of teacher education, as well as for scientific research into the possibilities of designing systematic practices for early years teaching focused on supporting and promoting the evolution of play. Three aspects can be highlighted as pedagogical challenges that emerged from this experience: (1) criteria for choosing play themes; (2) aspects of social relationships to be presented to children in order to promote the development of playful activity; and (3) what are the most effective forms of intervention during play, considering that excessive adult intervention tends to detract play as a child's authored activity.

EXTENDED SUMMARY

Background

Elkonin's (2019) "Psychology of Play" stands as a milestone in the scientific literature, addressing play from a cultural-historical perspective. By aiming to develop a comprehensive theory of play, his work was able to elucidate the genesis and development of role-playing, demonstrating its importance as the leading activity of the preschool age.

Elkonin (2019) argues that play has its minimum unit of analysis in the social role played by children, which allows children to synthetically reproduce the productive activities of the adults and the social relationships between people, grasping the meanings and motives underlying such relationships.

Play, therefore, should be conceived as fundamentally social activity that emerges from the relationships that children establish with the world through adult mediation.

Despite studying play from a psychological perspective, Elkonin (2019; 1960) does not fail to indicate pedagogical implications. According to the author, the teacher should not only observe what children play, but actively contribute to expanding the spheres of reality that children are aware of, as well as diverting them from anything that may have a negative influence on the evolution of play.

In an educational perspective, the theory of play shows us that the development of play depends both on preserving children's initiative in the creation of an imaginary narrative and providing good pedagogical direction: whether in role distribution or saturating the play roles with different possibilities of actions, the educator can introduce content that allows children to advance in their development, paying close attention to the ethical-political dimension of play, as it engenders decisive transformations in conscious activity. For this reason, Elkonin (2019) asserts that the importance of theoretical-scientific study of play extends beyond its instrumentalization as a didactic-pedagogical resource, but lies in the importance of play for the development of children's personality. Some questions persist within this well-established theoretical framework. After all, if play is not merely a pedagogical tool, what is its place in early childhood education? Is specific intervention necessary for play to occur and evolve? If so, how can intervention be carried out without theatricalizing it, preserving its form and fundamental content? In summary, how to educate this activity that is so crucial for development in the early years?

To address these theoretical-practical gaps and advance in understanding the possibilities for educational action in the context of role-playing, the research-intervention experience named "Play-based teaching Laboratory" was developed.

Aim

The purpose of the Laboratory was to investigate, collectively design and consolidate developmentally-appropriate pedagogical practices focused on play in childcare centers of the municipality of Bauru, formulating strategies for supporting and promoting the evolution of role-play.

Methods

The Laboratory was carried out within a research-intervention framework. Teachers were tasked with planning role-play scenarios and subsequently sharing the outcomes of their implementation. Ten weekly sessions were held, involving 17 participants. The sessions were divided into four stages: (1) problematizing the existing practices; (2) collective planning and implementing new practices; (3) discussing the results; (4) systematizing the experience.

Results and conclusion

The Laboratory allowed the articulation between research, pedagogical practice, and theoretical thinking. Faced with the task of intervening and planning play, it became necessary for participants to theoretically understand what play is. The choice of a theme and the strategies that can foster children's involvement with it emerged as a relevant pedagogical challenge, as well as the definition of strategies that are specific to different age periods. Three aspects can be highlighted as emerging pedagogical challenges: (1) what should be the guiding criteria for choosing play themes considering that the purpose of school education lies in the non-daily spheres of human experience; (2) which aspects of social relationships are most important to be presented to children in order to promote the development of playful activity; and (3) what are the most effective forms of intervention during play, considering that excessive adult intervention tends to detract play as a child's authored activity.

How interaction with the participants is planned

Participants will be invited to share their experiences with different formats of in-service teacher education.

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552 ONLINE - Rediscovering entrepreneurial learning from the interrelationship between activity system

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Student Learning Activity

SHORT ABSTRACT

Despite the notable increase in entrepreneurship education evidenced by the emergence of curricular and extracurricular entrepreneurial activities at university, scholars continue to note the lack of integration between the routines that occur in entrepreneurship and those related to school learning activities. To address this problem, this paper aims to present a theoretical-methodological analysis perspective to understand the interrelationship between systems of activities in the context of student entrepreneurship. To this end, we discuss the Historical-Cultural Activity Theory (Activity Theory or CHAT) as a theoretical-methodological research structure. Furthermore, we explore an empirical study that the first author has conducted to explore how this perspective can support research on entrepreneurial learning. We argue that entrepreneurial learning is facilitated by the interrelationship between systems of activities, which when combined, can recontextualize knowledge and trigger components in the system's structure. This enables the expansion of learning and improves students' experience at the university. Our study contributes to the literature by introducing an analytical path that transposes methodological individualism in research on entrepreneurial learning and explores the dynamic processes of learning interaction. As we identify systemic implications in learning activities, we can create a better place for student entrepreneurship and contribute to research on entrepreneurial learning.

EXTENDED SUMMARY

Entrepreneurship is recognized for its potential to generate positive impacts on society through sustainable opportunities and human creativity to solve real problems (Morselli, 2015; Garraway et al., 2022). In recent years, there has been a noticeable increase in entrepreneurship education, as evidenced by the emergence of curricular and extracurricular business activities at the university. However, scholars continue to note the lack of integration between the routines that occur in entrepreneurship and those related to school learning activities (Bezerra et al., 2017; Rae, 2003; Zhang, 2014). This has resulted in students experiencing several challenges while attempting to balance the dual responsibilities that come with being both student and entrepreneur, with some eventually foregoing one of these roles or, worse, completely giving up altogether due to burnout (Oliveira et al., 2023). In addition, the literature on entrepreneurship education primarily emphasizes individual processes of analysis and the content that is learned by students, leading us to still not fully understand how students integrate their social experiences and practices into the learning process

(Williams-Middleton et al., 2019; Zózimo et al., 2022). Driven by this, the first author has been conducting a study in Brazil and Canada by using Activity Theory as a methodological and theoretical background to explore how these activities can be combined at university to transform the entrepreneurial learning experience, valuing and taking into account learning aspects related to different social activities by student entrepreneurs. Given that students involved in entrepreneurship can feel insecure when they have to deal with a double journey of activities as student and entrepreneur (Oliveira et al., 2023), this feeling can be accentuated when the articulation of different forms of learning does not occur. For example, the result of one learning activity (entrepreneurial or school learning) may not correspond to the expectation of the learning results of another, or even, the object of each of them may be defined differently by students, teachers or managers. Therefore, students may engage in these activities differently or even give up one or the other, or even both. This context sheds light on the need to expand theories of practice in entrepreneurship studies to gain new insights and knowledge about entrepreneurial learning. The objective of this paper is to present a theoretical-methodological analysis perspective based on Activity Theory to understand the interrelationship between systems of activities. Activity Theory has its roots in the legacy of Lev Vygotsky, Alexander Luria, and Aleksei Leont'ev (Sannino & Engeström, 2018) from the 1930s. It evolved over three generations of research and, recently, the fourth generation began to be developed by researchers from the Helsinki School of Activity. It was introduced into organizational theory more recently and became better known in Anglo-American behavioral sciences in the late 1970s, after the publication of Lev Vygotsky's (1978) *Mind in Society in English* (Miettinen, Samra-Fredericks & Yanow, 2009, also see Holt & Morris 1993; Blackler, 1993; Blackler et al., 2000; Thompson, 2004). Moreover, the precursor scholars of Activity Theory did not have work activities as their primary focus (Engeström & Sannino, 2021), but “as time as it became more widely adopted in Western capitalist countries, research on work activities emerged as one of its primary areas of application” (Engeström & Sannino, 2021, p. 4). We discuss the Activity Theory as a theoretical and methodological approach that allows us to overcome methodological individualism to study learning activities in interaction and present a study that has been conducted by the first author to demonstrate how this approach can help to understand the interrelation between different activity systems in the context of entrepreneurship. We argue that a deep understanding can be achieved by integrating Cultural-Historical Activity Theory into the research agenda on entrepreneurial learning. While Activity Theory has been primarily studied in psychology, education, and organizational studies, we are now interested in exploring its potential in the field of entrepreneurship. Research based on Activity Theory benefits from a set of concepts that are explored at both the theoretical and methodological levels. Researchers can operationalize Activity Theory using different frameworks and units of analysis combined with different data collection techniques to identify systemic implications and intervene in the student entrepreneur's learning space. In addition to contributing to the literature on entrepreneurial learning by addressing the dynamic processes of interaction between human beings, this approach can contribute to the learning experience that students and teachers develop at university.

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555 Trajectories of Disability-Race Intersections: An Interdisciplinary Analysis of Larry P. v. Riles

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Disability race equity

SHORT ABSTRACT

Notions of race and ability have been inextricably tied in the history of American education. We have taken up a paradigmatic case for analysis: Larry P. v. Riles. The class-action case resulted in a ban on the use of IQ testing for the identification of Black students as EMR (educable mentally retarded) and placement into separate classes in California. Relying on oral histories conducted with Darryl Lester (the lead plaintiff), family members, experts, and school officials involved in the legal case, as well as thousands of court and legal team materials, we examined how race and disability were entangled over time. We trace three interdependent trajectories that constituted the Larry P. case across activity systems (schools, court, family life) and ultimately contributed to racial disparities in special education. We document the shifting object of the legal team to litigate the case, eventually focusing on biased artifacts (IQ tests). Furthermore, we describe Darryl's biographical trajectories, including his family and school histories, which were characterized by tensions, battles over opportunities, resilience, and resistance. These parallel trajectories unfolded while classifications of disabilities morphed as professional organizations grappled with the intersections of ability differences with race and other identities. We document the contradictions and entanglements of legal-biographical-institutional trajectories and their consequences. Our analysis disrupts Larry P's established monolithic narrative of a legal victory. Instead, we chronicle the laminated nature of educational justice in which legal/policy victories are not necessarily aligned with advances in educational opportunities for individuals upon whom legal cases are built.

EXTENDED SUMMARY

Background and Aims

This project analyzes a paradigmatic case in the history of disability: *Larry P. v. Riles* [1], in order to make visible how biographical, legal, and institutional forces shape disability diagnoses for racialized youth and their ramifications.

Central to our analysis is the notion of *trajectory* [2]—"the course of any experienced phenomenon as it evolves over time ... and the actions and interactions contributing to its evolution" (pp. 53-54).

Drawing from interdisciplinary perspectives [3], we decenter an individual-institution binary by tracing the mutual tuning of multiple trajectories that shaped Darryl's educational experiences. In doing so, we advance a new frame to understand the co-constitution of disability and race trajectories at multiple scales.

Multiple trajectories unfold simultaneously through the actions and interactions of involved actors and intersect over time, producing contradictions and forging new developments. For instance, the *Larry P.* case unfolded along with Darryl's biographical trajectory and trajectories of disability classifications as professional associations wrestled with enduring questions about disability-race entanglements and intelligence measurement. *Mutual tuning* occurs when trajectories impact other trajectories, thus forming (mis)alignments and/or creating synergies [4]. Analyses focus on how trajectories are managed over time and trace the consequences of mutual tuning.

Methods

We rely on archival analysis and oral history methods [5]. At the center of our research are oral history interviews with the lead plaintiff of the *Larry P.* case, Darryl Lester. Darryl's recounting of his pre-trial educational experiences, the trial itself, and his post-trial life serve as the backbone of our study. We also conducted interviews with family members, legal team members involved in the original litigation, and present-day educators, legal advocates, and disability activists. Interviews were transcribed and systematically coded [6]. We were attuned to the actions of participants and mentions of literacy, disability, learning, race, place, power, and institutions.

Analysis of archival documents included close readings of court filings, legal memos, and witness testimonies, internal reports from the California Department of Education, Darryl's school records and assessments, state and federal special education legislation, and contemporaneous coverage of the trial in local and national news media.

Results

The mutual tuning of trajectories illuminates paradoxes of justice created by (legal and educational) equity remedies and calls for contextualized analyses of racialized conceptions of ability differences. While the *Larry P.* decision has been hailed as a victory for Black children, Darryl's biographical trajectory suggests otherwise. His educational experiences before and after the case were characterized by a lack of necessary support for his reading disability, disciplinary actions when seeking help, and segregation in classes geared toward vocational training. He continued to face the consequences of subpar educational support throughout his adult life, as his unaddressed reading disability manifested in life-long difficulties in employment and personal relationships. Most importantly, the labels placed on him and his experiences with teachers and administration had long-standing impacts on his own self-perception.

Neither are the legal ramifications of the case a clear cut victory. While the case led to a moratorium on the use of IQ tests to diagnose Black children as intellectually disabled (ID), by concentrating on a single mechanism (IQ tests) the decision did not address the larger problem of overdiagnosis of Black students, which continued unabated. The decision also failed to address other disability categories where Black children were/are overrepresented. Furthermore, the decision applied to Black students alone; other racially marginalized students were not protected by its decision.

The narrowing to assessment bias due to *cultural* (i.e., racial) differences in the *Larry P.* trajectory stands in contrast to Darryl's biographical trajectories in which race had alternative (positive and negative) meanings and consequences across time and places. Meanwhile, the diagnostic criteria for ID were undergoing refinements that did not consistently align with Darryl's biographical trajectory—e.g., Darryl's intelligence assessments over time reflected fluctuating patterns that moved him *in* and *out* of the “normal” range, thus, raising questions about misidentification. Moreover, Darryl did *not* have limitations in adaptive behaviors, used his agency and self-advocacy, and functioned well

outside of school. We unpack and critique these premises and their consequences, drawing from interdisciplinary perspectives to illuminate the cultural work of disability intersections.

Conclusion

Our analysis suggests the need to consider the lived experiences of Black children and families whose lives cannot be made whole simply by a court decision. We discuss the affordances of a multi-focal paradigm that accounts for various trajectories structuring the object of justice struggles. In this model, alignments and contradictions among legal and institutional trajectories mediate (sometimes in unexpected ways) biographical trajectories. Transcending macro-micro linear explanations, our analysis offers a multi-scalar representation of justice regarding disability-race intersections in cultural-historical contexts.

Planned interactions with participants

We will outline our findings and then engage participants in a dialogue about the construction of intersectional identities on legal, institutional, and biographical scales.

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557 Children's minds in society: what is the social situation of developments of today's children?

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Presentation: Symposium (90 minutes)

Theme: Bringing together theory and practice

Keywords: social situation of development early childhood societal expectations

SHORT ABSTRACT

This symposium will be chaired by Deborah Leong and will focus on the applications of the Vygotskian concept of the social situation of development to the lives of today's young children. Paper 1 will discuss the changes in the societal expectations of young children and the related changes in these children's social situation of development as indicated by the changes in the quality of their make-believe play. Paper 2 will employ the social situation of development lens to examine the apparent disconnect between early childhood educators' perceived parental expectations and what parents actually expect of an early childhood program. Paper 3 will use the results of a longitudinal study to discuss childhood trauma as a component of the social situation of development. The symposium will conclude with a discussion of the concept of 'social situation of development' and the use of this concept in analyzing changes in the lives of today's children. The attendees will be encouraged to participate in the discussion and to share their observations of the changes in children's social situation of development.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

TO PLAY OR NOT TO PLAY: "SCHOOLIFICATION" OF EARLY CHILDHOOD EDUCATION AND CARE AS THE NEW SOCIAL SITUATION OF DEVELOPMENT.

Vygotsky's and Elkonin's views of play as a cultural-historical phenomenon call for a detailed analysis of the changes in today's preschoolers' social situation of development and the effects of these changes on their make-believe play. One of the factors responsible for the decline in quantity and quality of make-believe play is the decrease in adult mediation of play.

The proposed presentation will provide an overview of the changes in children's play in early childhood settings based on literature analysis and the results of using two new play assessment instruments, the Mature Play Observation Tool (Germeroth et al., 2019) and PRoPELS (Leong & Bodrova, 2012), by researchers in several countries.

Both assessment instruments were designed to assess the quality of play using its main components identified by Elkonin (1978). Unlike many existing play assessments, these instruments also assess teacher scaffolding of play either directly (MPOT) or indirectly (PRoPELS).

In several separate studies using these instruments, it was established that the play of today's 4- and 5-year-olds does not yet possess the features of developed (or mature) play described by Elkonin. The presenter will then focus on specific strategies designed to support play used by classroom teachers in *Tools of the Mind* classrooms and discuss the impact of play scaffolding on children's development and their teachers' well-being.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

TO PLAY OR NOT TO PLAY: "SCHOOLIFICATION" OF EARLY CHILDHOOD EDUCATION AND CARE AS THE NEW SOCIAL SITUATION OF DEVELOPMENT.

Vygotsky's and Elkonin's views of play as a cultural-historical phenomenon call for a detailed analysis of the changes in today's preschoolers' social situation of development and the effects of these changes on their make-believe play. This analysis, performed from various theoretical perspectives (e.g., Chudacoff, 2007; Digenarro, 2021; Gray, 2011, 2023; Jones, 2021), provides us with valuable insights into the factors responsible for the decline in quantity and quality of make-believe play in today's preschoolers and kindergartners. These factors include but are not limited to an increase in adult-directed forms of children's learning and recreation, the proliferation of toys and games that limit children's imagination, and safety limits set by parents and teachers on where and how children are allowed to play. The most important factor, however, is the decrease in adult mediation of make-believe play (Karpov, 2005), affecting not one but all of its components.

Thus, it can be said that today's social situation almost guarantees that children may not develop mature play unless adult mediation is restored. The idea that we need to teach young children how to play is not new; however, it has been primarily discussed in the context of special education. While children with language delays or emotional disorders were thought to benefit from play interventions, typically developing children were expected to develop play skills on their own. This approach, while valid in the past, can no longer be adopted if we want all young children to develop mature play.

The changes in the social context of young children's development do not mean that make-believe play is destined to disappear for good. These changes also create new opportunities, such as the availability of high quality preschool programs for scaffolding make-believe play, although the strategies for play scaffolding need to be designed to fit the new social context.

For many children enrolled in center-based early childhood programs, their classroom may become the only place where they can learn how to play. However, it is important to note that learning how to play in the classroom will not look the same as learning to play within the informal neighborhood peer groups of yesterday. First, in the past, play mostly occurred in multi-aged groups where children had an opportunity to learn from older "play experts," practice their play skills with peers of the same age and then pass their knowledge on to other "play novices." In today's classrooms, children are almost always segregated by age and must interact with play partners who are as inexperienced as they are. As a result, many of the play skills that children were able to learn in the past by observing and imitating their older playmates now have to be modelled and taught directly by the teachers. In addition, unlike the unstructured play of the past that often lasted for hours and days, play time in today's early childhood classroom is limited and rarely exceeds one or two hours. This means that to achieve rapid progress in the quality of play, play scaffolding in the classroom needs to be designed to target its most critical components strategically.

The proposed presentation will provide an overview of the changes in children's play in early childhood settings based on literature analysis and the results of using two new play assessment instruments, the Mature Play Observation Tool (Germeroth et al., 2019) and PRoPELS (Leong & Bodrova, 2012), by researchers in several countries.

Both assessment instruments were designed to assess the quality of play using its main components identified by Elkonin (1978). Unlike many existing play assessments, these instruments also assess teacher scaffolding of play either directly (MPOT) or indirectly (PRoPELS).

In several separate studies using these instruments, it was established that the play of today's 4- and 5-year-olds does not yet possess the features of developed (or mature) play described by Elkonin. The presenter will then focus on specific strategies designed to support play used by classroom teachers in *Tools of the Mind* classrooms and discuss the impact of play scaffolding on children's development and their teachers' well-being.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

EARLY CHILDHOOD EDUCATION: WHAT PARENTS SAY AND WHAT TEACHERS HEAR.

Large disparities exist between Russian early childhood educators' commitment to promoting play and the classroom practices they implement. These educators often use parents' expectations to justify their focus on academic activities at the expense of play.

The aim of the study was to determine what the real priorities of today's parents in the field of preschool education were.

Methods and sample. The respondents were given a list of ECEC objectives, such as "getting my child ready for school" and "ensuring my child's safety," and were asked to rank these objectives in order of importance. The study was repeated every year from 2011 through 2019 in three regions of the Russian Federation. The sample was structured to account for the socio-economic situation of the region, as well as such factors as "center-periphery," "urban-rural," and "the type of early childhood institution." The number of respondents varied from 1,000 to 1,200 each year.

The study's results revealed that parents' highest priority regarding their children's early childhood education was to have a program that "creates an environment where my child feels psychologically comfortable." Contrary to our expectations, "getting my child ready for school" did not rank at the top of the list.

The presenter will discuss the study results and what they tell us about today's children's social situation of development.

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

EARLY CHILDHOOD EDUCATION: WHAT PARENTS SAY AND WHAT TEACHERS HEAR.

According to the cultural-historical approach to child development, the most beneficial conditions for child development are created when adults engage children in age-specific activities determined by their culture. Consistent with the Vygotskian views of child development, the social situation of the development of preschool-aged children involves their engagement in pretend play with the adults – both parents and teachers – creating opportunities for this engagement. However, large disparities exist between the commitment to promoting play expressed by Russian early childhood educators and the classroom practices they implement. These educators often use parents' expectations to justify their focus on academic activities at the expense of play. In this situation, we are faced with

two questions: first, whether the parents' demand for turning preschools into "academic bootcamps" truly exists, and secondly, even if it exists, to what extent it is based on the family's actual priorities. The aim of the study was to determine what the real priorities of today's parents in the field of preschool education were.

Methods and sample. With the help of experts, we have identified a list of the main objectives of preschool education, common to most early childhood education systems around the world and typically highly valued by parents. Among the objectives were: "getting my child ready for school," "ensuring my child's safety," "creating an environment where my child feels psychologically comfortable," and "providing my child with an opportunity for play."

The respondents were asked to rank these objectives in order of importance. This allowed us not only to identify the top priorities and the «outliers» on this list but also to get a complete picture of what families expect of their children's early childhood programs. We were able to track changes in parents' priorities, as the study was repeated every year from 2011 through 2019. The study sample consisted of parents whose children attended early childhood centers in three regions of the Russian Federation. The sample was structured to account for the socio-economic situation of the region, as well as such factors as "center-periphery," "urban-rural," and "the type of early childhood institution." The number of respondents varied from 1,000 to 1,200 each year.

The results of the study revealed that parents' highest priority regarding their children's early childhood education was to have a program that "creates an environment where my child feels psychologically comfortable." This choice consistently ranked first during the entire period of repeated surveys. Contrary to our expectations, "getting my child ready for school" did not rank at the top of the list. Moreover, over the past 8-10 years, the value of school preparation has fallen - from the second or third to the fourth or fifth place in the ranking, depending on the region. At the same time, throughout the entire duration of the study, parents ranked "an opportunity to play" as the least important, which seems inconsistent with the high value they placed on their children's psychological comfort. Other parents' priorities showed greater variability both across different regions and over time.

The presenter will discuss the results of the study and what they tell us about today's children's social situation of development.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

CHILDHOOD TRAUMA AS A PART OF THE SOCIAL SITUATION OF DEVELOPMENT: 10 YEARS AFTER A TERRORIST ATTACK

In 2004, in the city of Beslan, Russian Federation, terrorists took over a school of more than 1,000 people, most of them children. The siege ended with the military storming the school. As a result, 334 people, including 186 children, were killed, and more than 630 were injured. The presentation will discuss some of the results of a 10-year longitudinal study involving children who attended kindergarten and primary grades at the time of the attack.

The aim of the study was to determine the nature of children's fears and how these fears changed over time. The sample consisted of 210 children. Of these children, 115 were hostages, and 95 were witnesses.

The methods used in the study included projective drawing tests (e.g., "Draw a human," "Draw a family," etc.) as well as the tests specifically designed for this study (e.g., "Draw yourself going to

school”). Children’s drawings were collected annually. Additional instruments used included parent and teacher surveys that were also administered annually.

The results demonstrated differences in the nature of fears and in the dynamics of fears over time in the two groups: children-hostages and children-witnesses.

The psychological consequences of the trauma for children will be discussed in the context of the specific social situation of development experienced by these children during and after the terrorist attack.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

CHILDHOOD TRAUMA AS A PART OF THE SOCIAL SITUATION OF DEVELOPMENT: 10 YEARS AFTER A TERRORIST ATTACK

In 2004, in the city of Beslan, Russian Federation, terrorists took over a school of more than 1,000 people, most of them children. The hostages were kept in crowded quarters, without food or water, and in constant fear for their lives. The population of the city was standing in horror around the school. The siege ended with the military storming the school. As a result, 334 people, including 186 children, were killed, and more than 630 were injured. The presenter was part of a team providing emergency psychological aid to the victims of the terrorist attack and conducted a 10-year longitudinal study of the impact this trauma had on the lives of these children. The presentation will discuss some of the results of this longitudinal study involving children who attended kindergarten and primary grades at the time of the attack.

The aim of the study was to determine the nature of children’s fears and how these fears changed over time. The sample consisted of 210 children. Of these children, 115 were hostages, and 95 were witnesses.

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The results demonstrated differences in the nature of fears and in the dynamics of fears over time in the two groups: children-hostages and children-witnesses. The fears of these two groups fell into two categories: “fear of a threat” and “fear of the consequences.”

The psychological consequences of the trauma for children were largely determined by the characteristics of the new social situation of development that developed after the terrorist attack. The uniqueness of this social situation was partially due to the fact that not only the children themselves, but the entire community was traumatized. Thus, children were affected by trauma in two ways: directly and indirectly via their interactions with the community members. The presenter will describe some of the specific ethno-cultural features of the Beslan community and how these features shaped the post-traumatic experiences of children and adults. These features comprised certain traditions and rituals as well as culturally expected ways of expressing emotions, including tacit and heroic suffering endurance in overcoming negative experiences.

The presenter will elaborate on the implications of the results of the study for our understanding of the complex nature of childhood trauma that changes a child’s social situation of development.

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558 Critical-collaborative methodologies: three different, yet comparable paths

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Presentation: Symposium (90 minutes)

Theme: Creative ways to do research

Keywords: Cultural-Historical Theory Critical-Collaborative Co-Research

SHORT ABSTRACT

This ISCAR theme ‘Inclusiveness as a future challenge’ focuses on new perspectives to develop research that allow participants to be involved in collaborative critical ways to be and act in the world in order to interpret and transform world injustice. In this direction, this symposium aims at deepening and moving the discussion on three different, yet similar, collaborative methodologies forward. First of all, it is worth clarifying that the three are employed both for research and professional educational purposes; all three are based on Historical-Dialectical Materialism and on Vygotskian studies, see the need for mediational tools that may enable critical practices to take place and are developed by means of a critical view on data analyses – understanding critical as necessarily founded on the notion of praxis and the centrality of language – as well as by critical reflection ways of acting in the methodology. The focus of the symposium is on the methodology that may be employed by master’s and doctorate candidates, and therefore, needs to be delved into by means of continuous education on the part of senior and junior researchers. This communication will discuss how collaborative critical research conducted in a cultural-historical interventionist perspective can be implemented, can describe, and analyze collaborative research for social transformation, discussing the main concepts and practices supporting the approach.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

This Conference’s theme, ‘Inclusiveness as a future challenge’, as well as the subtheme selected for this symposium ‘Creative ways to do research’ point to the need for the development of investigations that interpret and transform the world (Sousa Santos, 2018), by challenging the colonialist and necropolitical (Mbembe (2003/2018) bases on which practices have often and traditionally been built, many of which are still in service, resulting in the maintenance people (and communities) that are silenced by means of inequality and lack of justice. This is especially the case of educational contexts, that are the focus of this paper and symposium. More specifically, this paper aims at discussing the Critical Collaborative Research (Magalhães, 2011), an intervention formative method of research, as well as a political theoretical-methodological approach inserted in a

critical research paradigm and thought (Freire,1970) with the purpose of overcoming oppression by involving the collective - every participant and interested party in the discussion and development of the investigation/transformation project itself. The discussion centres on clarifying the methodological rationale for approaching language as activity and as means for social transformation on the dialogical approaches of Vygotsky and Freire. In this direction, the focus of this paper is on the methodology that may be employed by master's and doctorate students and on the part of senior and junior researchers. This communication will discuss how collaborative critical research conducted in a cultural-historical interventionist perspective can be implemented, describing and analyzing for the collective social transformation.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

This Conference's theme, 'Inclusiveness as a future challenge', as well as the subtheme selected for this symposium 'Creative ways to do research' point to the need for the development of investigations that interpret and transform the world (Sousa Santos, 2018) by challenging colonialist and necropolitical (Mbembe (2003/2018) bases. It is important to say that, in the context where the investigations that will be reported take place, educational practices have often and traditionally been shaped within a colonialist view, and many such practices are still in service, resulting in the maintenance of people (and communities) that are silenced by means of inequality and lack of justice. In broader terms, this communication is organized to discuss Critical Collaborative Research as a theoretical-methodological professional educational intervention research, as well as a political approach inserted in a critical research paradigm (Freire,1970). The purpose of the methodology discussed is overcoming oppression and vertical relationships within organizations by involving the school collectivity (teachers, coordinators, students and parents, when possible) as well as researchers in critical collaborative discussions. As professors in Brazilian Applied Linguistics Post-Graduation Programs, Magalhães and Fidalgo have been researching the role of language as a possibility to promote the development of critical communities in schools, i.e., collectivities that discuss the practical- theoretical issues that arise from interactions, power relations, division of labour, among others. This paper discusses the central role of what we define as collaborative language in creating contexts for critical learning, and social transformation of what the communities deem as unacceptable colonized conditions that can be seen in many educational settings (Freire, 1970, 1992, 1996, Fidalgo e Magalhães 2023, in print; Magalhães et al, 2022). This process of mutual and collective questioning and discovery, previously discussed by Freire, may push the participants towards collaborative constructions of new ways to be and act in the world. As an actual dialectical process of organizing dialogues, this methodology allows all participants in a project to engage and transform themselves and their surroundings, which in turn, contributes to breaking down the vertical patterns of power in social relations, since all participants become critical co-investigators, each one involved in dialogues with others throughout the development of the investigation. Therefore, as discussed by Jones and Magalhães (2020), research participants become jointly responsible for a process in which everyone grows and in which arguments based on "authority" are no longer valid. Thus, the concept of critical collaboration requires the use of critical questions, but not to criticize others, yet to understand each other's positions. By doing so, the critical collaborative approach may create contexts in which participants act collaboratively, based on a dialogical theory of action, which in turn is based on practical-theoretical activities that are

organized with the intentional objective of transforming the social environment, its culture and prospective development. However, to engage in understanding and transforming the world collectively one requires actions to be focused on contradictions and conflicts between the ideas and points of view and the organization of argumentative speeches. It is also worth mentioning that this approach organizes research in diverse educational contexts by the Research Group Language in Activities in Educational Contexts – LACE - (led by Liberali and Magalhães) always focusing on analyzing participants' (including the researchers') actions, choice of activities and possibilities for active critical participation, besides the possibilities of social transformation that may be created. The research projects are organized to enable continuous analysis and reorganization. Despite the diversity of research contexts, all participants are fully equal partners in the dialogic social process, jointly pushing the horizon of the known into the uncharted waters of 'untested feasibility' (Freire, 1970). It is important to say that each participant has the same possibility to present their ideas, to be heard and have their ideas critically discussed, though we fully understand that social hierarchical division of labor still places researchers at a different level from that of the schoolteacher – something we strongly object to being part of – as shown in the investigations conducted. To conclude it is central, therefore, to say that maintaining the focus on dialogic actions that cannot be limited to the (re)production of what any of the partners already know, or can do, but promote a genuine becoming is not easy, especially at the beginning of a new investigation relationship. However, the results reveal a growing transformation of all participants' actions (practical and theoretical) in terms of their ways to act and think towards listening the other, discussing theoretical and practical texts read, as well as the argumentative questions asked to colleagues/teachers/professors/ researchers and other participants, and the proposal of activities that involve decolonial argumentative language organization, in other words new transformative ways to understand and act in society (Freire).

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Our objective with this presentation is to discuss some elements considered essential for carrying out investigations that has the historical and dialectical materialism as a method, the socio-historical psychology as a theoretical basis, and the social and ethical commitment to transformations towards human emancipation. Among the several fundamental assumptions of such perspectives, we highlight some of them: the use of theoretical-methodological categories, the need for critical and collaborative actions, and the implementation of an analytical process that goes beyond appearances. Based on Mészáros (2010) , we affirm that historical and dialectical materialism emerges as a critical methodological proposal par excellence, as it has the intention of unveiling the intricacies and contradictions of the capitalist mode of production. And so, criticism should be elevated to a methodological principle and, therefore, be understood as a category, at least as long as this is the way to produce wealth. In addition, we discuss historicity, mediation, contradiction, totality, and sense and meaning, as socio-historical psychology categories. Considering this discussion, we created the conditions to present the education trans-formation research, as praxis, as a way of producing critical, collaborative, and emancipatory knowledge, that goes beyond the appearance of facts, that understands, based on the analytical procedure of the Meaning Nuclei, reality in its historical and contradictory movement in a democratic and collaborative way, guaranteeing the production and

participation of all those involved, generating critical-emancipatory movements, which form us towards new possibilities of a more just and egalitarian reality, seeking the “ viable unheard”!(Freire).

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Our objective with this presentation is to discuss some elements considered essential for carrying out investigations that has the historical and dialectical materialism as a method, the socio-historical psychology as a theoretical basis, and the social, ethical, and political commitment aiming at transformations towards human emancipation. Among the several fundamental assumptions both of the theoretical and methodological framework, besides our ethical stance as researchers, we highlight: the use of theoretical-methodological categories, the need for critical and collaborative actions through didactic-pedagogical strategies that provoke the emergence of contradictions, and the implementation of an analytical process that goes beyond appearances. Based on Mészáros (2010), we affirm that the historical and dialectical materialism emerges as a critical methodological proposal par excellence, because it has the objectives of unveiling, criticizing, and overcoming the propositions and contradictions of the capitalist mode of production. Still according to the author, criticism should be elevated to a methodological principle and, therefore, be understood as a category, at least as long as capitalism and its consequences, in the forms of exclusion, social inequality, and oppression, are the mode of social production and reproduction of the hegemonic status quo. With these statements, we highlight the impossibility of research neutrality and the urgency of militant actions for social transformation, without denying the necessary rigor, and it is up to the method. In addition to this category, we discuss historicity, mediation, contradiction, and totality, as well as the categories sense, meaning, and signification, from socio-historical psychology. It is important to highlight that the category signification is understood as the dialectical synthesis of senses and meanings, as a unity of opposites, configuring as a unit of analysis in the analytical movement of subjectivation-objectification carried out by subjects, as producers and products of their social history. The use of categories, defined by Marx (2011, p. 59), free translation) as “ways of being, determinations of existence”, as an ideal construction that carries the movement of the studied phenomenon, its materiality (Aguar 2019), seeking deeper insights beyond appearances, makes it possible to overcome the naturalization of phenomena, of economic, mechanistic, and linear determinism, directing us towards the apprehension of constitutive determinations. Considering these points, we have created the conditions to present the education trans-formation research, as praxis, as a way of producing critical and collaborative knowledge. This proposal is close to modalities such as action research, training research, collaborative research, among others that presuppose the active participation of those involved in the process of knowledge production and movements of emancipatory transformation. According to Magalhães, this type of research does not seek pragmatic solutions, definitive answers, or recipes, but ways of overcoming this real status quo—often fossilized—by betting, believing and acting in the practice of transforming reality. To be coherent with the assumptions presented, we briefly explain the analytical procedure adopted, which is organized with the aim of going beyond the appearance of facts, apprehending reality in its historical and contradictory movement and, as Rey teaches us, carrying out a constructive and interpretative movement with the objective of not only describing reality, but explaining it. To conclude our presentation and illustrate all the above, it is opportune

to present some examples of how we carried out the analysis, as well as some results of a survey performed in four Brazilian regions, on the impact of the COVID-19 pandemic on basic education schools in peripheral regions. We reiterate our goals of researching and transforming reality, generating emancipatory movements, which are oriented towards a new, fairer, and egalitarian reality, seeking the “viable unheard” (Paulo Freire).

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Activity clinics is a French research tradition which aims both to construct scientific knowledge and to support social change. It has been developed over the last 30 years by Yves Clot and his team, at Cnam in Paris, as an interventionist approach, strongly influenced by the work of Vygotsky as well as the French-speaking tradition of work analysis in the field of ergonomics and industrial psychology. In the field of Activity Clinics, cross self-confrontations are a video-based methodology, in which selected sequences of activity are being video-recorded and co-analyzed with professionals in a collaborative research group. Therefore, cross self-confrontations offer a practical methodology for co-research.

In this paper, we will first discuss co-research as a paradigm shift in research practice, radically changing both the scientific and the professional practices (as well as their relations). It raises important questions, for example: Who conducts the research? What for? How? With which benefits?

We will then discuss these questions in two case studies, where cross-self confrontations have been used within a hospital context. We will compare and critically discuss the implementation of the methodology, esp. regarding co-research, in two different research projects, one on training in robotic surgery, the other one on communication in the context of therapeutic education of diabetic patients.

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Activity clinics (Clot, 1999; Clot et al., 2001; Clot, 2020) is a French research tradition which aims both to construct scientific knowledge and to support social change. It has been developed over the last 30 years by Yves Clot and his team, at Cnam in Paris, as an interventionist approach, strongly influenced by the work of Vygotsky as well as the French-speaking tradition of work analysis in the field of ergonomics and industrial psychology. In the field of Activity Clinics, cross self-confrontations (Clot et al., 2000) are a video-based methodology, in which selected sequences of activity are being video-recorded and co-analyzed with professionals in a collaborative research group. Therefore, cross self-confrontations offer a practical methodology for co-research.

Doing co-research: the idea stems from obvious ethical and methodological concerns regarding any research with some social transformation objectives. The people whose activity is being studied with a view to social change should obviously be participants in the research - not only as information providers, but also as co-designers, co-analysts and co-authors of the research. However, co-research requires a paradigm shift in research practice (Kloetzer, 2019), radically changing both the scientific and the professional practices (as well as their relations, see for example Hean et al., 2021). It raises important questions, for example: Who conducts the research? What for? How? With which benefits?

The first part of the paper will highlight key concepts and practices from Activity Clinics (including the concepts of activity, development, power to act and professional genre), then it will discuss the paradigm shift regarding co-research, intervention and transformation.

In the second part of the paper, we will discuss these questions with the help of two case studies, where cross-self confrontations have been used within the context of a Swiss university hospital. We will compare and critically discuss the implementation of the methodology, esp. regarding co-research, in these two different research projects. One was focussed on professional and interprofessional learning and training in robotic surgery (Cristofari et al., 2021), whereas the other one deals with communication in the context of therapeutic education of diabetic patients (dos Santos Mamed, 2020).

The paper will show how diverse professionals from different professions (doctors and nurses to begin with) have been involved into the research; how they participated in the different steps of the research process, and which were these critical steps; which aspects of the research findings they considered to be most important; and how they could use, or not, the outcomes of the research project for concrete social transformations. We will end with some conclusions on the use of cross self-confrontations in such a lively and complex professional context.

560 Living on the edge: Learning, precariousness, and hope in the Anthropocene

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Presentation: Symposium (90 minutes)

Theme: Dealing with climate change

Keywords: Precariousness climate crisis social change

SHORT ABSTRACT

“The sense of vertigo, almost of panic, that traverses all contemporary politics arises owing to the fact that the ground is giving way beneath everyone’s feet at once, as if we all felt attacked everywhere in our habits and in our possessions” (Latour, 2018, p.10).

Socio-political and environmental global crises pose an existential threat to the (modernizing) project of achieving a more socially just world for all, bringing instead a precarization of lives. The project of a more socially just world, however, has never been for all (Quijano, 1992). The precarization that the crises are spreading—in terms of access to land, food, clean water, social welfare, and, in sum, a liveable environment—has been imposed for centuries to many, as inequality and precarity are inherent to the dominant global capitalist system (Fraser, 2022). In this context, where all but the 1% are living on the edge of precarity, educating for a more sustainable world cannot be disentangled from a commitment and alliance with those who already are deprived of land and suffering a system that feeds on oppression and dispossession (Butler & Athanasiou, 2013). In this symposium, we bring together research-practice partnerships addressing inequality and precarity through transformative education. With a focus on sustainability challenges, empirical cases are presented from Catalonia, Finland, and the US. Together, the presentations explore ways in which we can learn with and from those fighting in and against precarious living conditions and contribute to envisioning alternative, more socially just futures in a context of climate crisis.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

A bio-cartography of environmental relations in a context of exclusion: Cutting through nature-culture divides in sustainability education

In this paper, we examine the intersection between precarity (of teachers working on precarious conditions, of students living on the edge of poverty) and environmental education, where the significance of "sustainability" is often removed from the question of the right to dignified and healthy lives. Working in and from precarity is not only a means to denounce this disconnection but also a way to find the core of the struggle and the key to addressing the sustainability problem. We draw from a participatory ethnography at an upper secondary school in a municipality in Catalonia (Spain) in high risk of child poverty and social exclusion. We implemented a co-design process involving educational researchers, members from a local civic organization ("ateneo popular"), and school teachers to develop an inquiry-based project on local sustainability challenges. We document design meetings as well as school and out-of-school activities with the students during a whole school year, as they work in mapping local challenges in their community. The resulting bio-cartographies become an opportunity for making experiences of precarious lives visible within a broader frame for recognizing which and how lives matter. They also generate opportunities for positioning learners as historical actors, connecting their neighborhood and everyday lives with sustainability challenges more meaningfully.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

In discourses on sustainability in science, in the media, and in education, there tends to be a divide between culture and nature, making it difficult to thematize and address otherwise well-recognized interconnections between political and socio-economic issues of power and justice, on the one hand, and environmental issues such as pollution, greenhouse emissions, and biodiversity loss, on the other (Latour, 2017). Despite growing awareness of *climate justice* as an opportunity to integrate the two realms, the "diverse and productive ecosystems and human well-being are too often considered opposing targets" (Caillon et al., 2017, p. 27). By disconnecting the sustainability crisis from the socio-political contexts that condition citizens' everyday access to a dignified life, education about the sustainability is not capable of mobilizing the collective political awareness or consciousness necessary for making a much-needed transition to net-zero societies (Svarstad et al., 2023). The division between nature and culture lies at the heart of the academic disciplines taking different roles in sustainability education, where analyses of the causes of the climate crisis tend to be assigned to the natural sciences but rarely to the social sciences—hence "naturalizing" the problem and black-boxing the historical and sociopolitical explanations otherwise available in the social sciences (Hultberg, 2024). This has consequences for the opportunities students' get to learn about and enact their political agency as *historical actors* in the production of possible futures (Freire, 1970; Gutierrez et al., 2020). Analyses of upper secondary students' narratives on change show that technological and behavioral dimensions, such as consumption patterns or renewable energies, are often in focus, with little attention being paid to social justice and political dimensions (Røkenes & Jornet, in press). Without discourses or models integrating the economical and political dimensions into pathways that would enable them becoming meaningful agents of change in society, students' visions of their possible futures remain limited and tend to reproduce a system that oppresses a

growing majority that is subjected to increasingly precarious life conditions, while it enriches a privileged minority.

In this paper, we examine the intersection between precarity (of teachers working on precarious conditions, of students living on the edge of poverty) and environmental education, where the significance of "sustainability" is often removed from the question of the right to dignified and healthy lives. Working in and from precarity is not only a means to denounce this disconnection but also a way to find the core of the struggle and the key to addressing the sustainability problem. In fact, precariousness is not an exception but a condition inherent to human and non-human beings as vulnerable bodies, and "a social condition from which certain clear political demands and principles emerge" (Butler, 2009, p. xxv). Precarity emerges here as a category of order, a "new form of regulation that distinguishes this historical time" (Butler, in Lorey, 2015, p. vii) and which becomes "an instrument of governing and, at the same time, a basis for capitalist accumulation" (Lorey, 2015, p. 1). According to the author, it also becomes a source and possibility for change and transformation. We draw from a participatory ethnography at an upper secondary school in a municipality in Catalonia (Spain) in high risk of child poverty and social exclusion. We implemented a co-design process involving educational researchers, members from a local civic organization ("ateneo popular"), and school teachers to develop an inquiry-based project on local sustainability challenges. We document design meetings as well as school and out-of-school activities with the students during a whole school year (from September 2023 to June 2024). We focus on the way the students, researchers, and educators together map and redraw bio-cartographies of everyday life (Grinberg, 2020) as they explore their community and its challenges of water- and waste-management. These become a living map that makes visible the precarious lives associated with geopolitical and historical locations (Braidotti, 2002).

Through our analyses, we document how nature-culture dichotomies that dominate initial dialogues and perspectives on sustainability explode when students' and teachers explore their local contexts and lead to insights on the complex ways in which issues of racism and exclusion intersect with sustainability. Thus, the resulting bio-cartographies the students enact become an opportunity for making experiences of precarious lives visible within a broader frame for recognizing which and how lives matter. They also make possible opportunities for education to position learners as historical actors, connecting their neighborhood and everyday lives with sustainability challenges more meaningfully. The study emphasizes the importance of thinking about relationships with the environment in no linear or dichotomous ways. We also show how, in the process of repositioning actors within the logics of oppression and dispossession that characterize the students' livelihoods, visions for collective community practices involving the students and others emerge towards caring relationships and social change.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Indigenous kin-making for sustainability, justice, and joy

There is a growing interest in collective knowledge-production in education. There are several methodologies emerging to facilitate local community members' participation in design activities. The present longitudinal formative intervention, Indigenous Learning Lab, focused on the sustainability of inclusive knowledge-production and decision-making activities in education. We will present how indigenous students, family members, elders, educators, and tribal government representatives along

with non-indigenous school leaders and educators have designed and implemented a culturally sustained behavioral support system to address overrepresentation of indigenous students in school discipline at a rural high school in the U.S. Indigenous Learning Lab facilitated local stakeholders' situated, intersectional understanding of how race, critical historicity of White settler colonialism, and cultural genocide (re)produce and perpetuate racialized outcome disparities, which is vital to the design and implementation of a culturally sustained school-wide behavioral support system. More specifically, in this chapter we will address the following questions: (1) How to unite and sustain inclusive decision-making teams of people with diverse and often opposing histories, practices, and goals for systemic transformation? (2) How to sustain an inclusive knowledge-production and systemic design activity of local stakeholders for systemic transformation? (3) What are the innovations implemented and sustained at the school?

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

Background

The U.S. was founded on settler colonialism, slavery, and capitalism. In the U.S. schools, Native American youth receive exclusionary disciplinary actions more frequently and severely (Bal, Betters-Bubon, & Fish, 2019; Losen and Orfield, 2014). Disproportionality in school discipline is a result of historically accumulated contradictions arising from racist, settler colonial society such as deep and widening disparities in health, justice, housing, and wealth. Disproportionality generates a double bind for education leaders, teachers, and families that is “a societally essential dilemma which cannot be resolved through separate individual actions alone—but in which joint, co-operative actions can push a historically new form of activity into emergence” (Engeström, 1987, p. 165). To address the hyper-punishment of indigenous youth, we conducted ILL, a four-year long formative intervention, at Northwoods High School in Wisconsin in a partnership with a band of Anishinaabe Nation, Wisconsin Department of Public Instruction, and Wisconsin Indian Education Agency.

Indigenous Learning Lab (ILL) is grounded in Cultural-Historical Activity Theory (Engeström, 2016) and Decolonizing Epistemologies (Smith, 2021). It builds upon “refusal” of metanarrative in social science research and leverages “resistance, reclaiming, recovery, reciprocity, repatriation, [and] regeneration” (Tuck & Yang, 2014, p. 244). Indigenous sovereignty and futurity are guided ILL: Indigenous sovereignty is the ability of Indigenous peoples and nations to unimpededly use Indigenous knowledge, languages, and ways of being to guide and shape kin-making - how the Indigenous nations and people wish to be in this interconnected world.

Aims

There were two aims of ILL: a. decolonizing school's decision-making activities by maintaining sustained participation of indigenous students, community, and the tribal government; b. transforming schools' behavioral support systems to be culturally sustaining positive, and supportive.

Methods

The school is in a city that was the epicenter of the Anti-Indian movement in 1980s and 1990s. Though indigenous students represented one-fifth of the 710-student population, they accounted for 64.3% of in-school-suspensions and 62.8% of out-of-school suspensions. ILL included 21 participants including 6 indigenous youth. ILL took place between 2019 and 2023. It has four phases: Design (10 ILL meetings), installation (12 ILL meetings), implementation (11, and sustainability. During the design phase, the school moved to Online due to COVID. The next two phases, ILL members adopted their

new system to address the COVID-related challenges. ILL focused on the sustainability of the newly implemented behavioral support system.

Results

The new system included programmatic innovations: Voyager Program (a place-based curriculum), Anishinaabe Youth Center tutoring, We Care (schoolwide positive behavioral expectations), coordinating school calendar with Anishinaabe cultural activities, professional learning opportunities for decolonizing, culturally sustaining pedagogies, Thunderbird 20 (daily social-emotional support), new “Indian education” mentors, and distributed leadership team.

ILL functioned as a structured kin-making activity at Northwoods High School. Kin-making in colonial education systems requires “taking the risk of becoming-with new kinds of person-making, generative and experimental categories of kindred, other sorts of we’, other sorts of selves’, and unexpected kinds of sympoietic, symphonic human and nonhuman critters (Harraway, 2018, p.102). The Anishinaabe kin-making can be seen in their steadfast commitments to protect culturally important beings that have sustained them since time immemorial. In the Great Lakes, the Anishinaabe and others live their interconnected values of Nibwaakaawin (Wisdom), Zaagi’idiwin (Love), Minaadendamowin (Respect), Aakode’ewin (Bravery), Gwayakwaadiziwin (Honesty), Dabaadendiziwin (Humility), and Debwewin (Truth). Manoomin (wild rice) is a central reason for why the Anishinaabe are in the Great Lakes with their creation stories directing them to live where the food grows on the water. For example, during the discussions related to classroom practices and curricula such as science, Indigenous participants and Indigenous research team members explained that Anishinaabe people have a kinship relationship with the land (lake, deer, walleyes). Land is their first teachers. The mapping out and modeling actions made visible that 20 % of students at Northwoods think of land as kinship and 80% of the students think of land as a place. Therefore, place-based learning was offered in Voyager Program as a culturally responsive science curriculum based on the White-settler epistemologies.

Conclusion

Indigenous youth cannot survive and thrive in an oppressive institutional culture that persists and reinforces racism, white supremacy, and racialized experiences. Instead, addressing racial disparities in behavioral and academic outcomes requires developing systemic, adaptive, and persistent solutions with historically marginalized communities and practitioners and building justice-oriented, strategic coalitions among multiple communities and activity systems that envisions systemic transformation. To this end, there is a need for creating a kin-making space in which local stakeholders collaboratively engage in future making with a praxis for critical dialogue on racism and settler colonialism to dismantle the existing punishing, disabling, and marginalizing education systems and simultaneously re-imagine schools as sites of critical dialogue, justice, and joy.

We will invite participants to share their experiences and ideas about building decolonizing and sustainable education.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

Formation of student agency in an Upper Secondary School climate action project

Education can arguably play a role in humanity’s learning out of unsustainable, fossil-fuel-dependent human activities, which have already made irreversible changes on the planet’s climate and environment. Young people have been forerunners in raising awareness of the climate crisis that

threatens their futures, as well as those of other people and species. However, how can education support young people in their emancipation from the predicament of the climate crisis and its associations to the contradictions of fossil capitalism? To explore this question, this paper examines students' agency formation in a climate action project that was planned and implemented by students in collaboration with teachers, young climate activists, NGOs and local policy makers. The projects involved an orientation to re-imagine and make a change in the existing ways of living and organizing activity in the municipality. Drawing on longitudinal student interviews, the study asks: What are the meanings and motivations diverse youth attach to the envisioning and building more sustainable futures and how do these interact over time with the various emergent demands of the activity in and outside of school? How does youth agency develop over time through their engagement in the climate action project?

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

Education can arguably play a role in humanity's learning out of unsustainable, fossil-fuel-dependent human activities, which have already made irreversible changes on the planet's climate and environment. Young people have been forerunners in raising awareness of the climate crisis that threatens their futures, as well as those of other people and species. However, how can education support young people in their emancipation from the predicament of the climate crisis and its associations to the contradictions of fossil capitalism?

To explore such a question, this paper examines students' agency formation in a climate action project that was planned and implemented by students in collaboration with teachers, young climate activists, NGOs and local policy makers. The projects involved an orientation to re-imagine and make a change in the existing ways of living and organizing activity in the municipality.

Drawing on longitudinal student interviews, the study asks: What are the meanings and motivations diverse youth attach to the envisioning and building more sustainable futures and how do these interact over time with the various emergent demands of the activity in and outside of school? How does youth agency develop over time through their engagement in the climate action project?

To account for students' agency that addresses the climate crisis, this study takes a sociocultural and transformative approach (authors). Accordingly, agency refers to contributing to collaborative transformative practices, implicating a "sought-after future," and a commitment to realizing it (Stetsenko, 2019). To unpack the process of student agency formation, the paper draws on the concepts of demands and motives, which foreground the dialectic of person and the opportunities and demands of the practices they inhabit (Hedegaard, 2012; Edwards, 2017). They take into account both the individual youth's perspectives (their motives) and the perspective of the institutionally framed activity (demands) in which they participate and to which they contribute. Motives refer to the students' orientation in an activity, shedding light on those issues that are meaningful and important for the student. Tensions between the motives and demands can lead to the reconstruction of the youth's motive orientation and are thus essential for their development and learning.

Data were collected during the 2020-2022 academic years in an upper secondary school in Southern Finland. In the school, a teacher organized a two-year environmental education project to engage students in climate actions. The data were collected for the duration of the school project, informed by an ethnographic research approach. The data are longitudinal student interviews, which were

carried out on three time points throughout the project. Almost all students took part in the interviews (n=12). The data are analyzed using an inductive qualitative analysis approach based on open coding of excerpts that formed thematically coherent, continuous units of analysis. Guided by the two research questions, coding focuses on students' accounts of their motives and demands and their mutual dialectics.

The results show that the project provided a collective space for the students to reflect on and act upon their emerging motives to understand and address the climate crisis. This collective space created new kinds of demands that expanded their agency as informed citizens who can take individual and collective actions for the environment in their school and at the municipal level. Such demands and opportunities were largely missing before the project and consequently, their thinking and actions about the topic had been for the most part confined within the private space of their own thoughts, or discussions with family, or more rarely with a small circle of their peers. Our analysis illustrates three distinct motives-demands dynamics that expanded the students' agency and enabled individual students to link the learning in the project to their personal interests, needs, and out-of-school activities. The dynamics were named as a) overcoming polarization and expanding perspectives on environmental action, b) rethinking personal and family ways of living, c) engaging in collective actions and becoming historical actors.

This study highlights the importance of transformative forms of student agency as a mediator of young people's emancipation in the face of the climate crisis. The findings of this study advance a nuanced understanding of transformative and even radical forms of student agency, as well as the conditions and resources that mediate and sustain them in educational settings.

SYMPOSIUM PAPER 4, SHORT ABSTRACT:

Using Cultural Historical Activity Theory to understand how science curricula with a climate change focus mediates student outcomes related to relevance of place

OpenSciEd develops science curriculum anchored around phenomena chosen to promote a deeper sense of global community, agency, and social responsibility. In this activity system the class' collective pursuit of explaining a phenomenon or solving a problem becomes the object of the activity with outcomes related to student learning and to fostering connections between global climate change phenomenon, students' own communities, and the desire to take action. In this study, we investigated student outcomes as from student experience data in classrooms where student activity centered around the following climate change related phenomenon: wildfire, ocean acidification and natural disasters. Student outcomes indicate that the majority of students did not make strong connections between global phenomena and their local community. Curriculum developers use these findings to revise the tools and resources that mediate student activity to increase these connections.

SYMPOSIUM PAPER 4, EXTENDED SUMMARY:

OpenSciEd develops and implements a science curriculum aligned to the Framework for K-12 Science Education (NRC, 2012) in the US whose goal is to transform what students do in classrooms, from memorizing facts, to building new understandings and competencies through investigations of complex phenomena and real-world problems. Research suggests that this kind of instruction can

help students develop deeper and more interconnected understanding of science ideas and promote equitable learning outcomes (e.g. Cunningham et al., 2020; Miller & Krajcik, 2019).

The phenomena and design problems that anchor these units are chosen to promote a deeper sense of global community, agency, and social responsibility; based in part on students' own interests and community priorities. Many students recognize climate change as a threat to their future livelihoods and express a desire to take meaningful action (Hickman, et al. 2021).

We situate our study in cultural-historical activity theory (Engestrom, 2001), where the class' collective pursuit of explaining a phenomenon or solving a problem is the object of the activity and the activity is mediated by activities the class engages with and artifacts they interact with and produce (Figure 1).

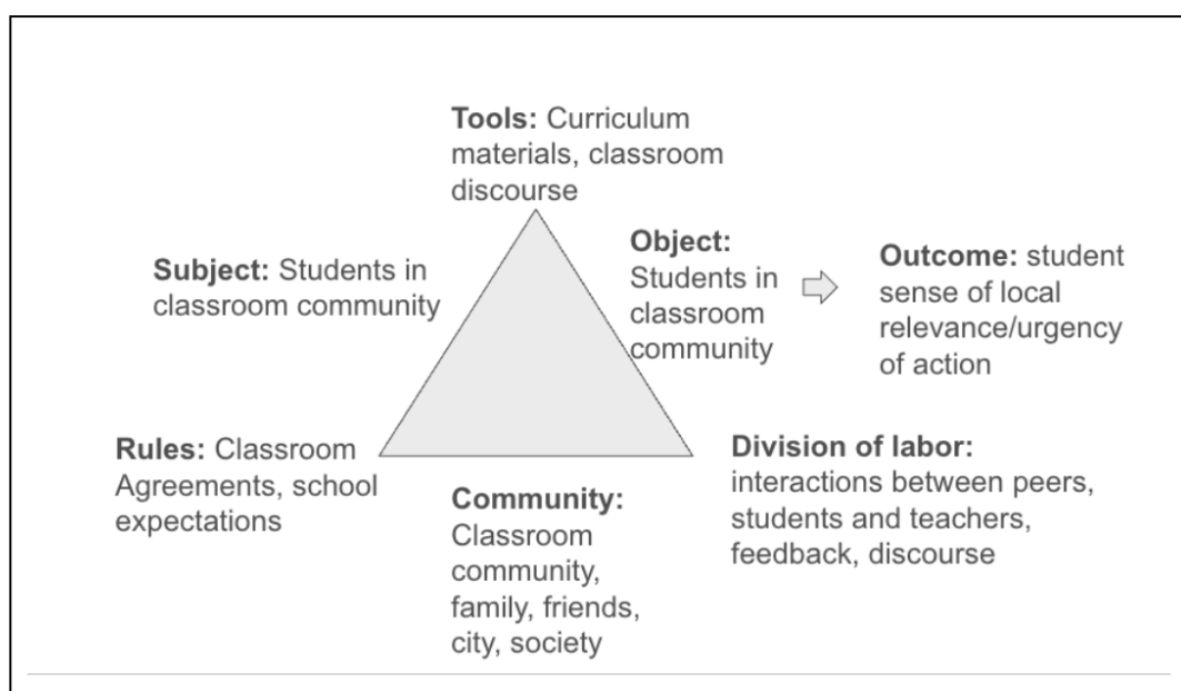


Figure 1. Activity System

Aim

The aim of the activity system is to mediate not only student learning but also connections between global phenomenon and local significance to student communities, to support orientations toward action

Methods

OpenSciEd units, developed by teams of experts were field test teachers by teachers across the US. During the field test, teachers participated in as a facilitating member of the classroom community and mediated student activity with tools such as classroom assessments. One assessment, an exit ticket used midway through each unit, asked students questions related to several constructs, including relevance of place, which is the focus of our analysis (see Figures 2 and 3). Students responded to these items by selecting a response of 1-5, 1 being “not at all true for me” and 5 being “very true for me”.

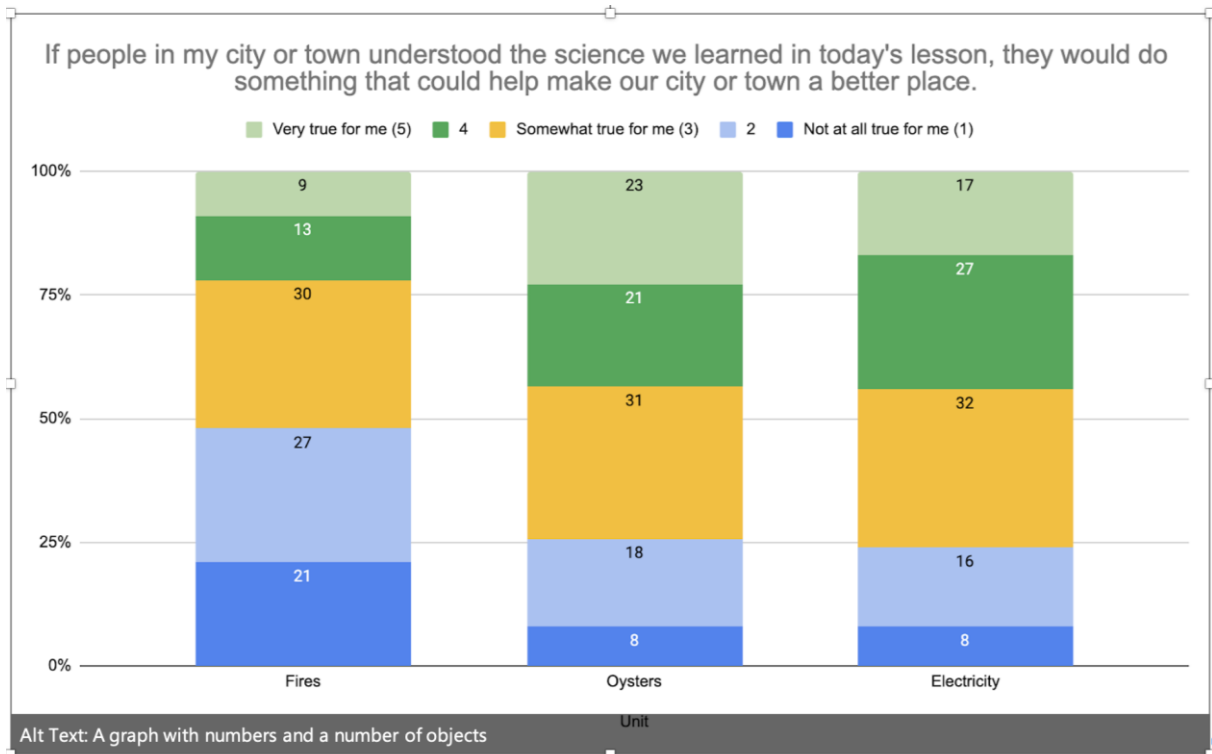


Figure 2. Student response to community relevance questions (A).

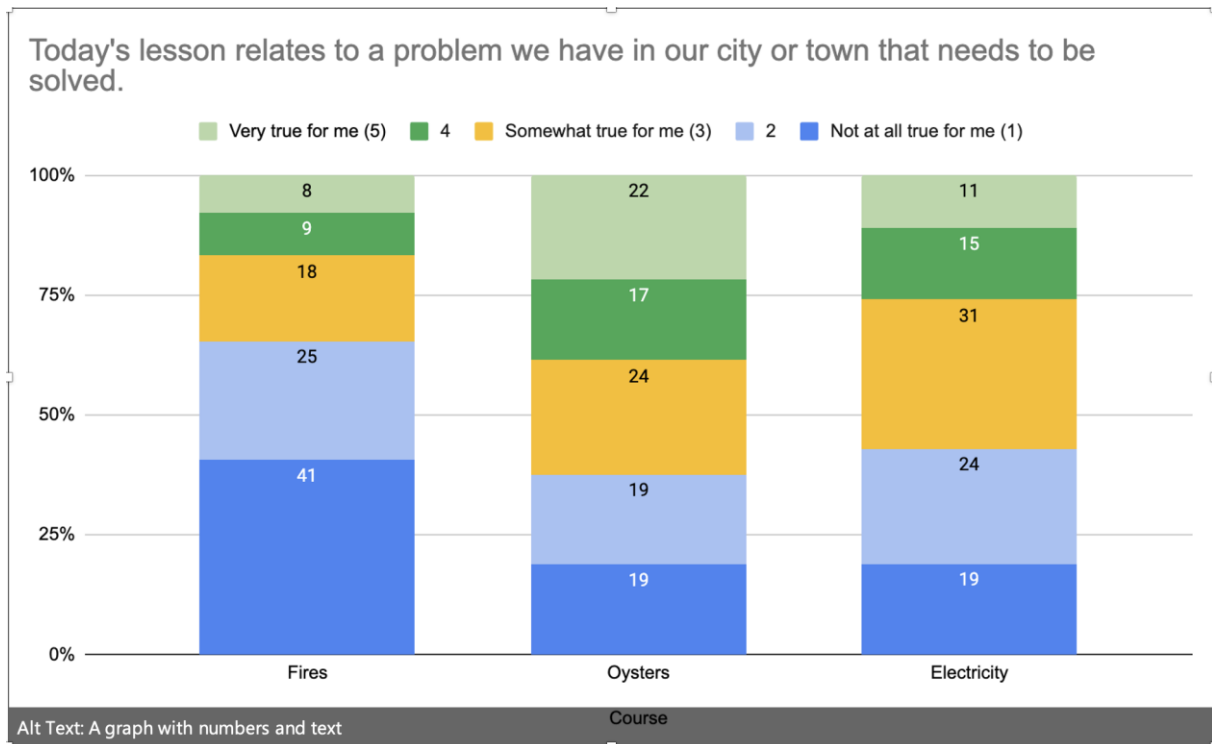


Figure 3. Student response to community relevance questions (B).



Results

Responses from each field test teacher were aggregated by unit (Figures 2 and 3). We found that in the Fires unit, 22% of students agreed strongly that the science they learned in class would inspire their community to take action. This percentage was much lower than for the Oysters (44%) and Electricity units (44%). Similarly, in the Fires unit 17% of students agreed that the lesson of the day related to a problem that needed to be solved in their community. In the Oysters unit 39% of students agreed and in the Electricity unit 26% of students agreed.

Conclusions

The data indicate that the activity system did not mediate outcomes related to connections between global climate change phenomenon and students' own communities to a great extent. For example, the Fires unit focused on the Arctic, a location few students in the US have personal connections with. We inferred that students had difficulty connecting thawing permafrost and fires to local environmental changes. The tools of the activity system included materials such as videos, readings and data sets related to carbon stored in peat in the Arctic and its capacity to burn and transfer matter and energy to the atmosphere, increasing global temperature. While these tools mediated student outcomes related to science ideas, they did not support students in making connections between carbon sinks in their own communities, their vulnerability to fire and an urgency of action in the local community. However, these analyses helped curriculum developers consider tool revisions including local case studies and interviews with local interest holders to increase opportunities for students to strengthen connections between the phenomena and their own communities.

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561 A dialectic pedagogy model for teaching/learning

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: pedagogy teaching cognitive conflict

SHORT ABSTRACT

Learning in higher education settings requires that students can acquire high level abstract concepts in meaningful ways. This paper proposes a model of teaching that relies on causing cognitive conflict in educational setting to engage students' learning. Drawing on the work of Vygotsky, Feuerstein, and Piaget, the model developed in this paper illustrates how pedagogy can be used to facilitate students' acquisition of abstract concepts. The paper introduces the background to the model before presenting a single case study of its use in a large university in South Africa. Forty-eight students registered for an honours course in education participated in this study. Exit slips were used to elicit students' perceptions of the usefulness of this teaching method and classroom observations during a problem solving activity were recorded to investigate the extent to which this pedagogical method opened spaces for dialogical interaction, specifically in relation to what Mercer (2015) calls exploratory talk, which is indicative of reasoning. Findings indicated that students reported that this model of teaching opens interaction and makes work more easily accessible, and, further, analysis of student talk in problem solving scenarios indicates the presence of exploratory talk, which is illustrative of reasoning.

EXTENDED SUMMARY

Poor performance on international benchmarking tests in math, science and language in South Africa calls into question why students in this country underperform. While education is complex and multifaceted, one definite area that impacts on achievement is teachers' pedagogical approach. This paper develops a dialectic model of pedagogy which it argues, with evidence, can be used to develop students' ability to reason critically as evidenced by the nature of their classroom talk. Three questions underpin this paper:

- What are students' perceptions of this pedagogical model?
- Does this pedagogical model open dialogue in a classroom and
- What kind of dialogue is prevalent when this pedagogical model is used?

Theory

The work of Piaget (1976) and Vygotsky (1978, 1986) forms the theoretical basis for the development in this paper of a dialectic model of pedagogy. While ontologically and epistemologically distinct, these two theorists taken together provide a robust view of development. For Piaget, equilibration is the mechanism for development while for Vygotsky, mediation in the Zone of Proximal Development (ZPD) of a more competent other to a novice explains how higher cognitive functions development. What I draw on specifically from the work of Piaget is his notion of disequilibrium or what we could

call cognitive conflict as the site of a developmental crisis. Faced with something s/he is unable to do on his/her own, a child is put into a state of disequilibrium, which is uncomfortable and needs to be overcome using external resources to aid the process of equilibration. For Vygotsky, learning happens when a child is faced with something so unfamiliar that they require the assistance of a culturally more competent other to overcome this, in the ZPD. The notion of disequilibrium, conceived of as cognitive conflict, provides for a moment to open the ZPD and work towards the development of higher cognitive functioning through teaching scientific (abstract) concepts to the child, by interpenetrating the abstract concepts with the student's everyday, meaningful, concepts.

Background to the Dialectic Model

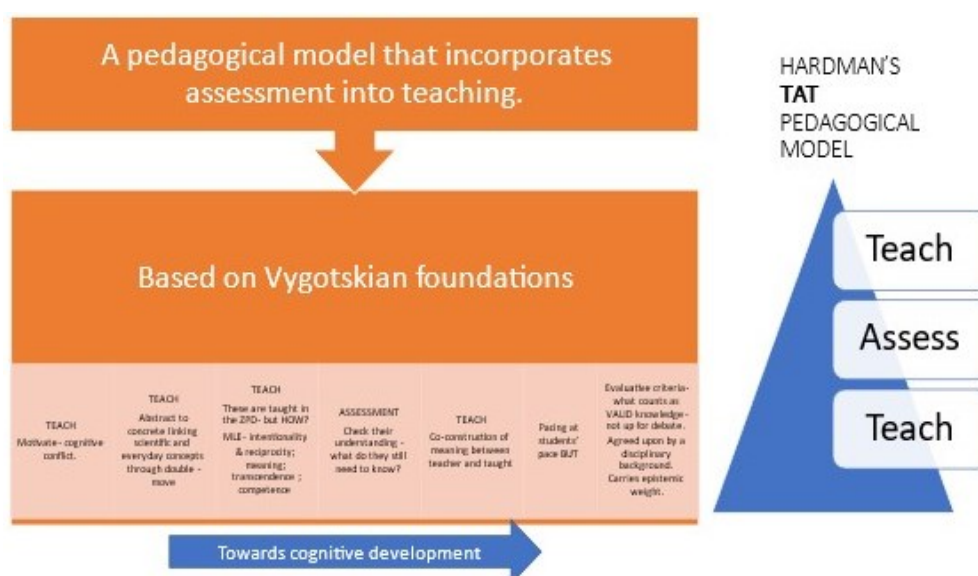
The pedagogical model proposed in this article draws some impetus from the Teach-Test-Teach program (TTT) run out of the then University of Natal, Durban (Craig, 1996). This program requires that students are able to reflect on their own thinking in academic (higher cognitive) type tasks and requires for Craig (1996) that a student can:

- Establish distance between themselves and the task
- Argue, with evidence (as opposed to beliefs), for a specific position,
- Follow the rules that underpin the solution to the specific problem given.

This is an active process of meaning making in which the teacher/lecturer learns as s/he teaches and reflects on his/her teaching in relation to those being taught. The cognitive conflict underpinning this model provides the motivation to seek a solution to the problem that has led to a state of disequilibrium. A final lesson derived from the TTT program lies in its use of testing as a tool to teach, rather than as an end point to gain a specific mark. Assessment is only useful in picking up what a student needs to learn; it is an excellent mechanism, then, for discerning a student's unique ZPD.

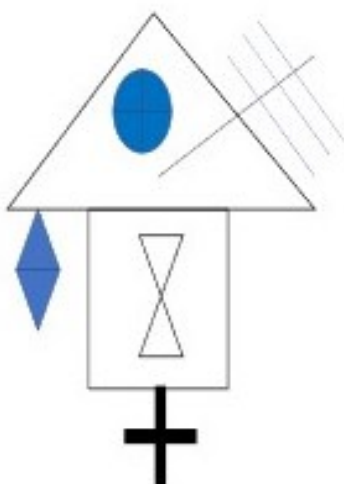
The Dialectic Teach-Assess-Teach Model: Weaving the Threads Together

Using this model of pedagogy in a lecture hall or classroom requires, first, that dissonance is introduced to motivate the student to engage with the novel topic. To this end, I use the diagram below to create cognitive conflict.



Hardman's conceptual diagram

HARDMAN'S CONCEPTUAL FIGURE



TAT dialectic model

Students are required to study the diagram in figure 1 for 30 seconds before being told to draw it (30 seconds). Note how the diagram incorporates everyday concepts (such as a cross which has a specific cultural meaning to Christians) as well as abstract concepts, such as shape, number, and colour. Once students have drawn the diagram from memory, a teaching moment opens, where the instructor elaborates the abstraction being learnt in the lecture in such a way that s/he harnesses the students' everyday concepts to interpenetrate the abstraction so that the abstraction can be applied across contexts. This is achieved through using the double-move method outlined by Hedegaard (1998) in which the abstract descends to the concrete. The instructor is then in the position to assess what the students know: to ascertain the ZPD. This is done in a context where pace is slowed to account for differing levels of understanding and where evaluative criteria, those criteria that determine what counts as a right answer, are elaborated and explicit. The paper illustrates empirically how this model is used in a postgraduate lecture series. Findings indicate that the model is perceived as useful by students and, moreover, that this type of teaching elicits a form of dialogue that has been shown to be underpinned by critical reasoning.

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562 ONLINE - The power of the mouth of Brazilian youth: agency in the rescue of social transformation

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Meaningful education

Keywords: Agency Social Transformation Brazilian Youth

SHORT ABSTRACT

Faced with the processes of globalization and (re)constitutions of socio-historical-cultural schemes of semiotic actions, we question ourselves about the agentive role in society of our Brazilian public school youth (LIBERALI, TANZI NETO, 2020). Therefore, this research investigates to what extent these students transform/reconfigure their social spaces or just replicate pre-established voices, discourses, and repertoires already defined by structures of class, ethnicity, culture, race etc. (TANZI NETO, LIBERALI, DAFERMOS, 2020). Hence, we use the concept of agency in the dialectic of social and the individual, external and internal (STETSENKO, 2017) and as ruptures of pre-established patterns of action (ENGESTRÖM, 2006) in the subjects' roles of taking initiatives to transform them (LIBERALI, 2019). In this paper, we present the preliminary results of a secondary school elective course in Brazil called "The Power of my Mouth", which aimed to understand during the creation of a documentary about LGBTI rights, Queer Linguistics, Black Feminism, and Trans-inclusive school, how the participants positioned themselves socio-historically-culturally and how students' agency and social transformation took place in the process. Methodologically, we rely on Critical Collaboration Research (PCCol), which provided spaces for dialectical confrontation between researchers and participants for critical (co)production of knowledge, in the dialectical organization of language, thus, proposing the intentional transformation of contexts and shared solutions. The analyzed data shows that the participants involved in the research could determine new feelings of belonging, culture, identity, and societal roles contributing to their linguistic mobility to (co)live with the complexities and unpredictability of contemporary life.

EXTENDED SUMMARY

Faced with the processes of globalization and (re)constitutions of socio-historical-cultural schemes of semiotic actions, we question ourselves about the agentive role in society of our Brazilian public school youth (LIBERALI, TANZI NETO, 2020). Therefore, this research investigates to what extent these students transform/reconfigure their social spaces or just replicate pre-established voices, discourses, and repertoires already defined by structures of class, ethnicity, culture, race, etc. (TANZI NETO, LIBERALI, DAFERMOS, 2020). In this research we use the concept of agency in the "dialectic between the social and the individual, the external and the internal, the person and the world, the mind and shared common practices" (STETSENKO, 2017:3) to understand the collective activities actions of a group for human development. However, we are concerned with issues of social transformation,

since our youth are increasingly dealing with globalized discourses and pre-established repertoires in their social practices. To Stetsenko (2017), how we can understand our agentic role in choosing “our path”, but, at the same time, understand the constitution of our being and the existence of forces and social structures that go beyond us (STETSENKO, 2017:4). For Liberali (2019), the concept of agency offers us a basis for investigating human development in the process of transforming human activities that is related to intentional actions. According to the author, based on Engeström (2006, 2011) and Virkkunen (2006), the agency can be understood as ruptures of pre-established patterns of action in the subjects' roles of taking initiatives to transform them (LIBERALI, 2019). To Ninin and Magalhães (2017) agency involves distinguishing contradictions to create possibilities for expanding and transforming realities. From a critical collaborative perspective, agency is based on the ability of individuals to develop means to deal/confront/reflect on (pre)established socio-historical-cultural contradictions and engage in transformative processes of human development. Hence, we present the preliminary results of a secondary school elective course in Brazil called "The Power of my Mouth", which aimed to understand during the creation of a documentary about LGBTI rights, Queer Linguistics, Black Feminism, and Trans-inclusive school, how the participants positioned themselves socio-historically-culturally and how students' agency and social transformation took place in the process. Methodologically, we rely on Critical Collaboration Research (PCCol), which provides spaces for dialectical confrontation between researchers and participants for critical (co)production of knowledge, in the dialectical organization of language and, thus, propose the intentional transformation of contexts and shared solutions. The elective course, as already mentioned, had students interviewing people related to different topics chosen by them: an LGBTI rights lawyer from São Paulo/Brazil, a professor at the Federal University of Rio de Janeiro who discussed Queer Linguistics, a transgender student, and his mother that warmly talked about love and acceptance and advocated for trans-inclusion schools and LGBTI rights, and a kindergarten teacher who dealt with black feminism. Regarding the preliminary results highlights of the research, participants reported the opportunity to talk and even vent about sensitive topics, such as harassment, rape, and social inequalities. Regarding the importance of working on issues related to gender, sex, and race at school, students said that it was an important course to raise people's awareness, as it promoted opportunities for (self)knowledge – including their own rights, as one participant mentioned -, understanding, breaking prejudices, improving self-esteem, visibility of important social issues, among others. The discussion of these topics led students to respect and reflect on the construction of a more inclusive and critical world for new generations. Thus, such discussions provided moments of questioning preestablished social-cultural-historical concepts and the necessary transformative agencies related to our responsibilities as adult citizens. Also, the initially analyzed data showed that the participants involved in the research could determine new feelings of belonging, culture, identity, and societal roles contributing to their linguistic mobility to (co)live with the complexities and unpredictability of contemporary life.

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566 Control vs Autonomy? Adults' actions supporting students in gaining power within a Change Laboratory

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Meaningful education

Keywords: Change Laboratory Adolescent students Power

SHORT ABSTRACT

This study aims to explore the actions taken by adults during Change Laboratory (CL) interventions that supported eighth-grade students in gaining power over their own learning and de-encapsulation of school. We invited 32 eighth-grade students to work on projects chosen and shaped by themselves aiming at solving the classic paradox of education: control versus autonomy. CL interventions were conducted in two comprehensive schools in Finland over two school years within regular school hours. However, the students themselves selected, designed, and implemented their own projects with the help of researchers, school staff, and key stakeholders if needed. The study focuses on the actions of adults in two projects. The first project involved creating a 10-minute documentary film on equality, bullying, and acceptance of others, while the second project aimed to develop school recesses from the students' point of view. The data of this study consists of recordings of CL sessions, follow-up sessions, and public closing events. A new analysis method was developed for analyzing the actions of the adults. Findings show that the actions of adults focused mainly on supporting and respecting students' own initiatives and decisions, which aimed to influence issues important not only to themselves but also to others and broader society. The results of this study indicate that the CL interventions provided a space in which the classic contradiction between control and autonomy was resolved by addressing the object of activity.

EXTENDED SUMMARY

The paradox of control and autonomy is a classic contradiction in education (McNeil, 1988; Rainio & Hilppö, 2017). In practice, this paradox manifests as a need for both control and order, on the one hand, and for fostering and nurturing students' participation, individual aspirations, and interests, on the other (McNeil, 1988; Rainio, 2008; Rainio & Hilppö, 2017). This contradiction has been deemed impossible to overcome and has been viewed as the primary obstacle to the development of school practices in the Finnish context (Salminen, 2012).

The concept of power is intricately linked to the notion of control. According to cultural-historical activity theory (CHAT), power is closely associated with the object of an activity, which is the fundamental element in the context of CHAT. The CHAT perspective emphasizes the importance of focusing on the object for which power is required rather than just seeking freedom from control. Empowering students cannot be achieved merely by eliminating or reducing control. Instead, the

alternative to adults' controlling role in school is to identify an object that students consider meaningful to strive for.

Our research project, *In Search for Significance*, aims to resolve this contradiction by inviting a group of adolescent students to work on issues that are significant to them. The study explores what actions adults took when adolescents students gained power through object-oriented collective activity in the school context by producing projects which aimed to influence issues important to themselves and also to others and broader society. Adolescent students are placed in a central agent position, where they redesign their own activities with the assistance and support of adults. This was accomplished by means of two CL interventions conducted in two comprehensive schools from two major cities in Finland over the school years 2020-21 and 2021-22 (Engeström et al., 2023; Tapola-Haapala et al., 2023;).

The CL sessions were held within regular school hours in a school space, but the students were given the power to select, design, and implement the projects' themes, contents, and means. Students were assisted by researchers, school staff, external experts, and key stakeholders as needed. In this study, we focus on the actions taken by adults in two projects. The first project was a documentary film that focused on issues of equality, bullying, and acceptance of others. The group produced a 10-minute documentary film on this topic during CL1. The second project's focus was on developing school recesses from the students' perspective. The group took several initiatives and implemented them during CL2.

The data of this study consists of recordings of CL sessions (n=16), follow-up sessions (n=11), and public closing events (n=2). A professional transcriber transcribed the data verbatim. The first step in analyzing the transcripts involved dividing them into conversational episodes, which were subsequently categorized into main and sub-themes. The second step involved identifying adult actions taken during the intervention. These actions were identified through iterative reading of the transcripts and classified into six categories: encouragement and positive feedback, asking questions and making suggestions, co-planning, enabling and providing concrete help, respecting students' decision-making power, and taking restrictive action. The third step involved identifying adult actions based on the substantive contents of conversational episodes. Finally, the similarities and differences between adult actions taken in two projects were compared.

The results of the study show that both project groups collaborated with multiple adults within and outside the school, despite differences in their project topics. The findings suggest that these adults took various actions to support students in gaining power over their learning and breaking down the walls of the school. These actions included providing encouragement and positive feedback, asking questions and making suggestions, co-planning, enabling and providing concrete help, respecting students' decision-making power, and taking restrictive action only when necessary. The study found that the adults did not exert much control over the students. Instead, adults' actions primarily focused on supporting and respecting students' own initiatives and decisions to produce projects that aimed to influence issues important not only to themselves but also to others and society at large. The findings indicate that the CL interventions provided a space in which the classic contradiction between control and autonomy was resolved by addressing the object of activity.

Interaction with audience:

I would like to discuss with the audience ideas on how to give more attention to the object of students' activity in school practices.

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568 How Lesson Study works and is understood in the Dutch context

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Lesson Study Teacher learning CHAT

SHORT ABSTRACT

Lesson Study is a common way for many teachers, especially in Asian contexts, to work on their professional development. In a Lesson Study, teachers go through a cycle that starts with designing a so-called 'research lesson' based on a jointly agreed issue from their own practice and in which external knowledge from theory or from experts is linked to their own practical knowledge. This lesson is then given by a team member, while the other team members observe 'live' and collect data. This data is analyzed together afterwards to improve student learning. Lesson Study is a form of teacher research, with the aim of helping teachers gain more and more insight into the learning and thinking of students. However, it is unclear whether Lesson Study also works and is understood in the Dutch context, where teachers are often used to more formal professionalization approaches such as study days, courses and workshops.

This research systematically identifies the pitfalls and challenges of the Lesson Study process using cultural-historical activity theory. In particular, conversations from eleven Lesson Study teams were analyzed for this purpose. Questionnaires and interviews were also conducted and analyzed. An important conclusion is that when teachers understand Lesson Study, they can also learn from it, but when they do not understand it, it proves to be of little effect. The supervisor appears to play an important role, but also appears to be able to hinder the Lesson Study process and its learning potential.

EXTENDED SUMMARY

Background and aims

Lesson Study is a relatively new professionalization approach in the Netherlands for teachers in primary, secondary, vocational and higher education (De Vries et al., 2016), while it is a common approach for teachers in Asian contexts for continuous professional development (Stigler & Hiebert, 2009). In a Lesson Study, teachers go through a cycle that starts with designing a so-called 'research lesson' based on a jointly agreed issue from their own practice and in which external knowledge from theory or from experts is linked to their own practical knowledge. This lesson is then given by a team member, while the other team members observe 'live' and collect data. This data is analyzed together afterwards to improve student learning. Lesson Study is a form of teacher research, with the aim of helping teachers gain more and more insight into the learning and thinking of students (Takahashi &

McDougal, 2016). When teachers can better interpret their students' learning during lessons, they can act more consciously as teachers, which improves their teaching.

However, it is unclear whether Lesson Study also works and is understood in the Dutch context, where teachers are often used to more formal professionalization approaches, such as study days, courses and workshops (Vrielink et al., 2022). Moreover, schools that use a professionalization approach such as Lesson Study for the first time often appear to have difficulty implementing it as intended. If the approach does not immediately produce the hoped-for learning, it is often stopped because it 'doesn't work' (Bryk, 2015). Usually people do not fully understand why it did not work as hoped. Lesson Study could run the same risk of being hastily dismissed as a non-working approach after investing a lot of time and effort. That is why, in the project 'Validation and appreciation of Lesson Study as a mixed form of formal and informal learning in the Dutch context', subsidized by the National Research Organization for Education (NRO), we investigated how Lesson Study is understood and also implemented in Dutch practice, in order to learn lessons for the same practice. We looked for a learning theory that could explain the learning processes of teachers and the conditions under which teachers carry out Lesson Study. We think we have found it in Engeström's cultural-historical activity theory (CHAT) (Engeström, 1987, 2001; Uffen et al., 2022).

Methods

We conducted the research on the basis of analyzes of questionnaires and interviews, and conversation analyzes of Lesson Study meetings using CHAT. Eleven Lesson Study teams from four secondary schools were involved in the research.

Results

The research shows that the teachers usually say they have learned 'little' or 'average', and sometimes 'a lot', from their participation in Lesson Study. If they have learned from it, on average they appear to have learned the most in the area of observing students and they appear to have gained insight into the learning and thinking of students. They also often indicate that their lessons and the learning of their students have not improved much. In order to learn from Lesson Study, teachers appear to need to understand how Lesson Study should be conducted, what it is and is not, what the value of collaboration is and how Lesson Study can contribute to their learning process. Sufficient time and a substantively tailored passage of the Lesson Study cycle with a relevant, focused research topic prove to be helpful. They use external expertise and so-called exploratory discussions with the focus on deepening shared understanding. However, these points prove difficult to achieve in practice. For example, the supervisor rarely appears to support the participants' conversations in the direction of exploratory conversations. He or she usually steers the group in the direction of instrumental discussion, with the focus on rapid problem solving and decision-making. In addition, supervisors mainly focus on completing the steps of Lesson Study and there are few discussions in the teams about the purpose of Lesson Study and the various research activities.

Conclusion

An important conclusion is that when teachers understand Lesson Study, they can also learn from it, but when they do not understand it, it proves to be of little effect. The supervisor appears to play an important role, but also appears to be able to hinder the Lesson Study process and its learning potential. Based on the findings, practical guidelines have been formulated for Lesson Study teams and their facilitators, on the one hand in terms of required knowledge and skills, and on the other

hand in terms of facilitator-specific tasks to help teachers learn from Lesson Study and to strengthen their learning process during the Lesson Study conversations (Uffen et al., 2024).

How interaction with the participants is planned

We will organize the discussion based on statements that relate to the subtheme: bringing together theory and practice.

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571 Dialectics as Methodology: An Interactive Workshop

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Presentation: Workshop (90 minutes)

Theme: Imagining future worlds

Keywords: Dialectics Play and Performance Tool-and-Result

SHORT ABSTRACT

We are living in and through a time of ever-increasing polarization the likes of which most of us have not seen before. Even those of us who have embraced the dialectics of socio-cultural-historical theory as a worldview, and uncertainty as an inherent attribute of human existence are pulled by a felt need to “know”-- to choose sides, to hold onto something certain, to “take a stand, or appeal to the moral high ground.”

Far from an abstract or purely theoretical concern, this is a political imperative, a task raised by history that requires a revolutionary re-conception of the concept of dialectics that progressives and social change agents hold so dear. Practicing dialectics as a methodology challenges the core dualisms that were the hallmark of modernism—individual and group, process and product, thinking and speaking, cognition and emotion, revolution and stability.

Can we create large and small environments where we are able to get beyond dualisms? While the answer itself is unknowable, a tool-and-result methodology exists where groupings of people can put their ideological certainty and end-pointism aside and embrace the imperative that history demands in the middle of the 21st century— to collectively discover/create “the how” of everything that we do. In this workshop we will creatively play with this “how” question and with dialectics as the methodology with which to engage it. In addition, dozens of examples will be shared from education, therapeutics, medicine and health, etc. from different parts of the world.

EXTENDED SUMMARY

We are living in and through a time of ever-increasing dualisms and polarization the likes of which most of us have not seen before. Even those of us who have embraced the dialectics of socio-cultural-historical theory as a worldview, and uncertainty as an inherent attribute of human existence are pulled by a felt need to “know”-- to choose sides, to hold onto something certain, to “take a stand, or appeal to the moral high ground.” Perhaps taking dialectics to be a worldview and practicing dialectics as a way of thinking might themselves be contributing to our being vulnerable to falling back to dualistic certainty. Perhaps we need to revolutionize dialectics itself if it is to be useful at such an historical moment like this one.

Among those who may have been or are now contemplating such a shift is the late philosopher and activist Fred Newman, who lay the foundations for a new kind of activity-theoretic activism involving the practice of dialectics by ordinary people. In an article Newman wrote for the *Annual Review of Critical Psychology* entitled One Dogma of Dialectical Materialism, he stated this passionately (some may think a bit dogmatically):

Dialectical Materialism is not a kind of materialism. Indeed, it is not an *ontological* or *epistemological* position at all. It is, rather, a full blown shifting of the philosophical ground to a methodological point of view - not an interpretation of reality at all but a changing of it! The dialectic is not to be found between the activity and its contemplation (the mind and the body); the dialectic is the complete rejection of `between-ness` in favor of a *radically monistic* (call it `one-dimensional` if you like) methodology." (Newman, 1999, p 87)

Dialectics as methodology is a practical-critical activity that takes what there is and transforms it into something else/other. It is what Vygotsky referred to as "simultaneously the tool and the result" (Vygotsky, 1978, p. 65). It is both the mundane and magical activity of creating many, many overlapping ZPDs. Practicing dialectics challenges the core dualisms that were the hallmark of modernism—individual and group, process and product, thinking and speaking, cognition and emotion, revolution and stability.

Far from an abstract or purely theoretical concern, this is a political imperative, a task raised by history that requires a revolutionary re-conception of the concept of dialectics that progressives and social change agents hold so dear.

Can we create large and small environments where we are able to get beyond dualisms? While the answer itself is unknowable, a tool-and-result methodology exists where groupings of people can put their ideological certainty and end-pointism aside and embrace the imperative that history demands in the middle of the 21st century— to collectively discover/create "the how" of everything that we do. In this interactive workshop we will creatively play with this "how" question and with dialectics as the methodology with which to engage it in a variety of situations and scenarios. In addition, dozens of examples will be shared from education, therapeutics, medicine and health, etc. from different parts of the world. This is how we will explore such questions as:

- What prevents us from listening, whether it be to a family member, a co-worker or someone we strongly disagree with? Can we engage non-ideologically even when it seems impossible—in times of disagreement, despair, and division?
- What types of activity support the creation of environments that set us free from an obsession with "taking a position?"
- Is it possible to maintain a creative stance with people with whom we hold opposing views, without covering over our differences? Can we create tools that help us move beyond the authority of right and wrong and towards a practice that generates collective power?
- How might the field of socio-cultural research and practice need to grow to be of use in these challenging times?

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572 Analyzing processes of taking awareness on feeding from semantic matrix and activity elements

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Awareness process Conceptual Profile Theory Activity Theory

SHORT ABSTRACT

This article aimed to investigate processes of taking awareness lived by preservice teachers, considering different ways of thinking and speaking about feeding, structured in a historical-cultural semantic matrix. The process of taking awareness was investigated based on ideas proposed by Leontiev (1978) in CHAT, articulated with the perspective presented in the theory of conceptual profiles by Mortimer and El-Hani (2014). This qualitative research involved 13 preservice teachers enrolled in a course on Methodology for Chemistry Teaching II, in a public university in Northeast, Brazil. A didactic sequence of activities was proposed with five remote classes (1h30min each), held on the Google Meeting Platform. All classes were fully video-recorded, relevant episodes selected and transcribed, and the analysis of discursive interactions in the classroom was made using a tool proposed by Mortimer and Scott (2002). The relationships between the elements of the activity associated to the emergence of themes and categories in discursive interactions enable us to verify the process of taking awareness has a dialectical nature, individual and collective. We identified three main aspects that can characterize processes of taking awareness on feeding: there is a learning pathway in which logical procedures gradually change from elementary (identifying and grouping) to elaborate ones (classifying, comparing, analyzing) bringing complexity to the understanding on the topic; the approach of different ways of thinking about feeding associated with sociocultural contexts favored an expanded awareness about meanings beyond only those scientifically accepted; and scientific concepts learning should involve a plural and holistic view on objects.

EXTENDED SUMMARY

This article aimed to investigate processes of taking awareness lived by preservice teachers, considering different ways of thinking and speaking about feeding, structured in a historical-cultural semantic matrix. Food is a sociocultural and polysemic topic that evokes contexts related to social, environmental, cultural, religious issues, among others. Processes of taking awareness were investigated based on ideas proposed by Leontiev (1978) in the CHAT, articulated with the perspective presented in the theory of conceptual profiles by Mortimer and El-Hani (2014). Leontiev (2004) highlights the social character of consciousness related to the human activity, through the investigation of how consciousness is transformed from the structure of activities in which individuals engage. Here, we propose to analyze the process of becoming aware about concepts or themes based on the elements of the activity for learning. We seek to identify elements of the activities

proposed and developed in classroom and relationships among them which can evidence processes of taking awareness by preservice teachers. Going beyond the scientific view for the concepts, we adopted a plural approach to the topic about feeding, proposing a sequence of activities based on themes and categories organized in a historical-cultural semantic matrix, based on the theory of conceptual profiles. According to Mortimer et al (2014), the emergence of heterogeneous ways of thinking is inevitable in the classroom discussions and the process of conceptualization can occur as students take awareness on different ways of thinking and speaking about a concept or topic under study, associated to diverse contexts.

This qualitative research involved 13 preservice teachers enrolled in a course on Methodology for Chemistry Teaching II, in a public university in Northeast, Brazil. A didactic sequence of activities was proposed with five remote classes (1h30min each), held on the Google Meeting Platform. All classes were fully video-recorded, relevant episodes selected and transcribed, and the analysis of discursive interactions in the classroom was made using a tool proposed by Mortimer and Scott (2002). To design activities, we considered themes and categories of the semantic matrix about feeding, the elements of the activity and the following relationships between them were analyzed: subject, object, and mediating artifacts; subject, rules, and peers interactions; subject, object, and ideas shared with the community. The historical-cultural semantic matrix was elaborated from historical sources and works on students' conceptions about food/feeding, considering the ontogenetic, sociogenetic and microgenetic domains proposed by Vygotsky (Wertsch, 1985), and it brings together the following themes and their associated categories: 1- Feeding understood from generalist ideas (Material, Satiety/Quantity, Act/Action), 2- Feeding related to life and as something that can bring benefits or harms (Source or form of pleasure, Functional, Vital Need), 3- Feeding as part of social interactions (Celebration, Communion, Culture), 4- Feeding understood from what is considered healthy (Consumption of specific foods–Macro, Nutritional Variety–Micro, Energy value, Public health), 5- Feeding as an important biochemical process for human physiology (Power Supply, Source of nutrients, Disease control and prevention). In the analysis, different ways of speaking about feeding were identified from the episodes, using these themes and categories.

Results pointed to relationships between the elements of the activity and processes of taking awareness, both in activities carried out individually or collectively, which guided the production of discourses throughout the didactic sequence. Appropriation of meanings by the preservice teachers was closely related to the mediating artifacts used to approach the object, for example, the analysis of images that showed habits for feeding adopted by families from different countries and cultures provided wide and meaningful discussions on the topic, putting together different themes and categories of the semantic matrix, expanding the repertoire of ideas previously presented by the subjects and embodying a historical-cultural view on the topic. It seems to be enhanced by interactions between the preservice teachers, promoted by work in small groups, then presentations for the whole class. Different ways of thinking emerged according to the type of activity in which they engage, and the cognitive demands in each of these activities seemed to mobilize specific logical procedures, favoring a gradually more complex understanding on feeding. Finally, the study of the relationships between the elements of the activity associated to the emergence of themes and categories in discursive interactions enable us to verify the process of taking awareness has a dialectical nature, individual and collective. We identified three main aspects that can characterize processes of taking awareness on feeding: there is a learning pathway in which logical procedures

gradually change from elementary (identifying and grouping) to elaborate ones (classifying, comparing, analyzing) bringing complexity to the understanding on the topic; the approach of different ways of thinking about feeding associated with sociocultural contexts favored a expanded awareness about meanings beyond only those scientifically accepted; and scientific concepts learning should involve a plural and holistic view on objects.

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575 Social activity in English classes for specific purposes to reframe the teaching-learning processes

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Meaningful education

Keywords: CHAT Social Activity ESP

SHORT ABSTRACT

This research, situated in the field of Applied Linguistics, arises from the need to discuss the teaching-learning of English for Specific Purposes (ESP) in Higher Education. The main purpose of ESP in this kind of curriculum is to develop student's skills for language communication in national and international situations. Thus, grounded in the Cultural-Historical Activity Theory (CHAT) (Vygotsky, 1934/2001), which relates human development to social problems in specific and historically dependent cultural contexts, and in Social Activity (SA) (Engeström, 1999; Liberali, 2009), understood as an activity that individuals interact with other cultural and historical contexts this paper discusses the proposal of a teaching-learning framework in SA for ESP in a Technological College in Brazil. The traditional ESP focuses on the understanding of rules and strategies to deal with the new language, the SA emerges as a possibility to promote spaces for subjects to act and reflect in the classroom as an elaborator, creator and transformer of knowledge and the world (Liberali, 2009). The methodology is Critical Collaborative Research (PCCol) (Magalhães, 2012), whose critical-interventionist foundation finds collaboration as its working method. The corpus of this study was collaboratively produced in the second semester of 2023 with a group of 5 professors. As outcomes reveal, a teaching and learning proposal through SA in Languages for ESP is of utmost importance, as it deals with social practices considering students as engaged subjects in the transformation of the world and their knowledge.

EXTENDED SUMMARY

The English language has achieved widespread relevance in contemporary society. In the context of globalisation, as highlighted by Seidlhofer (2001), it has emerged as a means of international communication, being predominantly used among non-native speakers. In this regard, learning English is crucial in the current scenario of the globalised job market, as the language is widely used in commercial transactions, business collaborations and global conferences. Therefore, professionals who master the language have a significant advantage, as they can communicate effectively with colleagues, clients and partners around the world. This research, situated in the field of Applied Linguistics, arises from the need to discuss the teaching-learning of English for Specific Purposes (ESP) in Higher Education. The main purpose of ESP in this kind of curriculum is to develop student's skills for language communication in national and international situations. The development of these skills, in addition to expanding students' knowledge and skills, can create attitudes and possibilities for

being, acting, feeling and experiencing the world (Liberali, 2020). Taking into account the super diverse scenario, that is, the diversification of diversity (Vertovec, 2007), of working conditions, it appears that the training of professionals in the areas of technology, business and industries, for example, requires knowledge produced and disseminated in English worldwide. Thus, grounded in the Cultural-Historical Activity Theory (CHAT) (Vygotsky, 1934/2001), which relates human development to social problems in specific and historically dependent cultural contexts, and in Social Activity (SA) (Engeström, 1999; Liberali, 2009), understood as an activity that individuals interact with other cultural and historical contexts this paper discusses the proposal of a teaching-learning framework in SA for ESP in a Technological College in Brazil. The traditional ESP focuses on the understanding of rules and strategies to deal with the new language, the SA emerges as a possibility to promote spaces for subjects to act and reflect in the classroom as an elaborator, creator and transformer of knowledge and the world (Liberali, 2009). The methodology is Critical Collaborative Research (PCCol) (Magalhães, 2012), whose critical-interventionist foundation finds collaboration as its working method. As the phrase itself alludes, collaboration implies the involvement of participants as active agents in the joint production of shared decisions, through questioning practices and theories in the construction of the new (Ninin; Magalhães, 2017). The corpus of this study was produced in the second semester of 2023 with a group of 5 Higher Education professors in five phases: planning the workshop, executing the workshop, preparing social activities, applying social activities to students, interpreting and discussing the data. As outcomes reveal, a teaching-learning proposal through SA in Languages for ESP is of utmost importance, as it deals with social practices considering students as engaged subjects in the transformation of the world and their knowledge. The research is ongoing, but we can already conclude that the professors were not clear about the concept of ESP, were unaware of working with social activities and felt very motivated to apply social activities to students as a way of giving new meaning to the teaching-learning process.

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578 Applying a 'funds of knowledge' approach to learning in primary and secondary schools

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: funds of knowledge teaching curriculum

SHORT ABSTRACT

This research advocates the implementation of a 'funds of knowledge' (FoK) approach in school curricula, particularly focusing on primary (5-11) and secondary (11-16) education in England. Originating from addressing educational disparities for young people from ethnically diverse families from working-class Mexican communities, FoK emphasises the importance of understanding and acknowledging through school curricula the rich knowledge present within students' homes and communities. By developing reciprocal exchanges between home and school, this approach seeks to enhance student engagement, motivation and success. Through examples of teaching reading and science, our study examines the potential for aligning school practices with students' diverse backgrounds and experiences, thereby promoting inclusivity and meaningful education. Data for our study were generated through photographs taken by children and parents in homes and communities, photo-elicitation interviews with parents and teachers and an examination of lesson content and teaching resources. Through discussions with children and teachers as participants in this research, the potential for making authentic links between home and community FoK and the school curricula for teaching reading (in key stage 1) and science (in key stage 4) was established. The results of our work indicate ways in which educators can leverage their 'collective transformative agency' (Stetsenko, 2013) to apply a FoK approach to transforming the existing school curriculum into one that better values and integrates students' cultural assets, leading to enhanced educational outcomes.

EXTENDED SUMMARY

This paper focuses on establishing the potential for applying a 'funds of knowledge' (FoK) approach to primary and secondary education. The concept of FoK for teaching was initially developed in the 1990s by Louis Moll and colleagues to address educational disparities for young people from ethnically diverse working class communities in Mexico (Moll et al., 1992). By encouraging reciprocal exchanges between home and school, FoK methodologies for teaching aim to promote inclusivity and engagement. Drawing from the principles of Cultural Historical Activity Theory (CHAT), and specifically from the work of Engeström (2015), in this paper we emphasise the importance of identifying both the alignment and contradictions between home and school practices for young people and view these as drivers for change within activity systems (such as the school curriculum). Teaching practices are often positioned and understood in light of the culture and history of the setting within which they occur (Daniels, 2010). As such, it is necessary to recognise and attempt to counteract the pull of

the authoritative discourse of the institution of the school when attempting to make changes to well-established school curricula.

Our aim in this paper is to argue that contradictions between home and school practices can be resolved through the collective actions of the educators working within activity systems (such as schools). We discuss the potential of using the wealth of knowledge existing within students' homes and communities for reshaping the type and organisation of knowledge communicated through school curricula. When participants in a shared activity commit to the development of a shared vision (for example teachers taking ownership of designing appropriate lesson content for their students) we see how they begin to understand ways in which their individual actions can make a difference (Stetsenko, 2013). In our study, we outline examples of how teachers mobilised their collective agency in order to rethink and redesign their approach to the content of their lessons, thus disrupting the perceived confines of the school curriculum.

Our study is situated in the context of teaching reading in key stage 1 and science in key stage 4. For teaching reading, we examine how multi-lingual students learn to read in various language-rich environments both at home and in school. By aligning teaching practices with students' linguistic resources, educators can build on and enhance these assets, thereby promoting literacy development at school in different ways. Similarly, in science education in key stage 4, our work advocates integrating students' cultural and experiential backgrounds into the curriculum. By drawing on local community resources, we argue that educators can create synoptic links to science topics, making learning more relevant and engaging for students.

This presentation highlights two school-based FoK projects as case studies. Our first case study examines the teaching of reading to six-year old multi-lingual students. We emphasise the importance of aligning home and school approaches in order to effectively develop students' individual linguistic resources. Drawing on data collected through photography and photo-elicitation interviews, we demonstrate how teachers can adapt teaching strategies and lesson content to meet students' diverse needs, thereby promoting literacy development across different language contexts. Our second case study focuses on science education. Data analysed includes lesson overviews and resources for a series of lessons on science-related careers. Students in key stage 4 are introduced to various different careers through an approach which utilises local community assets. As a result of integrating students' cultural backgrounds and interests into the curriculum, their engagement and curiosity of scientific concepts was enhanced.

Our results indicate that establishing the potential for a FoK approach to designing school curricula not only bridges the gap between students' everyday experiences and formal education but also promotes the value of acknowledging their diverse knowledge in our everyday classroom practices. Overall, we highlight the importance of recognising students' diverse FoK as assets for teaching and establish the potential for educators to work collectively to resolve the underlying contradictions between home FoK and the school curriculum. By implementing FoK methodologies in this way, teachers can become empowered to enact their 'collective transformative agency' (Stetsenko, 2013) to create inclusive learning environments that address, and are relevant to, students' individual needs and experiences. We argue that effectively integrating students' cultural assets into school curricula will ultimately enhance educational practices and promote meaningful learning experiences for all. Throughout this presentation we will invite delegates to contribute to our dialogue by exploring the manner in which teachers can leverage their collective transformative agency in practice. We will

encourage reflections on how educators perceive the authoritative discourse of school curricula and seek views about how to design lessons that effectively integrate students' cultural assets in all curriculum areas.

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594 ONLINE - Successful Play-Based Programs: Case Studies

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Meaningful education

Keywords: Play Pedagogy Play-based Learning

SHORT ABSTRACT

The literature is abundant with arguments about the importance of play for development and learning. This research describes successful play-based (defined for this study to include project-based, interest-driven, outdoor, and community-based) educational programs within school settings. Success is operationalized as programs described as successful by the stakeholders. The research explores theoretical underpinnings; pedagogical approaches; structures; challenges; systems to maintain innovation; roles of teachers, parents, and administrators; community relations; how the school defines a successful play-based program; evaluation approaches; and suggestions for other school administrators and teachers. The purpose is to help researchers and interested practitioners understand the variety of models that result in sustained play-based programs that are successful as defined by the school staff and administrators. The presentation will highlight methods of investigation, summarize completed case studies from schools in several countries and regions, including Denmark, the United Kingdom, New York City, and Central Texas, and discuss emergent themes. The data were collected through in-depth in-person interviews. Virtual interviews were conducted when in-person interviews were not practical, and site visits were conducted to supplement the interviews. While data for this research came solely from the interviews, observations and school tours created opportunities for the researchers to observe programs firsthand, creating credible interpretations of the interviews.

EXTENDED SUMMARY

The literature is abundant with arguments about the importance of play for development and learning. These include reports from the National Association for the Education of Young Children, the American Association of Pediatrics, and the United Nations High Commission for Human Rights (Lillard, Lerner, Hopkins, Dore, Smith, & Palmquist, 2013). The current education climate has resulted in a decrease in play opportunities both in and out of school (Dinnerstein, 2016). Vygotsky discussed the importance of imaginary play in learning and development (2016). Hansel (2017) discusses this decline and is specifically concerned with how much two-dimensional time (screens/workbooks/worksheets) has replaced three-dimensional, hands-on experiences. The researchers have seen firsthand the decrease in opportunities to play, even at the kindergarten level, often being replaced with worksheets and videos. The pandemic exacerbated these concerns. Two-dimensional learning is reported to dominate classes in the early grade levels. The purpose of this research is to describe successful play-based (defined for this study to also include project-based, interest-driven, outdoor, and community-based) educational programs within

school settings. This research explores theoretical underpinnings; pedagogical approaches; structures; challenges; systems to maintain innovation; roles of teachers, parents, and administrators; community relations; how the school defines a successful play-based program; evaluation approaches; and suggestions for other school administrators and teachers.

Programs included in this study range from fully-implemented systemic play-based curricula with students in control of their education (e.g. Sudbury Schools) to public schools with a “project time” built into their weekly schedule to play activities in an individual teacher’s classroom. The purpose is to help understand the variety of models that result in sustained play-based programs that are successful as defined by the school staff and administrators. It is not assessing the effectiveness of the programs from the outside, but rather at the factors that support the ongoing implementation. The goal of the study is to describe multiple models of play-based learning and strategies for successful implementation in a variety of contexts.

The data were collected through in-depth in-person interviews. Virtual interviews were conducted when in-person interviews were not practical, and site visits were conducted to supplement the interviews. While data for this research came solely from the interviews, observations and school tours created opportunities for the researchers to observe programs firsthand, creating credible interpretations of the interviews. The themes that will be discussed include the importance of the teachers and administrators maintaining a professional learning community, the importance of internal rather than external assessment, and strategies to encourage buy-in among all the stakeholders.

The purpose of the analysis is to help interested practitioners understand a variety of models that result in sustained play-based programs that are successful as defined by the school staff and administrators. The presentation will highlight methods of investigation, summarize completed case studies from schools in several countries and regions, including Denmark, the United Kingdom, New York City, and Central Texas, and discuss emergent themes.

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597 Organizing cross-curricular learning for sustainability: International perspectives

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Presentation: Symposium (90 minutes)

Theme: Meaningful education

Keywords: Cross-curricular learning Sustainability Institutional learning

SHORT ABSTRACT

To foster sustainable development, it is crucial to engage in learning beyond conventional educational settings. Cross-curricular curriculum enables students to integrate personal experiences, real-world scenarios, and traditional school lessons into their learning process in a meaningful way. Many countries have introduced cross-curricular learning in their educational systems only in recent years. However, current implementations show that the demands pushing educational professionals across conventional borders are at odds with established local schooling practices. This symposium examines efforts to organize cross-curricular learning for sustainability in three countries that differ in their educational systems and cultures, namely China, Finland, and Taiwan.

The three papers in the symposium will examine the following questions: How can learning for cross-curricular sustainability be organized in collaboration between universities, schools and community stakeholders in Finland, China, and Taiwan? What institutional and inter-institutional resources and barriers can be identified that support or hinder cross-curricular learning for sustainability?

Paper 1 examines a case of designing cross-curricular learning to address sustainability in existing pedagogical practices in a Finnish upper secondary school. Paper 2 documents a university-school partnership aiming at developing interdisciplinary pedagogy of/beyond mathematics in a lower-secondary school in China. Paper 3 presents a case of a Taiwanese harbour city where four high schools, a museum, and a university constituted cross-curricular courses around marine issues. Significant portion of our allotted time will be devoted for audience discussion, in which the discussant will invite the audience to explore, dialogue and reflect on global contexts of cross-curricular learning.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

Schools and formal education are often seen as central actors in raising a new generation capable of acting for sustainable futures. However, formal education has been slow to address the sustainability crises and the associated need for systemic changes in society. For example, although sustainability issues are significant in the Finnish national curricula, the practical implementation of sustainability education in everyday pedagogical practices of Finnish schools has been riddled with contradictions and ambiguities. To address these challenges, this study examines a change laboratory study conducted in a Finnish upper secondary school that aimed to support the teachers' attempts to design cross-curricular learning to address the sustainability crises in their teaching. The study draws

on the theory of expansive learning and the notion of subject-object-subject interaction. We pose the following questions for our inquiry: How can upper secondary school teaching be redesigned to foster cross-curricular learning for sustainability? How do teachers of different subjects construe and negotiate sustainability as a curricular topic? What tensions emerge – and how are they addressed – to design cross-curricular learning for sustainability in the school? This study contributes to advancing the understanding of how education can address the sustainability crises that threaten the future of humanity and the planet, by creating conditions for cross-curricular learning for sustainability.

Keywords: Change laboratory, cross-curricular learning, subject-object-subject interaction, sustainability

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

1. Aims and background

Schools and formal education are often seen as central actors in raising a new generation capable of acting for sustainable futures. However, formal education has been slow to address the sustainability crises and the associated need for systemic changes in society (Cutter-Mackenzie & Rousell, 2019; Karsgaard & Debra, 2023). For example, although sustainability issues have a significant role in the Finnish national curricula, the practical implementation of sustainability education in everyday pedagogical practices of Finnish schools has been riddled with contradictions and ambiguities (Mykrä, 2021).

To address these challenges, this study examines a change laboratory study conducted in a Finnish upper secondary school that aimed to support the teachers' attempts to design cross-curricular learning to address the sustainability crises in their teaching. The study draws on the theory of expansive learning and the notion of subject-object-subject interaction (Engeström, 2008). Earlier research has shown that examining subject-object-subject interaction can shed light on implicit scripts that may hinder or enable cooperative actions and mutual understanding about the purposes and modes of working (Rantavuori et al., 2016). With these premises in mind, we pose the following questions for our inquiry:

How can upper secondary school teaching be redesigned to foster cross-curricular learning for sustainability? How do teachers of different subjects construe and negotiate sustainability as a curricular topic? What tensions emerge – and how are they addressed – to design cross-curricular learning for sustainability in the school?

2. Participants, data, methods

The data for this study comes from a series of change laboratory sessions (Engeström, 2008) conducted with the teachers (n=15) and students (n=5). The Change laboratory is a participatory intervention method characterized by a collective effort to question and analyze the existing practices, re-envision what the activities are about, and create new tools and practices to realize the enhanced vision. The data include audio recordings of the change laboratory sessions as well as teacher interviews and documents produced by the teachers as part of the study. Our thematic analysis (Clarke & Braun, 2017) focuses on 1) new tools that were designed in the study to address sustainability in teaching, 2) how sustainability was construed and negotiated by the participants of the study, 3) tensions that emerged in the process and how these tensions were solved.

3. Results and conclusions

The teachers created a set of tools to support cross-curricular learning for sustainability: “theory cards”, “actions cards”, “space cards”. For the “theory cards” the teachers of different subjects provided analysis of how their subject-specific curricula intersected with the topic of sustainability. For “action cards”, they designed scripts for pedagogical activities. For “space cards” envisioned spaces in the school to support cross-curricular activity. The results of our ongoing analysis shed light on the marginal role of sustainability in many of the school subjects and in the overall structure of the school activity, as well as on the varied barriers that prevented the teachers from addressing it in their teaching (e.g., lack of training in the subject matter, packed curriculum, difficulties in the perceived political nature of the topic). Our analysis also sheds light on how the design of the new tools mediated mutual understanding among the teachers, which helped them to reorganize their teaching and initiate coordinated efforts to address sustainability as a cross-curricular topic in their school.

In all, this study contributes to advancing the understanding of how education can address the sustainability crises that threaten the future of humanity and the planet, by creating conditions for cross-curricular learning for sustainability. The study highlights the importance of addressing and examining a central barrier in this task, that is, how institutional infrastructures and systemic organization of school activity may be at odds with the curricular visions that promote sustainability. The presentation will end with some questions to engage the other symposium audience in reflection on the topic.

SYMPOSIUM PAPER 2, SHORT ABSTRACT:

Interdisciplinary teaching and learning is a critical vehicle to develop students' core competences for social sustainability. While, how to promote teachers to identify with the new idea of interdisciplinary curricula, master relevant teaching methods and carry out interdisciplinary teaching and learning in classrooms is crucial. This article presents a case study that explored the changing process of a mathematics teaching and research group (MTRG) through interdisciplinary teaching and learning. In a semester-long formative interventions, researchers and teachers collaborated to design and implement mathematics-based interdisciplinary curricula. Through the expansive learning process of questioning and analysis, modelling and testing, implementation, reflection, and consolidation, the MTRG was encouraged to reflect on the necessity and feasibility of interdisciplinary teaching and learning and explore and find its suitability for mathematics in practice. The data were analyzed to identify the types and process of MTRG through reflective practice. The findings of this study revealed that reflective practice promoted teachers find the great potential that lies with their students and changed beliefs toward curriculum reform. Additionally, this study found that when researcher collaborate with teachers through formative interventions, it can be more conducive to forming the common knowledge about interdisciplinary teaching and learning for sustainably future. Implications for future research and pedagogical practices are also discussed.

Keywords: interdisciplinary teaching and learning, social sustainability, teacher change

SYMPOSIUM PAPER 2, EXTENDED SUMMARY:

1. Background

Increasingly the acronym Science, Technology, Engineering, Arts, and Mathematics (STEAM) has been associated with high-level policy advocacy across the globe (e.g., OECD, 2019). China is no exception to this, which concern with STEAM participation and performance has driven considerable governmental and media attention. In China, most recently, the Ministry of Education's latest compulsory education curriculum program proposes that 10 percent of class time in each subject should be devoted to interdisciplinary teaching and learning, with the aim of developing students' core competences for social sustainability (MOE, 2022). To advocacy of interdisciplinary curriculum practices built around authentic problems which involve some or all of the subject matters (Tytler, Swanson, & Appelbaum, 2015). This advocacy of interdisciplinary curricula at its core represents a critique of traditional curricula in their capacity to engage students in the critical and creative thinking and working, and the building of dispositions towards subjects learning, that will prepare them for productive futures. In the context of contemporary China, there has several challenges for education institutions to implement interdisciplinary curricula. One of the most urgent issue is the teacher quality, namely, how to promote teachers to identify with the idea of interdisciplinary teaching and learning, master relevant teaching methods and carry out interdisciplinary teaching and learning in actual classrooms is crucial to the success of curriculum reform.

2. Aims

The objective of this paper is unfolding the types and process of teachers change when they conducting interdisciplinary curricula at schools.

3. Methods

This article presents a case study that explored the changing process of one mathematics teaching and research group (MTRG) through interdisciplinary teaching and learning. Cultural-historical activity theoretically based methodology, i.e. the Change Laboratory formative interventions, were used to conduct this study. In a semester-long formative interventions (approx. six months), we researchers and the group of schoolteachers collaborated to design and implement interdisciplinary teaching and learning based on mathematics in a high school. The data collected were videos of normal classes, stimulus interviews, the teachers' lesson plans, videos of interdisciplinary classes, semi-structured interview with both teachers and students. The data were analyzed to identify the content and process of MTRG through reflective practice.

4. Preliminary Findings:

We combined Engestrom's (1987/2015) expansive learning theory and Clarke and Hollingworth's (2002) interconnected model of professional growth (IMPG) as a theoretical and analytical frameworks. Through the expansive learning process of questioning and analysis, modelling and testing, implementation, reflection, and solidification, the MTRG was encouraged to reflect on the necessity and feasibility of interdisciplinary teaching and learning and explore and find interdisciplinary teaching methods suitable for mathematics in practice. The findings of this study revealed that reflective practice promoted teachers find the great potential that lies with their students and changed negative attitude toward curriculum reform. Align with Engestrom (2017), this paper examines five layers of the teachers' expansive learning through developing interdisciplinary teaching and learning, namely (1) bringing elements of societal practices into classroom instruction, (2) understanding the entire school as an activity system and community of learning, (3) pursuing

mathematics-based interdisciplinary learning in activity systems outside the school, (4) co-working with indigenous and other communities as funds of knowledge and alternative epistemologies, and (5) collaborating with social movements as dynamic contexts of activist interdisciplinary teaching and learning for social sustainability.

5. Implications

This study implies that common object-motives often characterize interdisciplinary projects, even though the contributing disciplinary activity systems differ, each with its own distinctive characteristics, tools, and perspectives. Additionally, this study also implies that when university-based researchers collaborate with school teachers through the Change Laboratory formative interventions, it can be more conducive to forming the common knowledge about interdisciplinary teaching and learning for sustainably future. The study invites the readership to imagine interdisciplinary curricula in which schools, families, and the whole societies actively engage in participatory mapping the education for future, bringing about changes toward sustainable partnerships and coalitions for societal transformation.

SYMPOSIUM PAPER 3, SHORT ABSTRACT:

This article explores the development of cross-curricular courses within networks of learning in the harbour city of Keelung, Taiwan, where schooling practices have faced challenges, including industrial changes and school closures. Drawing on the cultural-historical activity theory, the study delves into the transformative potential of learning networks between schools and beyond, with a focus on understanding how these networks contribute to cross-curricular approaches in high school curriculum design.

Through a case study conducted over four months in 2019 and 2022, the research analyses collaboration plans, school applications to programmes, and transcribed interviews involving students, teachers, university professors, language professionals, and museum curators. The preliminary findings reveal that high schools in Keelung have adopted narrative tools such as curricular maps to align with the New Curriculum 2019, collaborating with universities and other institutions. The scenario presents diverse curricula encompass indigenous practices and knowledge to innovative green technology.

Despite the flourishing landscape, the study identifies problems and conflicts encountered in developing learning networks and adopting cross-curricular courses. The implications of the research highlight the need to support local authorities in developing programs to address challenges and innovations in cross-curricular courses. The article also emphasizes the significance of understanding these practices through narratives and reflects on the role of narratives in shaping pedagogical practices and institutional conditions.

Keywords: Motive orientation, narratives, object-oriented networks

SYMPOSIUM PAPER 3, EXTENDED SUMMARY:

1. Background

Cross-curricular courses have been adopted in many school systems and have been used to address important issues such as sustainability. However, the implementation of cross-curricular courses has shown at odds with established local schooling practices (e.g., Dymont, Hill, and Emery, 2015; Kneen, and et. al., 2020).

One approach that has been successful in transforming the conventional schooling is networks of learning between schools and beyond. The scholarship of cultural-historical activity theory has laid the theoretical foundations for transcending school learning (e.g., Engeström, 1991; Miettinen, 1999), and documented experiences along the line (e.g., Yamazumi, 2013, Jóhannsdóttir, 2018).

The article reports on a case study of learning networks developed in the harbour city Keelung in Taiwan. The hilly harbour city has been undergoing industrial change for the last 20 years and has shown risks in several social indicators. In addition, school closures have been an issue in the city due to its limited fiscal capacity and declining population. Despite this, several teachers have sought to develop curricula and teaching profession through collaboration beyond schools. The first documented curriculum collaboration plan between educational institutions in the city was initiated by a high school in 2015. The plan was originally a strategy adopted by the high school in response to a policy intervention that required collaboration beyond schools. Since then, similar practices of collaboration on learning themes and curriculum in the city become proliferating. Many of the networks are run by the high schools in the city to enact cross-curricular courses demanded by the New Curriculum 2019. These networks therefore provide a basis for understanding practices of cross-curricular approach to learning.

2. Aim

The article analyses what of and how networks of learning became constitute to cross-curricular approach in curriculum design in high schools in Keelung city.

3. Methods

The article considers cross-curricular approach to learning as an emerging activity related and oriented by a complex of tools and objects (Miettinen and Paavola, 2018), around which multiple actors dwell and form interagency (Engeström, 2008). The concept of artefacts with different functions provides analytic tools for the study to observe mediation and remediation in emerging activities (Wartofsky, 2012). Informed by recent developments of motive orientation (Munk 2020, Edwards, 2020, Hedegaard, 2017), this article focuses on institutional demands and negotiated orders to explore the efforts of different actors between and beyond institutions. Rather than observing established and practices and isomorphic models of works, the article pays attention to ephemeral collaborative efforts contributed by actors with diversity, and the problems that they have encountered.

The articles analyse data collected in the field study, which was carried out over a total of four months in 2019 and 2022. The dataset includes, 1) plans of collaboration between institution, school applications to policy program; 2) transcribed interviews of actors collaborating in the networks including 7 students and 18 teachers from four high schools, 3 professors from two universities, 1 language professionals from an indigenous tribe university, 2 curators from a museum of marine technology and science.

4. Preliminary result

The preliminary result of analysis inform that all the four high schools have adopted curricular maps to communicate meaningful connections between different curriculum modules required by the New Curriculum 2019. Several curricula of the high schools were collaborated and developed with universities and other institutions. Different actors show their specific contribution to these curriculum maps. Several arrangements to support and coordinates the networks of learning were negotiated and created.

A scenario with diverse curricula and learning directions of the city, ranging from indigenous practices and knowledge to innovative green technology, is presented.

In addition to the flourish landscape, problems and conflicts encountered in developing learning networks and adopting cross-curricular courses are identified.

5. Implications

The article discusses the meanings and possibilities shown in the cross-curricular course developed in the learning networks of the city. The article documents directionalities of pedagogical practices and institutional conditions. On this basis, the article discusses the emerging need to support local authorities to develop their own programmes in response to surging numbers of innovations and problems with cross-curricular courses in learning networks. The article reflects on how to understand practices of cross-curricular courses with stakeholders and reflect on the functions of narratives in practice.

6. Interactions with participants

The author will organise questions to engage other authors and discussant as well as symposium audience.

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601 Reframing formative assessment – a cultural-historical perspective

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Formative assessment equity Cultural-historical perspective

SHORT ABSTRACT

As there is a growing social tendency to seek results in the form of scores in domestic and international evaluations, and at the same time there is a strong demand for individualized instruction, questions have arisen about the relationship and goals of evaluation and inclusion. In Sweden, the renewed interest in formative assessment (FA) came at a time when individualization was a strong pedagogical ideal and results were falling in various inter/national evaluations. This was the context for the re-introduction of the concept FA, an umbrella term for phenomena, such as teacher-to-student feedback and feedforward, peer assessment and feedback to teaching (Lindberg & Eriksson, 2019). The aim of this paper is to problematize the general interpretation of the concept FA and the types of assessment practices that have been developed, using the example of Sweden in particular. Further, a review studies that employ the concept within the cultural-historical tradition is presented as a basis for future development of a conceptual framework for FA as an aspect of teaching-learning. The data for the first part of this paper are extracted from Swedish empirical research on formative assessment. The second part of the paper discusses articles on FA related to FA-practices in the context of cultural-historical traditions.

EXTENDED SUMMARY

Against the **background** of societal trends that increasingly demand results in the form of scores in inter/national evaluations in parallel with a demand for individualised teaching, questions are raised about how assessment can be related to inclusion or to the Swedish aim: 'a school for all'. For many years, formative assessment has been seen as a key idea for solving the paradox of sorting students versus providing equal opportunities for them (Hattie & Timperley, 2007; Mandouit & Hattie, 2023; William, 2010).

Although many in the 1990s perceived formative assessment as a new phenomenon, its roots and origins can be traced back to the 1960s (Lindberg & Eriksson 2019). While a large part of research on formative assessment focuses on how students understand what they need to learn and what they need to do, its early predecessors emphasised how teachers could improve their teaching in order to qualify teaching (Cronbach, 1962; Scriven 1967). Considering this drift, the concept formative assessment today is rather an umbrella concept for quite different phenomena: feedback and feed forward from teachers to students, peer-assessment, and feedback to teaching (Lindberg & Eriksson, 2019).

The renewed interest in formative assessment in Sweden came at a time when individualization was a strong pedagogical ideal and grades were falling in various inter/national evaluations. It is worth

noting that at the time of the emergence of ideas about formative assessment, individualization in terms of providing students with personalised "learning trajectories" had also become a strong ideal (Carlgren, 2011; Carlgren et al. 2006; Eriksson, 2018).

The aim of this paper is to problematize common interpretations of the concept of formative assessment and the kind of assessment practices that have developed, in particular with examples from Sweden. Furthermore, to review research that has reframed the concept within the cultural-historical tradition, as basis for future development of the conceptual frame for formative assessment as an aspect of teaching–learning.

Methods: Data for the first part of this paper is a selection of Swedish empirical studies on formative assessment, specifically 1) the definition and theoretical framing of the concept, 2) the main results and conclusions related to formative assessment. Criteria for selection of studies is that they address these issues. For the second part of the paper, we will review articles on formative assessment that focus on formative assessment practices, related to cultural historical tradition. Qualitative content analysis will be used for the first step in the analysis. Conclusions will be discussed in relation to cultural historical activity theory.

Tentative **results** are related to the organisational level and classroom level. Examples on the *organisational level* concern tensions within and between regulations from national and local authorities in Sweden that on the one hand encourage teachers to use formative assessment, and restrict teachers' time for developmental work on the other. Restrictions concern demands on collective developmental work within ever changing areas. On *classroom level*, many teachers in Sweden seem to have established practices labelled as formative assessment as one of their tools. However, rarely discussed issues are what kind of learning can be promoted with the strategies implemented as formative assessment, mostly as feedback, sometimes also as feed forward and peer assessment. These strategies, in combination with teachers' dominant understanding of 'achieving the goals' as teaching for the pass grade, indicates that the *pass grade* has become teachers' object for teaching. With reference to Englund and Quennerstedt (2008), such interpretations of the curriculum contributes to a *thin* concept of equity, which – in terms of what content is made available for students (often in the form of decontextualized facts) – hardly is experienced as meaningful by students. On the other hand, developmental studies like Learning Studies, do not explicitly use the concept of formative assessment, while actually focusing on what teaching needs to address for students to learn intended learning objects (Hirsh & Lindberg, 2015; Lindberg & Hirsh, 2019).

Conclusions: In a cultural and historical perspective, with references to Vygotsky and followers as Galperin and Davydov, it is difficult to see formative assessment as a tool for enhancing *Bildung* and rich conditions for learning. Formative assessment as a concept and a possible educational tool therefore needs to be broadened and tackle questions such as: What capabilities do students need to develop? In what kinds of practices can they be developed? Which concepts and conceptual relationships do students need to be able to explore? With the help of what kinds of tools? Furthermore, formative assessment needs to be connected with ideas and methods about how teaching can be developed in both short and long term, for example through relations to dynamic assessment (Poehner, 2008), to Engeström's concept formative interventions, or Hirsh (2017), in the context of teaching–learning, as formative teaching.

Interaction with the participants. A presentation of 15–20 minutes is followed by an open discussion.

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602 ONLINE - Forged identities and the radical-transformative agency of migrant-students

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Other CHAT-related topic

Keywords: identity reconstructions radical-transformative agency migrant-learner-university students
identity, migration in university

SHORT ABSTRACT

Migration movements are not a recent phenomenon and are an integral part of human nature. It is known that the reasons why people leave their countries of origin are diverse, such as political and religious persecution, wars, natural disasters, and the search for better living conditions, whether through employment or formal and/or higher education. This latter factor highlights the scope of the present investigation, as the three participants in question—here identified as migrant-learner-university students – are students from countries in the African continent, exchange students at a higher education institution in Brazil. Based on Socio-Historical-Cultural Theory (VYGOTSKY, 1998, 2007), through the case study approach (DÖRNEY, 2007; PAIVA, 2019), this research aims to identify how the processes of identity reconstruction (BAKHTIN, 1979, 2018; HALL, 1992, 2020) and the development of radical-transformative agency (STETSENKO, 2023) of these migrant students occur, intersected, and immersed in discourse (BAKHTIN, 2003; WEEDON, 1997), as they navigate through and envision different communities of practice which they access and/or aim to access while situated in the foreign country. Preliminary data from the initial interviews conducted indicate identity reconstructions of these students in an environment of fruitful cultural and linguistic exchange, such as the university setting. These transformations were observed primarily during the first year of living in Brazil and during the process of learning the Portuguese language and Brazilian culture.

Keywords: identity reconstructions, radical-transformative agency, migrant-learner-university students.

EXTENDED SUMMARY

Migration movements are not a recent phenomenon and, driven by various motivations, have been part of human history. Indeed, the ability to move and adapt is vital for our survival and development. In contemporary times, the report produced and published in 2021 by UNHCR, titled "Global Trends", highlights a new record in the number of global displacements of people, reinforcing that migrant flows worldwide are rapidly expanding and likely to increase. It is known that the reasons why these individuals leave their countries of origin are diverse, including political and religious persecution, wars, natural and economic disasters. These reasons are inherently linked by the pursuit of better living conditions, whether through employment or access to formal and/or higher education (CHARLEAUX, 2022). In the educational realm, international student mobility programs, promoted by governments or higher education institutions, can contribute to the process

of social transformation and identity reconstruction of participating individuals. In the outlined panorama, discussing higher education in the migratory context is urgent and necessary for recognizing an important transformative process for both individuals and the university itself (MIRANDA; FOSSATI, 2020). Based on the principles of Socio-Historical-Cultural Theory (VYGOTSKY, 1998, 2007), through the case study approach (DÖRNEY, 2007; PAIVA, 2019), this research aims to identify how the processes of identity reconstructions (BAKHTIN, 1979, 2018; HALL, 1992, 2020) and the development of radical-transformative agency (STETSENKO, 2023) of these migrant students occur, intersected and immersed in discourse (BAKHTIN, 2003; WEEDON, 1997), as they navigate through and envision different communities of practice which they access and/or aim to access (WENGER, 1998) as they engage with the culture of the "other". In this context, an investigation is carried out with three foreign students participating in the Undergraduate Student Agreement Program (PEC-G) at the Federal University of Rio de Janeiro (UFRJ), who, given their migratory characteristics, were designated in our study as migrant-learner-university students. It is worth noting that the program offers higher education opportunities to citizens of developing countries with which Brazil maintains educational and cultural agreements, in addition to promoting interculturality, social inclusion, and academic integration of these students (MINISTRY OF EDUCATION, n.d.). Regarding methodological procedures, the instruments employed for data generation during the elaboration of the case study are written and oral interviews, and the researcher's diary, with the purpose of making notes on her own interpretations of the data throughout the investigation, analysis, and triangulation process (DENZIN; LINCOLN, 2006). Preliminary data from the initial interviews conducted indicate identity reconstructions of these students in an environment of fruitful cultural and linguistic exchange such as the university. These transformations can be observed primarily during the process of learning the Portuguese language and Brazilian culture.

Keywords: identity reconstructions, radical-transformative agency, higher education, migrant-learner-university students.

The interactions with participants are planned to happen through a digital presentation (PowerPoint) with some questions to the audience and then an open discussion towards the end.

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603 Decolonial perspectives in additional language teaching: analyses of didactics materials

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Meaningful education

Keywords: Decoloniality Additional Language Didactic Materials

SHORT ABSTRACT

In the field of additional language teaching in Brazil imbued by colonial perspectives that affirm social segregation, exclude and silence underprivileged voices, and shape consciousness to maintain social inequalities sponsored by colonizing mechanisms that produce and normalize the exclusion of others, we drive ourselves to constant reflections about our critical-reflective role in the field of additional language teaching and its fundamental transformative contributions to the development of contemporary learners. Based on Decolonial studies (WALSH, 2019; SANTOS, 2021; PENNYCOOK; MAKONI, 2020), Sociocultural-historical Theory (VYGOTSKY, 2001 [1934], 2004 [1968], 2009 [1934]), Applied Linguistics of Resistance (TANZI NETO, 2021), Necropolitics (Mbembe, 2011) and Necroeducation (LIBERALI, 2021) the objective of this paper is to discuss and problematize the colonial aspects present in didactic materials of three additional languages in Brazil: English, Spanish e Portuguese and its possible reflections in the classroom. The methodological basis is the Content Analysis (CARDOSO, OLIVEIRA, GHELLI, 2021), as it seeks to understand the senses and meanings present in different forms of communication. In this direction our preliminary data shows that and all material analyzed shows dominant patterns of colonialism, and they are failing to fight against some forms of local oppression such as racism, feminism, and do not deem the sociocultural diversity of Brazil. Therefore, the contemporary didactics materials must include marginalized voices as well as different local perspectives to recognize and confront the privileges and hierarchies of society.

EXTENDED SUMMARY

When thinking about second language education, it is necessary to understand how teaching-learning processes take place to preserve the colonialism of power and knowledge. The first, both capitalism and modernity organize the distinct power positions of subjects and organized (and still organize) colonial differences based on ethno-raciality (MIGNOLO, 2005). The latter boosted the dualistic character and excluded hybridity, multiplicity, ambiguity, and contingencies of concrete forms of life, that is, in the name of capital, it generated a subject profile that met the demands of production: white, male, married, heterosexual, disciplined, hard-working, self-possessed and suppressed “the other”: crazy, the Indian, the black, the maladapted, the prisoner, the homosexual, the indigent

(CASTRO-GÓMEZ, 2005) erasing differences. Add to that that we live in a country, Brazil, where necropolitics (MBEMBE, 202; GEFAELL, 2015)¹ and necroeducation (LIBERALI, 2021) act through the hands of governments under the slogan of social well-being, promoting the intense commodification of services and goods public and give the private sector the power to manipulate the State, destroy bodies and make others invisible, to maintain their own interests. These conceptions, when brought together, maintain certain similarities when thinking about issues involving teaching-learning materials of second language This is because the hegemonic Eurocentric thinking of the Global North still reigns today about who we are and what we do when we produce and consume knowledge. Mignolo (2005) argues that in the configuration of modernity in Europe and coloniality in the rest of the world, a hegemonic image sustained by the coloniality of power persists, where the control of resources, capital, and knowledge determines when, how, and what we should know. In addition, once a correlation between subject and object is postulated, it becomes, in principle, unthinkable to accept the idea of a knowing subject being possible beyond the subject of knowledge erected by modern epistemology (QUIJANO, 1992). As a way of disturbing, of breaking with this epistemology, it is necessary to review how knowledge is constructed and on the concepts that are considered unique and absolute truths. To this end, Walsh (2013) proposes the adoption of other pedagogies that carry out critical readings of the world, intervention to reinvent society, and, in this direction, decoloniality acts in the radical reconstruction of being and requests “pedagogical attitudes of resistance, insurgency and of rebellion that provoke cracks and collapses in the modern/colonial order while directing hopes, horizons and 'other' projects” (WALSH, 2013, p. 32). Furthermore, decoloniality must be signified and given substance, meaning, and form to transgress, intervene, rebel, activate, and build other paths (Walsh, 2018). Insurgent decoloniality develops and advances from the margins, from other imaginaries, visions, knowledge, ways of thinking, and other ways of being and living. For the author, being insurgent decolonial denotes the act-action of creation, of proactive roles in deconstruction, in the intervention and affirmation that intends to interpenetrate and transgress, not only the social, cultural and political terrains but also, and more importantly, the arena intellectual (WALSH, 2018). In this context and affiliated with Applied Linguistics and Decolonial Studies, we argue that second language teaching and the production of teaching materials must be based on a praxis in which the act-action of creation, of Resistance, is considered (TANZI NETO, 2021), in which the experiences, other voices of the excluded, in which the knowledge, cultures, experiences and productions of those outside the global North are understood and recognized. It can no longer be accepted that the production of teaching material materializes and preserves the colonialism of power and knowledge. It is in the cracks, in the fissures that knowledge is constructed with a view to insurgent decoloniality (WALSH 2020) so that the teaching-learning processes go beyond doing for the sake of doing, the simple instrument of individual survival and can be considered as an act of transgression (HOOKS, 2013). This research is ongoing, but analyzing some materials, we already realized that they are still deep in dominant patterns of colonialism, and they are failing to fight against some forms of oppression such as racism, and feminism, and do not deem the sociocultural diversity of Brazil. Therefore, contemporary didactic materials must include marginalized voices as well as local perspectives to recognize and confront the privileges and hierarchies of society.

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605 Transformative Physics Education: Understanding and Addressing Natural Disasters in Brazil

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with inequality

Keywords: Physics Education Critical Pedagogy Social Transformation Activity Theory

SHORT ABSTRACT

In this work, Freirean methodology and socio-historical-cultural psychology were employed to develop and implement a didactic sequence in a Physics course in the Integrated High School of a Federal school in São Paulo. Instead of approaching this subject in a traditional way, it was contextualized within the problems of landslides that occurred in early 2023 on the coast of São Paulo, a disaster that gained widespread national attention. In the aftermath of the tragedy, the federal, state, and municipal governments were mobilized. The question posed was: Is it possible to make physics concepts mediators for the natural disasters that affect Brazil? The methodology used was based on the concepts of thematic universe and generative themes, where the students' context informs the choice of pedagogical content through critical teaching. Four classes of one and a half hours each were given, documented through photos and videos, along with field notes taken by the teacher. After these classes, a questionnaire was administered to the students regarding certain aspects of problematization and the dynamics of the classes. Upon analyzing the data, it was found that the students wanted to understand the issue of landslides, appropriating physics concepts throughout the classes to explain why this phenomenon occurred in that region and why there were so many victims. In the process, the students created and tested hypotheses, refining their model through dialogue among themselves and with the teacher.

EXTENDED SUMMARY

Physics education in most schools is focused on teaching content; thus, the object of its activity is the physics concepts developed throughout history, mainly related to technological advancements. Therefore, the physics class activity ends up being an end in itself. This movement causes the physics class to become detached from social events. Hence, the objective of the work was to reverse this purpose of the activity, placing physics concepts as mediators of the activity. Thus, the goal was to understand a relevant social contradiction, seeking its radical transformation in the long term. The question posed was: Can physics concepts become mediators for the natural disasters that affect Brazil? This research was grounded in the Theory of Historical-Social-Cultural Activity and in Paulo Freire's critical pedagogy, which teaches us to problematize and contextualize teaching based on the reality of the subjects involved, turning the social problem into a collective problem where individuals seek to understand it to propose transformations. The THSC is essential for understanding social dynamics, how human needs are objectified in the object of the activity; therefore, changing an object to be understood as an instrument of an activity is a fundamental part of the work, as this

clarity entirely modifies the dynamics of the physics class as an activity. The two main theoretical references were FREIRE (2016) and VYGOTSKY (2008), the former outlining teacher-student mediations for problematization and the latter the mediated relationships between subject-object or human-world, where contradictions are the dynamics of human activities, and the mediating instruments are the syntheses of this complex mediation. The methodology used was based on the concepts of thematic universe and generative themes by FREIRE (2016), where the students' context informs the choice of pedagogical content through critical teaching. With this methodology, four classes of one and a half hours each were developed for high school students, documented through photos and videos, along with field notes taken by the teacher. Throughout the classes, the theme was investigated, with a contextualization of the problem, and then the individuals created a model to understand what had happened. After these classes, a questionnaire was administered to the students regarding certain aspects of problematization and the dynamics of the classes, so that we could identify the mediating instruments of the activity in this physics class and prove that the object was effectively modified from physics concepts of motion to landslides. Upon analyzing the data, it was found that the students wanted to understand the issue of landslides, appropriating physics concepts throughout the classes to explain why this phenomenon occurred in that region and why there were so many victims. One of the main conclusions was the generated contradiction that it is impossible to predict landslides; thus, there is no physical or technological solution to warn people in time that a disaster will occur, allowing them to escape. Therefore, they realized that people should not live in these regions, in addition to the social contradiction of the region that was affected since the victims were from the lower socio-economic side. In the process, the students created and tested hypotheses, refining their model through dialogue among themselves and with the teacher, a fundamental mediating instrument to approach the object.

References: FREIRE, P. *Pedagogia do oprimido*. Rio de Janeiro: Paz e Terra (2016) VIGOTSKI, L S. *A construção do Pensamento e da linguagem*. Martins Fontes (2008)

609 Activity Coalitions and Change Laboratory: Improving workers' well-being at a University Hospital

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Activity Coalitions Change Laboratory Learning Actions

SHORT ABSTRACT

The aim of this paper is to analyze the coalition of heterogeneous activities in a Change Laboratory, a formative intervention method based on Cultural-Historical, Activity-Theory, at a University Hospital to promote well-being and working accidents prevention. The sessions were mainly inspired by the Expansive Learning (EL) cycle, which includes seven actions (Engeström, 1987). The University Hospital of the Federal University of São Carlos is a public university hospital, managed by the Brazilian Company of Hospital Services (Ebserh). Three CL-groups (G1, G2 and G3) with a total of 30 participants were carried out simultaneously: G1=14 frontline health workers (operational ; lower level); G2=11 health managers (middle level of management); G3=5 directors (top level management). All sessions were video-recorded (totalizing 88 hours) and transcribed for content analysis. The longitudinal study is ongoing (actions 5-6 follow-up). We went through the first three EL-actions in 27 sessions using double-stimulation and remediation of collective activities considering the shared object of prevention and previously identified contradictions. For action four, seventeen integrated sessions with all participants were carried out (different levels working together). Throughout the CL-session participants were able to identify the shared object of the activity coalitions at the hospital in the three levels. The formative intervention required the engagement of frontline workers, middle and top levels of management, from the hospital's different activities, requiring them to act collaboratively towards the changes to be implemented.

EXTENDED SUMMARY

Engeström & Sannino (2020) state that heterogenous work coalitions aim at resolving wicked societal problems, runaway objects, and creating sustainable alternatives to capitalism. Concerning formative interventions, specially shaped as Change Laboratory, they need to be negotiated and aligned with interventions or intraventions, exchanging with efforts from inside (Sannino et al., 2016). Besides, it enables an *expansive reconceptualization of the object of activity* (Virkkunen & Newnham, 2015, p. 56), with changes that involve specific and gradual improvements in long term, involving learning actions through the expansive learning cycles (Virkkunen & Newnham, 2015).

However, sometimes interventions stop or are interrupted before reaching the implementation and new model consolidation phases, which generate the challenge of durability and sustainability of new solutions. Besides, Change Laboratories have been conducted in a unique activity system or considering a network of two activity systems, which can lead to encapsulation and decreasing of the impact of the formative intervention (Bal et al., 2018; Vilela et al., 2020).

In some Change Laboratories, the local bottom up or top down changing efforts resulted in solutions that conflicted with practices, priorities or power constellations in the organizational contexts, leading to stagnated implementation and faded away solutions (Engeström, 2008; Vilela et al., 2020) Sannino & Engeström (2017) and Vilela et al. (2020) state that Change Laboratories need to face such challenges considering that unique, multiple, successive, parallel and interconnected expansive cycles need to be promoted and analyzed. Besides, formative interventions need to involve different actors, decision makers and stakeholders from different levels and layers in the field.

Therefore, the aim of this paper is to analyze the coalition of heterogeneous activities in a Change Laboratory at a University Hospital to promote well-being and working accidents prevention.

Promoting a collaborative construction of new models and solutions for hospital' organization in the three institutional levels (micro, meso and macro) from workers' expansive learning.

The University Hospital of the Federal University of São Carlos is a public university hospital, managed by the Brazilian Company of Hospital Services (Ebserh). It is considered a field of research and innovation, receiving more than 600 students per year and counts on 530 staff members. In addition to training professionals, the hospital provides health care, being inserted in the regional health care network, serving exclusively patients of the Unified Health System (SUS). In addition, the hospital is a reference in a region comprising 24 cities (Yamashita et al., 2024).

The Expansive Learning (EL) cycle includes seven actions, that are (i) questioning the reality, (ii) historical and empirical-actual analysis, (iii) modelling systemic causes of the problem and new solutions, (iv) examining the new model, (v) implementing the new model, (vi) reflection on the process and (vii) consolidating the new practice (Engeström, 1987).

Three CL-groups (G1, G2 and G3) with a total of 30 participants were carried out simultaneously: G1=14 frontline health workers (operational ; lower level); G2=11 health managers (middle level of management); G3=5 directors (top level management). We went through the first three EL-actions in 27 sessions using double-stimulation and remediation of collective activities considering the shared object of prevention and previously identified contradictions. For action four, seventeen integrated sessions with all participants were carried out (different levels working together). All sessions were video-recorded (totalizing 88 hours) and transcribed for content analysis. This longitudinal study is Throughout the CL-session participants were able to identify the shared object of the activity coalitions at the hospital in the three levels: high quality healthcare, human resources management and training. Primary and secondary contradictions were identified among different elements of the multiple activity systems, which manifested undesirable results from workers health and well-being. In general, those contradictions were related to work organization features, mainly regarding miscommunication, lack of autonomy, low workers participation in decision-making and high workload. To overcome these contradictions, participants from different levels, professions and services worked together to remodelling the various activity systems, achieving 14 macro-solutions and 34 actions These macro-solutions were reorganized into 7 leaderships and 40 projects (4 strategic, 22 tactical, and 14 operational) for the improvement of the organization, environment, and

work processes. Currently, we are in the follow-up sessions to reflect on work transformation and analyze advances and persistent challenges.

Conclusion

This formative intervention required the engagement of frontline workers, middle and top levels of management, from the hospital's different activities, requiring them to act collaboratively towards the changes to be implemented.

Therefore, the Change Laboratory proved to be an important and relevant methodological tool in the collaborative construction of solutions among the three hierarchical levels of the hospital, considering the contradictions identified in the activity coalitions, with the active voice and participation of frontline workers. Participatory work management, listening to workers at different hierarchical levels, achieves collective and durable solutions in organizations and work processes, respecting health, safety and well-being at work.

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612 ONLINE - Mobral: memories, experiences and contradictions

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Bringing together theory and practice

Keywords: contradiction memory meanings

SHORT ABSTRACT

This investigative work aims at finding and interviewing the subjects that participated as teachers and supervisors in the Adult Literacy Movement, Mobral. As an adult literacy program that was developed and sponsored by the Brazilian dictatorship, between 1970-1985, it urges for a detailed analysis. The dictatorship was a period marked by government repression, persecution, censorship, and other atrocities against those who did not support the coup d'état. Still, one of the goals established by the military government was the eradication of illiteracy through a national project, the Mobral. Biased researches have contributed to classify this movement simply as successful or as a failure. This research aims to implode with those biased conceptions of the Mobral, anchored on the category of contradiction and on the interpellation – through interviews- of the historical agents that experienced the movement - in order to comprehend how these historical agents signified the Mobral and their experience. This implies the possibility of reviving meanings that have been ignored and silenced. The interviews, supported mainly by the theoretical and methodological contributions of Oral History and on the Cultural-Historical Theory of human development - using the concepts of memory and the social historical formation of the mind - showed that an authoritarian period have fissures, spaces created to repress, but that are occupied by those who signify it in a distinct manner. The investigation wants to scrutinize those different meanings and how they emerge.

616 ONLINE - Collaborative activist inquiry with college students with learning differences

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Transformative Activist Stance learning differences college students

SHORT ABSTRACT

There has been a growing interest in studying the learning experiences of US college students with learning differences (LD) in order to support their transition to and success in higher education. While this scholarship offers insights into students' positive and negative experiences, issues of accessibility, and attitudes towards disability, it often focuses on individualized notions of learner and learning or neglects conceptualizing learning altogether.

The presented project aims to address such conceptual gaps and critically examine the learning experiences of community college students with LD from a combination of critical disability studies and the Transformative Activist Stance (TAS)-extended CHAT perspective. Community college students with LD who participated in the project engaged in a *collaborative activist inquiry* as they examined common and their own views of learning, development, and disability while applying conceptual tools (theoretical perspectives) to discern empowering or disabling practices and voicing and forming their own agentic social positioning. Those served as the basis for articulating recommendations to improve institutional practices for LD students.

The presentation will also include reflections on a *collaborative activist inquiry* as an emancipatory and transformative research method, a tool for institutional change, and its potential as a research and pedagogical approach to support students with LD, a group traditionally excluded from higher education and scholarship.

EXTENDED SUMMARY

Legal protections and inclusive reforms in the US have led to increased enrolment of students with learning differences (LD) in higher education. However, their retention and graduation rates still fall behind neurotypical peers. To better support these students, scholars increasingly study students' college experiences, offering insights into accessibility issues, and attitudes towards disability, yet often neglect conceptualizing learning. Alternatively, they overwhelmingly rely on traditional views that posit learning as an individual process disconnected from institutional practices and their cultural tools. For instance, analyses of how traditional notions of learning might perpetuate disabling institutional practices and disempower students with LD are rare in the literature. Consequently, efforts to facilitate students' learning and educational success focus primarily on individual solutions, such as providing individualized accommodations and promoting students' self-advocacy and self-determination to achieve self-sufficiency and independence. However, insights from CHAT about the social nature of learning, including my research, strongly support a shift from the notion of learners'

independence toward focusing on *interdependence* and relationality to foster agency at the individual and collective nexus when designing education for diverse learners.

The overarching goal of the presented project is to address such conceptual gaps and critically examine the learning experiences of students with LD from a combination of critical disability studies (CDS) with Vygotskian cultural-historical activity theory (CHAT) and its recent expansion into the Transformative Activist Stance (TAS) by Stetsenko, which posits learning as the central process that leads development by providing collaborative and dialogical spaces for learners to appropriate and co-construct efficient cultural tools. Following TAS, I approach learning-teaching as a process of accessing, co-constructing, and authoring tools of agency and identity development (e.g., theoretical concepts), which enable learners to position themselves vis-à-vis historically evolving contradictions in social practices while developing their views on how those ought to be changed.

This qualitative study engaged eight students who self-identified as individuals with LD enrolled in an urban community college. They participated to varying degrees across the three stages of the project: Small (2-3 students) *focus groups* in which narratives about students' learning trajectories, experiences, and struggles were collected and served as informative sources of their lived experiences.

The emerging themes from the focus groups were followed-up with individual *interviews* with students about their learning experiences at college.

Finally, five students participated in a nine-session *collaborative activist inquiry (CAI)*, designed on the principles of TAS and critical-theoretical pedagogy. This pedagogical model, which created a context for participant observations, presents knowledge to students as embedded in sociocultural practices, made accessible through interrogation and active exploration by learners, and critically reliant upon learners' own stances and future-oriented pursuits. Specifically, participating students explored learning, development, and disability and their dynamic relationships in several steps: (1) Through collective reflection and inquiry, the group collectively interrogated their own and common views about disability, learning and knowledge, and human mind and development. After identifying underlying assumptions, we explored their relevance to students' own lives and experiences. (2) Students were introduced to critical perspectives on learning, development, and disability, such as CHAT, TAS, and CDS, as conceptual tools through which to explore gaps and contradictions in traditional conceptions and theories while situating those assumptions within academic and social debates regarding the nature and dynamic relations among those processes. (3) Finally, students had a chance to reflect on how this critical-theoretical knowledge (CHAT/TAS and CDS perspectives) might relate to their own experiences in college. While actively participating and contributing to the collective inquiry, students had the opportunity to voice and form their own agentic social positioning, which served as the basis for articulating recommendations for students with LD, faculty, and the institution. This was negotiated as the objective of the inquiry to create a meaningful context and legitimate audience to motivate their exploration.

This emancipatory methodology provided a context to explore and uncover underlying sources and intricacies of students' struggles with learning.

Students' active engagement in the inquiry revealed their (sometimes conflicting) conceptions of learning, development, and disability. It also facilitated changes in their understanding of these processes, their ways of engagement in learning, positioning within learning activities and college, and their self-development.

The CAI also serves as a model for developing a workshop for students with LD.

The recommendations and significant findings generated collectively will form the foundation for a faculty PD seminar, and recommendations for the institution to challenge ableism and promote inclusion of diverse students.

I will share reflections on CAI as an emancipatory and transformative research method and a tool for institutional change; explore the potential contribution of CAI as a research and pedagogical approach to support students with LD, a group traditionally excluded from higher education and scholarship.

One-third of the presentation time will be allotted for discussion. Should there be no inquiries from the audience, questions and prompts will be provided to stimulate discussion.

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617 ONLINE - "Sailing": a poetic-critical expedition

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Imagining future worlds

Keywords: Creativity Imagination Theater

SHORT ABSTRACT

The present work, currently in progress, aims to analyze the staging of the theatrical performance "Sailing" (in Portuguese, "Navegar", by Esparrama Group), held in the city of São Paulo in 2018. Considering theater as a significant practice for the development of human creative activity, this study seeks to understand how Grupo Esparrama's process of imagination and creation is constituted, based on historical-cultural perspective from Lev S. Vygotsky and inspired by the poetry of Manoel de Barros. In this sense, our aim is to analyze how the group's creative activity and its ramifications can inspire a sensitive and critical approach to education for children, through art, and specifically in this study, through theater. The proposal involves the analysis of records documenting the performance, such as videos, photographs, drawings, printed publications, as well as the conducting of individual and group interviews with members of Esparrama Group, artists, and professionals directly involved in the performance creation. This collaborative approach between the group, children, multidisciplinary artists, educators, and the city reflects the group's pursuit of connecting art, education, and territory, transforming urban space, in a sensitive and participatory way. "Sailing" seems to produce a feeling in all these agents connected to listening to their own feelings, confronting their imaginaries, and having their expressions recognized.

EXTENDED SUMMARY

Background

By analyzing the staging of the play "Sailing" ("Navegar", in Portuguese) by Esparrama, a children's theater group from São Paulo, held in 2018 (Souza, A. C.; Conceição, L; Barbalacco, R. 2019), we seek to understand how the creative activity from the group was constituted (Ceravolo, G. P.; Braga, E. S., 2021) in the process of staging an outdoor performance for children, from the window of an apartment, located in front of an important viaduct in the city, which has been converted into a leisure place at weekends. The aim is to contribute to a broader understanding of imagination, creation, and creativity. Instead of considering creative activity as an innate attribute, as commonly idealized in social imagination, our paper seeks to unveil this process from the historical-cultural perspective of Lev S. Vygotsky (1999, 2018) in dialogue ¹ with the poetry of Brazilian author Manoel de Barros. Through this analysis, we believe it is possible to explore how this process can inspire a meaningful, sensitive, critical, and reflective educational practice for children through art and imagination (Schlindwein, L, 2015). The historical-cultural theory of Lev S. Vygotsky, discussed by contemporary authors, in dialogue with the poetry of Manoel de Barros, will serve as theoretical references for analyzing the collected data regarding the staging of the play "Navegar." This allows for

an examination of the historical construction in which human development processes can be observed through mediated interaction, as well as from the poetic, sensitive, and imaginative perspective of Manoel de Barros, giving rise to the idea of a poetic-critical expedition.

Aims

The general objective is to analyze, through a dialogue between the historical-cultural approach of Lev S. Vygotsky and the poetics of Manoel de Barros, how the creative activity of Esparrama Group, in the staging of the play "Sailing" and its ramifications can contribute to the construction of a critical approach to education for children through art. The specific objectives are: a) understanding Esparrama's views/conceptualizations of childhood, art, and the city; b) investigating the educational background of Esparrama Group's members and their concern for childhood; c) understanding how the creative process developed by Esparrama allows the construction of alternative ways of observing and narrating reality, through the group's records; d) understanding how the work on listening children carried out by Esparrama Group enables/triggers an objective/subjective production of reality; e) proposing a dialogue between the concept of imagination from Esparrama's work, the historical-cultural approach, and poet Manoel de Barros; f) analyzing how the artistic work by Esparrama Group confronts formal education, potentially inspiring an educational approach with children.

Methods

For this qualitative study, we chose two methods of data production: documentary research and interviews. Documentary research aims to gather a wide range of materials, including the researcher's own work and records made and archived by Esparrama Group, such as diaries, notes, photographs, videos, audios, drawings, among others. The choice of documentary analysis as an exploratory technique is justified by the fact that the analyzed play is no longer in exhibition, making it essential to consult all documentation generated during its realization. Interviews with the group's director, actors, and individuals directly involved in the creation and production of the performance will allow interaction between the researcher and the group, using semi-structured scripts. After conducting the fieldwork with the chosen instruments, the next steps involve selecting and interpreting the produced materials, organizing and categorizing them, establishing connections and relationships that enable the proposal of new explanations and interpretations for the observed processes. This will include discussions of the implications for educational practice and the contribution that the process brings to the expansion of literature on the subject.

Partial Results

The study is currently conducting interviews and analyzing documentary research, along with a literature review on the work of the poet Manoel de Barros. At this stage, it is possible to say that the development process of the performance involved a participatory methodology where children were actively listened to and engaged in the creation process. The collaboration of the pedagogue Laila Sala and the presence of other artists in the documentation team - a poet, a photographer, and an illustrator - highlighted the importance of multidisciplinary relationships in art and education. Additionally, the emphasis on creating educational materials and contents demonstrates Esparrama's commitment to extending the educational impact of the performance beyond presentations, integrating into the school environment and fostering ongoing dialogue with the community. This sensitive and collaborative approach reflects the group's commitment to connecting art, education, and territory, emphasizing the active participation of children and the community in the artistic and

educational process and the transformation of urban space into places where imagination can emerge.

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619 Exploring contextual factors shaping EAL students' mathematics learning with instructional videos

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Sociocultural theory instructional video EAL Sociocultural theory

SHORT ABSTRACT

This qualitative study investigates how contextual factors shape mathematics learning with instructional videos of English as an Additional Language learners, focusing on their experience and the mediating role of video design. Ten native Chinese-speaking participants from both undergraduate and graduate mathematics courses at an Australian university were interviewed, and they were also invited to watch their self-selected mathematics lecture recordings for the researcher's observation. Underpinned by a combined conceptual framework of Vygotsky's sociocultural theory and cognitive theory of multimedia learning, findings reveal learners' diverse reliance on their mother tongue/first language (L1) in learning mathematics through English (L2) instructional videos. While some undergraduate learners preferred to memorize unfamiliar mathematics terms directly in L2, graduate mathematics learners compared terminologies in both languages to better understand their meanings. Bilingual subtitles are hence proposed as an effective tool to support translanguaging learning, expanding learners' Zone of Proximal Development (ZPD) and deepening subject comprehension. Other strategies such as highlighting L2 terms within subtitles are also suggested to cater to learners' preferences. This study underscores the fluidity of 'first language' definitions and highlights the importance of flexible video designs that accommodate translanguaging practices used in Content and Language Integrated Learning (CLIL). These findings contribute to a deeper understanding of EAL learners' needs and offer insights into enhancing their mathematics learning experiences with instructional videos.

EXTENDED SUMMARY

Background

Growing evidence has shown that learning mathematics with instructional videos is a challenging task for students who speak English as an Additional Language (Greer, Cathcart, & Neale, 2016). While much of the existing research on video learning is media-centred, emphasizing design principles and their effectiveness informed by the Cognitive Theory of Multimedia Learning (CTML) (Mayer, 2014), there's a growing need for more student-centred investigations that prioritize the actual learning process and experience especially for EAL learners. Given the extensive documentation of English as the medium of instruction for mathematics in the Content and Language Integrated Learning (CLIL) research domain, this study has adopted Vygotsky's (1978) sociocultural theory, especially mediation by tools and artefacts and genetic method—a fundamental principle commonly underpinning CLIL—combined with CTML to explore how contextual factors shape this learning process. While CTML

offers insights into information processing during the microgenetic event of mathematics learning with videos, the concept of mediation reveals how video designs, as mediating artefacts, could shift EAL learners' Zone of Proximal Development (ZPD), influenced by their languages and cultural backgrounds.

Aims

The present study aims to explore how contextual factors influence EAL learners' mathematics learning through instructional videos and examine the role of video design in mediating this process.

Methods

In this qualitative study, ten participants from undergraduate and graduate mathematics courses at an Australian university were recruited. All participants, native Chinese speakers, regularly used lecture recordings as a learning tool in their mathematics studies.

Employing a case study design, the data collection process was structured into three sessions per participant, generating approximately four hours of data from each. The initial session served as a background interview to gather insights into the participants' educational histories, personal background, and prior experiences with instructional videos. The subsequent two sessions focused on engaging participants with instructional videos, followed by video-stimulated recall and semi-structured interviews.

A reflexive thematic analysis, underpinned by the conceptual framework which encompassed both the sociocultural theory (Vygotsky, 1978) and CTML (Mayer, 2014), was employed to identify key themes across the participants' experiences.

Findings

The findings reveal that EAL learners, during their transition to fully adapt to English as the medium of instruction, exhibit varying degrees of reliance on their mother tongue/ first language (L1) for different types of learning. For example, EAL learners reported memorizing unfamiliar math-specific terms directly in English (their L2), even though they checked the names in Chinese for confirmation. A few undergraduate participants, such as Renjia, stated that these English terms “effectively became her first language”, as she had not learned their counterparts in her mother tongue. Renjia clarified her decision to memorize terms in L2 was driven by their frequent use in her studies, noting it was more efficient and avoided the need for translation and code-switching. Interestingly, other graduate participants, Shuangyi for instance, who indicated a higher level of familiarity with subject-specific terms in mathematics, claimed that comparing names in both languages helped him “to determine which name aligns more closely with its intended meaning”.

According to authors (2023), video design which incorporates bilingual subtitles could be powerful in supporting translanguaging approaches adopted by EAL learners in this context. Thus, bilingual subtitles could expand learners' ZPD through providing immediate access to content and leveraging their prior knowledge in both L1 and L2. This approach facilitates a deeper, more nuanced comprehension of the subject matter by reducing the language barrier inherent in CLIL.

The observed phenomenon of learners memorizing terms in L2 also informs other subtitle design strategies. For learners like Renjia, who prefer learning specific terms in L2, an option could be to highlight or segment these terms within bilingual subtitles, or to keep such terms in L2 within L1 subtitles. Nonetheless, this phenomenon raises an interesting question of how 'first language' should be defined in the CLIL context. Should it refer to the learner's mother tongue or the language in which they were first introduced to the concept/content?

Furthermore, several participants mentioned translating the term's definition or conceptual explanation into their L1 to facilitate meaning-making. Renjia emphasized that translation was crucial for a more precise comprehension of the content, while Shuangyi delved deeper, discussing how one's culture and language act as 'boxes' that shape their thought processes.

Conclusion

The findings underscore the diverse linguistic strategies EAL learners employ in CLIL contexts, from memorizing terms in L2 to translating concepts into L1, highlighting the fluidity of 'first language' definitions. Therefore, incorporating bilingual subtitles in video designs emerges as a useful support mechanism, expanding the ZPD by leveraging prior knowledge across languages and facilitating deeper understanding. Moreover, the present study contributes theoretically by introducing a conceptual framework based on CLIL, CTML, and sociocultural theory, thereby offering insights into enhancing translanguaging practices with video designs which are influenced by contextual factors.

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620 Changing boundary crossing patient care without an interventionist: do they learn expansively?

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Bringing together theory and practice

Keywords: multivoicedness embracing contradictions expansive learning

SHORT ABSTRACT

To prevent the fragmentation of chronic care across organisational boundaries, healthcare professionals need to build shared knowledge about their work. When they discuss and create a collaborative care pathway, we explore whether expansive learning occurs. Although this is not a guided change lab intervention, we are exploring their collaborative learning and changing care. Method: Single case study without a researcher interventionist. We explored the “who” and “how” of facilitating expansive learning in changing a Collaborative Patient Care Agreement (CPCA) by studying professionals negotiating responsibilities in four meetings. Also we explored the involved and missing perspectives during the meetings. CHAT and expansive learning theory was used to analyze coded transcripts of the discourse. The coded transcripts we triangulated with the drafts and final CPCA to gain insight into the new steps created in the care trajectory.

Results:

Healthcare professionals from different organisations collaborate to deliver and transform patient care across boundaries. Contradictions emerge in the discussion of patient care. The need for the perspectives of other professionals and patients was different at each stage, depending on whether the negotiations were about revising existing responsibilities or establishing new ones. Our analysis showed that this difference was related to the presence or absence of relevant perspectives from some professionals and patients.

As researchers, we identified more contradictions than the professionals. When contradictions became explicit, expansive learning began. Naming problems, sharing perspectives and creating models to resolve contradictions enabled the professionals to facilitate their expansive learning and create their new patient care trajectory.

EXTENDED SUMMARY

Patients receiving care simultaneously from both the primary care and secondary care settings need health care providers who collaborate and coordinate their care. The increasing number of patients with chronic diseases and multimorbidity who move between their different healthcare providers

makes this collaboration even more urgent. The increasing involvement of other professionals, with new responsibilities makes collaboration even more necessary, but also adds to the complexity of collaborative care. Professionals discussing their responsibilities in the patient care trajectories and arranging a Collaborative Patient Care Agreement (CPCA) is the focus of our study. With the CHAT, Change Laboratory and the expansive learning theory as theoretical background we studied this process.

Aims

How do health professionals from different disciplines transcend organizational boundaries when they are redefining and creating new responsibilities in the process of developing a CPCA of a patient trajectory?

How does the absence of specific perspectives influence the boundary crossing?

Who facilitates the steps that allow for expansive learning?

How does expansive learning get facilitated?

Methods

In this single case study, we analysed both discourse and documents. Data collection took place while primary and secondary care professionals were in the process of developing a collaborative care trajectory for HF patients without a researcher interventionist, an intravention. A group of 11 healthcare professionals discussed the trajectory in varying composition in four meetings. A medical coordinator created a new draft CPCA after each meeting.

All four meetings were video-recorded and all speech was transcribed verbatim. The fragments of discourse which treats the care process were the professionals jointly working towards both redefined and new responsibilities, were selected. We adjusted the coding for discursive manifestations of contradictions and the expansive learning actions by arranging a code book.

Results

In the four meetings arranged, chaired and documented by the medical coordinator, the participants developed new ways to improve their collaborative patient care trajectory. Four participants including the MC attended all the meetings, the others one or two. The final revised CPCA shows minor changes in the diagnostic phase, many new and modified agreements in the chronic phase, and all new agreements in the terminal phase of the patient's trajectory.

However, the way that learning occurred seems to differ in each phase. In the discourse especially in the chronic and terminal phase perspectives of patients, who were no part of the meetings were missed. In these phase many different health professionals take part of the patients trajectory and no one had a complete overview of the patient's trajectory, and not all involved professionals were part of the meetings. The consequences of not representing absent voices in the expansive learning process, for which multivoicedness is a prerequisite.

To get insight in the expansive learning process we compared all contradictions, we as researchers identified with the selection identified by the participants of the meetings. It became clear that participants identified less than a third of the total contradictions. They identified only a third of the dilemmas, half of the double binds and none of the conflicts that the researchers noted.

All the participants facilitated expansive learning actions by questioning, analyzing, modelling, examining and implementing the model. These actions helped them to collectively understand the whole system of their common activity, the collaborative patient care trajectory

Many contradictions, dilemmas and double binds occurred in the discourse on the third, terminal, phase of the care trajectory. Lacking a view on the patients' perspective, the participants could not resolve these contradictions easily.

Conclusions

The analytical methods developed for CHAT proved to be a valuable theoretical framework to study this intervention, where both patient(s) and researcher-interventionist were absent. There is a need for differentiated involvement of people with different perspectives, such as patients and carers. Spending time exploring whose perspectives are needed when negotiating (new) responsibilities may sound counterintuitive in a busy health care setting. However, if participants are aware of the multi-voiced process, they can prioritise what is actually new and complicated. The participants can learn collectively as they negotiate and make changes in their collaborative care. Focusing on their shared object, the patient care trajectory, our participants became aware of their interdependence. In creating their new CPCA, they were able to learn expansively from the contradictions they identified to adapt aspects of their collaboration. However, there was room for improvement in identifying contradictions. If professionals possessed the skills needed to explore all the contradictions in their collaborative work, it would help them overcome the tendency to avoid conflict and help them collectively define new forms of collaborative care.

During the presentation we will discuss how others manage multivoicedness. And what is needed to enable professionals to learn to name contradictions and see them as the beginning of learning. How could we strengthen their transformative agency.

SYMPOSIUM PAPER 1, SHORT ABSTRACT:

To prevent the fragmentation of chronic care across organisational boundaries, healthcare professionals need to build shared knowledge about their work. When they discuss and create a collaborative care pathway, we explore whether expansive learning occurs. Although this is not a guided change lab intervention, we are exploring their collaborative learning and changing care. Method: Single case study without a researcher interventionist. We explored the "who" and "how" of facilitating expansive learning in changing a Collaborative Patient Care Agreement (CPCA) by studying professionals negotiating responsibilities in four meetings. Also we explored the involved and missing perspectives during the meetings. CHAT and expansive learning theory was used to analyze coded transcripts of the discourse. The coded transcripts we triangulated with the drafts and final CPCA to gain insight into the new steps created in the care trajectory.

Results

Healthcare professionals from different organisations collaborate to deliver and transform patient care across boundaries. Contradictions emerge in the discussion of patient care. The need for the perspectives of other professionals and patients was different at each stage, depending on whether the negotiations were about revising existing responsibilities or establishing new ones. Our analysis showed that this difference was related to the presence or absence of relevant perspectives from some professionals and patients.

As researchers, we identified more contradictions than the professionals. When contradictions became explicit, expansive learning began. Naming problems, sharing perspectives and creating models to resolve contradictions enabled the professionals to facilitate their expansive learning and create their new patient care trajectory.

SYMPOSIUM PAPER 1, EXTENDED SUMMARY:

Patients receiving care simultaneously from both the primary care and secondary care settings need health care providers who collaborate and coordinate their care. The increasing number of patients with chronic diseases and multimorbidity who move between their different healthcare providers makes this collaboration even more urgent. The increasing involvement of other professionals, with new responsibilities makes collaboration even more necessary, but also adds to the complexity of collaborative care. Professionals discussing their responsibilities in the patient care trajectories and arranging a Collaborative Patient Care Agreement (CPCA) is the focus of our study. With the CHAT, Change Laboratory and the expansive learning theory as theoretical background we studied this process.

Aims

How do health professionals from different disciplines transcend organizational boundaries when they are redefining and creating new responsibilities in the process of developing a CPCA of a patient trajectory?

How does the absence of specific perspectives influence the boundary crossing?

Who facilitates the steps that allow for expansive learning?

How does expansive learning get facilitated?

Methods

In this single case study, we analysed both discourse and documents. Data collection took place while primary and secondary care professionals were in the process of developing a collaborative care trajectory for HF patients without a researcher interventionist, an intravention. A group of 11 healthcare professionals discussed the trajectory in varying composition in four meetings. A medical coordinator created a new draft CPCA after each meeting.

All four meetings were video-recorded and all speech was transcribed verbatim. The fragments of discourse which treats the care process were the professionals jointly working towards both redefined and new responsibilities, were selected. We adjusted the coding for discursive manifestations of contradictions and the expansive learning actions by arranging a code book.

Results

In the four meetings arranged, chaired and documented by the medical coordinator, the participants developed new ways to improve their collaborative patient care trajectory. Four participants including the MC attended all the meetings, the others one or two. The final revised CPCA shows minor changes in the diagnostic phase, many new and modified agreements in the chronic phase, and all new agreements in the terminal phase of the patient's trajectory.

However, the way that learning occurred seems to differ in each phase. In the discourse especially in the chronic and terminal phase perspectives of patients, who were no part of the meetings were missed. In these phase many different health professionals take part of the patients trajectory and no one had a complete overview of the patient's trajectory, and not all involved professionals were part of the meetings. The consequences of not representing absent voices in the expansive learning process, for which multivoicedness is a prerequisite.

To get insight in the expansive learning process we compared all contradictions, we as researchers identified with the selection identified by the participants of the meetings. It became clear that participants identified less than a third of the total contradictions. They identified only a third of the dilemmas, half of the double binds and none of the conflicts that the researchers noted.

All the participants facilitated expansive learning actions by questioning, analyzing, modelling, examining and implementing the model. These actions helped them to collectively understand the whole system of their common activity, the collaborative patient care trajectory

Many contradictions, dilemmas and double binds occurred in the discourse on the third, terminal, phase of the care trajectory. Lacking a view on the patients' perspective, the participants could not resolve these contradictions easily.

Conclusions

The analytical methods developed for CHAT proved to be a valuable theoretical framework to study this intervention, where both patient(s) and researcher-interventionist were absent. There is a need for differentiated involvement of people with different perspectives, such as patients and carers. Spending time exploring whose perspectives are needed when negotiating (new) responsibilities may sound counterintuitive in a busy health care setting. However, if participants are aware of the multi-voiced process, they can prioritise what is actually new and complicated. The participants can learn collectively as they negotiate and make changes in their collaborative care. Focusing on their shared object, the patient care trajectory, our participants became aware of their interdependence. In creating their new CPCA, they were able to learn expansively from the contradictions they identified to adapt aspects of their collaboration. However, there was room for improvement in identifying contradictions. If professionals possessed the skills needed to explore all the contradictions in their collaborative work, it would help them overcome the tendency to avoid conflict and help them collectively define new forms of collaborative care.

624 WITHDRAWN: Addressing racial disparities in school exclusion: CHAT approaches in research and practice

Peter Hick, ¹

¹ Edge Hill University, Ormskirk, United Kingdom

Presentation: Discussion table (45 minutes)

Theme: Dealing with inequality

Keywords: exclusion race schooling

Delegates who are interested in this topic are invited to message Peter Hick directly.

SHORT ABSTRACT

This Discussion Table will provide a forum for researchers to share perspectives on how Cultural Historical Activity Theory can be drawn on to address inequalities in schooling, with a particular focus on disciplinary practices and exclusion.

There are long-standing racial disparities in school exclusions in US and European contexts, particularly experienced by historically marginalised or under-served communities. More complex patterns of racial disproportionalities remain in relation to rates of identification of particular categories of special educational need and disability.

Intersectional perspectives on race and disability in education are vital to understanding how inequalities are perpetuated through education systems more broadly. Together these widespread phenomenon represent a critical lens on processes of the cultural construction of difference through educational systems.

Substantial work has been done on these issues in the USA in particular, but much less in Europe. There is an urgent need to provide spaces for researchers to explore these issues in international contexts and to share ideas for developing research in this area.

EXTENDED SUMMARY

The work of Alfredo Artiles and colleagues over many years have established the importance of studying intersections of race and disability in challenging enduring contradictions for equity in education.

Aydin Bal for example has developed a formative intervention approach to school exclusion known as 'Learning Lab'.

I will introduce the session by opening up the issues more broadly; then setting out a proposal for a UK-based Learning Lab study.

Participants will be invited to discuss their own country contexts, areas of CHAT theory they draw on and issues for equity in schooling they seek to address

627 Creating collective science learning experiences in Australian Playgroup families

Prabhat Rai, ¹

¹ Monash University, Melbourne, Australia

Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: Educational experiment common knowledge agency

SHORT ABSTRACT

The focus of this paper is to show how educational experiment methodology was employed to collaborate with Australian Playgroup families in creating collective science learning experiences for children in early years. The study used Conceptual PlayWorld pedagogical model to design learning intervention to amplify children's play and create condensed moments which offers possibility to understand how collective imaginary situation is created with children. The data presented in this study involved 12 children and their families in a Playgroup in Melbourne, Australia. Children and their families participated in six bi-weekly Conceptual PlayWorld sessions via zoom during the COVID-19 pandemic. Children's storybook Rosie's walk was used to teach the concept of lever to children in the age range of 2 year 8 months to 4 year 6 months. The analysis shows that age-specific potentialities of children; relational collaborations among the researcher and researched person; and use of theoretical-dialectical knowledge (Davydov, 1990) were central to creating collective science learning experience for children.

EXTENDED SUMMARY

Background

Supporting children's concept learning in early years is a challenging endeavour. In our previous work (Fleer, Fragkiadaki & Rai, 2020) we have highlighted the methodological challenges of studying children's development as we use Conceptual PlayWorld to create new transformative conditions for their learning. The concept of living laboratory (Fleer, Fragkiadaki & Rai, 2020) was used to argue for capturing development in-motion and not studying fossilised complete forms. Our work specially draws on educational experiment methodology, an approach of designing theoretically planned intervention for the development of new transformative practices. This paper presents a case example from one of our interventions done in an Australian Playgroup, purposefully designed for teaching STEM concepts to children in their home settings. The study was done during the COVID-19 pandemic lockdown. Families with their children participated through zoom video sessions (further details are mentioned in data collection section).

The prime aim in this paper is to detail the collaborative mechanism that guided the design of educational experiment in our research. The paper is divided into four broad parts- The first section presents the methodological crisis and theoretical foundations of educational experiment methodology; second section spells out data collection process that guided intervention model; third section, focuses on the result and main findings; the final section comprising of discussion and

conclusions synthesises the main arguments of the paper highlights the multiple activity settings created through the educational experiment.

Aims

The study investigates how Conceptual PlayWorld creates opportunities for collective science learning for children in early years.

Methods

The study used Conceptual PlayWorld (Fleer, 2017a, 2018, 2020) as a model of planned intervention in children's home setting. Conceptual PlayWorld is a theoretically informed play-based model that creates motivating conditions for children's concept formation using children's stories. The research team and families used following five key characteristics of the Conceptual PlayWorld to develop the collective imaginary play : a) selecting a story that has drama and a complex plot that could engage children and introduces a problem situation that demands learning a STEM concept; b) designing the play space that gives children the opportunity to explore STEM concepts and different characters from the story; c) plan entry and exit from PlayWorld so that family members are in the same imaginary situation and create collective learning experiences, d) planning inquiries and detailing the problem scenario, based on the story plot. Children should have sufficient information to understand the problem scenario and attempt to solve the problem with the adults. The problem scenario is not scripted but a general idea of the problem is planned so that parents and children could explore them based on their interaction; and e) planning teacher's role as he/she joins the imaginary space in order to interact with the children (more details in Fleer, 2017a, 2018). Fleer (2017b) has argued that the use of "digital devices... in PlayWorlds, amplified the children's play in scientific ways, which in turn created new conditions for children's development" (p.303). While playing within the Conceptual PlayWorld, young children develop their understandings about the natural, technical, and technological world in relation to their social and cultural reality. The arguments developed in this paper shows that Conceptual PlayWorld as a pedagogic model carries with it the societal needs, institutional practices in which the person navigates as part of the process of how person and digital technologies become mutually constituted.

Results and Conclusions

The analysis suggests that Conceptual PlayWorld works as an evidence based developmental model that informed pedagogical thinking among families hence developing a site for collaboration between the researcher and the researched persons. This joint collaboration helped in taking a responsive and practical approach to make complex concept learning accessible to children in their play settings.

How interaction with the participants is planned

A discussion forum would be organised at the end of the presentation to involve participants in the discussion.

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633 Integrating AR and VR into Science Education: Enhancing Understanding Through Immersive Technologies

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Presentation: Poster presentation (presented in person at the congress)

Theme: Dealing with technology

Keywords: augmented reality virtual reality science education

SHORT ABSTRACT

Students of the Department of Early Childhood Education at the University of Ioannina were introduced to the AR and VR technologies and learned how they are already being integrated into educational settings. A total of ten groups of students – usually comprising approximately 25 students per group – became familiar with Meta Quest 2 Oculus VR glasses and with AR applications by trying certain relevant tasks to experiment the potential of AR technology in case it might be put to use toward enhancing current learning and teaching practices. As far as its content is concerned, the workshop displayed the diversity of applications in areas such as medicine, commerce, advertising, and education –focusing on educational apps: Hand Physics Lab, Octagon AR+, Space 4D+, ARLoopa, Google Sky. A questionnaire distributed through Moodle aimed at revealing the students' thoughts about the potential educational benefits, challenges and possibilities of AR and VR for future integration into a classroom. The authors are in the process of analyzing the results provided by the questionnaire. However, despite the precise results furnished by the questionnaire, the workshop's interactive nature and the students' participation, may be indicative of a workshop that was generally well received and of an attempt to show one way in which AR and VR can offer themselves up as technology to improve educational experiences. We anticipate the results will help us better grasp how AR and VR will function in future educational methods.

EXTENDED SUMMARY

Background

The rapid development of Augmented Reality (AR) and Reality (VR) technologies marks the beginning of a chapter in educational approaches providing new and creative paths for exploring teaching methods. A specialized workshop designed for students focusing on childhood education was created to investigate the principles and real-world impacts of AR and VR, in educational settings. The goal was to prepare educators with the understanding and abilities needed to incorporate these technologies into their teaching methods ultimately improving results and student involvement through immersive learning experiences.

Aims

The workshop was created to give students a chance to explore Augmented Reality (AR) and Reality (VR) technologies, in a school environment. It went beyond talking about theories by letting students get hands on experience helping them understand how AR and VR can be used practically for

teaching and learning. By immersing students, in these technologies the goal was to inspire educators to think and use innovative teaching methods that make use of these advanced technologies to enhance learning.

Methods

In the workshop, 225 students of the Department of Early Childhood Education, University of Ioannina in Greece were immersed in a diverse array of AR and VR experiences, using the Meta Quest 2 Oculus VR glasses and tablets with a variety of applications to explore these technologies first-hand. The participants were divided into groups of 4 or 5 people. Each session consisted of about 25 members. The curriculum was designed to engage participants through both individual explorations and collaborative group activities. "Hand Physics Lab", a VR application for VR glasses with hand tracking was introduced. Additionally, the workshop introduced a range of AR applications, both marker-based, like Octagon AR+ and Space 4D+, and markerless, including ARloopa and Google Sky. The workshop was finalized with an introduction to Blippar, an AR browser and content creation platform. This holistic approach aimed to not only demonstrate the immediate applications of AR and VR in education but also to inspire participants to envision and develop new, innovative ways to integrate these technologies into future educational settings.

Results

The workshop was created with the goal of achieving objectives, such as improving participants' grasp of natural sciences. It aimed to boost the confidence of educators in teaching science topics by introducing them to immersive AR and VR technologies. Additionally, the session was expected to inspire the development of teaching methods tailored specifically for childhood education. By providing hands-on experiences and interactive demonstrations, the workshop aimed to equip participants with the tools and motivation to create approaches to science education that are more engaging and accessible, for young students.

Conclusions

The workshop demonstrated the crucial role of integrating AR and VR technologies into science education, emphasizing the power of immersive, interactive learning experiences. It showed that such innovative teaching methods not only improve learning outcomes but also significantly boost future educators' enthusiasm for teaching science. By engaging participants with hands-on experiences in AR and VR, the workshop highlighted the potential for these technologies to make science education more accessible and engaging, fostering a positive disposition towards science among both educators and young learners. This method proposes a path to improve the teaching of science, to children promoting the creation of effective and enjoyable instructional methods.

Interaction with Participants

The workshop's interactive and engaging approach aims to create a lasting learning community among participants going beyond the sessions. Future plans involve hosting sessions to delve deeper into AR and VR in science education. Online forums will also be set up for educators to exchange ideas, teaching materials and experiences fostering discussion and cooperation to enhance the teaching and learning journey. Furthermore, collaborative research projects will be initiated as part of the workshop providing participants with opportunities to contribute to the advancement of science education, in childhood by exploring ways to integrate AR and VR technologies.

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634 Science Education Videos as an Assessment Tool

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Presentation: Poster presentation (presented in person at the congress)

Theme: Meaningful education

Keywords: science education video assessment

SHORT ABSTRACT

The research investigates the potential of using alternative assessment methods in response to curriculum reforms that prioritize skills over content. It proposes the use of student-created science education videos as a means of assessment for the course 'Topics of Science Education,' which is offered to fourth-year students in the Early Childhood Education Department. Approximately 200 students enrol in this course each academic year. The research is based on the premise that university students, particularly in science education courses, engage with various representations of scientific concepts and phenomena. Therefore, it suggests that allowing students to create multimodal artifacts is suitable for presenting topics to their intended audience, in this case pre-primary students. Data collection will be consisted of pre-making questionnaires distributed to students, as well as the collection of videos, reports, and reflective diaries submitted by the students. Qualitative analysis of the data will be conducted using NVivo software and will follow a thematic coding process. This research aims to explore student-created videos from the perspective of the creators, examining aspects such as media resources, design choices, views, interaction, and division of labor within the learning community. Additionally, it seeks to enhance our understanding of the use of student-created videos as an assessment tool in science education. Students learn most effectively when actively engaged, when they participate, and when they undertake meaningful tasks, making the proposed research topic particularly relevant.

EXTENDED SUMMARY

Background

While curricula are shifting towards emphasizing skills over content in teaching and learning, assessing these skills often poses challenges for educators, leading to assessment methods that predominantly focus on content recall (Nielsen et al., 2020). Towards this direction and particularly in science education where multimodal resources are used, hence multimodal communication is required (Jamani 2011; Tang et al. 2014), digital technologies present new opportunities in the assessment field.

As such, creating an educational video presents an alternative academic task within science education (Hoban et al., 2016a). This task offers a unique opportunity to assess a wide range of content comprehension and skills, while also evaluating students' ability to effectively communicate scientific concepts (Nielsen et al., 2020). The added value of student-created videos lay on the process of

searching and studying scientific representations in order to create their own and this process is proved fruitful in earlier works (Nielsen et al., 2020).

Aims

This research seeks to explore student-created videos from the perspective of the creators (views, choices, interaction and division of labor within the learning community) as well as to enhance our understanding regarding their use as an assessment tool in the field of science education.

Methods

After a relevant lecture about educational video evaluation criteria (Sofos, 2021) the students will be asked to create their own educational video for a scientific concept or phenomenon addressing pre-primary students. The students will be invited to answer a pre-making questionnaire with open ended questions relevant to their choice of topic, background knowledge on the topic, experience in video-making and views about educational videos' use and creation. After the process of video-making, they will be invited to write and submit a report about the steps followed, the resources used, the lessons learned, the difficulties they encountered etc. as well as their reflective diaries which focus on the collaboration among the members of the team, the division of labor and role taking as well as the interactions that took place. Finally, the videos will be reviewed using the VQ Rubric introduced by Nielsen et al. (2020), which provides essential descriptive details for each educational video. Therefore, the data will be consisted of the answers to the questionnaire, the groups' reports, the reflective diaries and the videos.

Data analysis

The data analysis will follow mostly qualitative approaches using the software NVivo. For the pre-making questionnaire as well as the reports and diaries the thematic coding process will be followed. The videos will be analysed based on the VQ Rubric and after mapping the resources used in the videos, they will also be coded in NVivo, considering that the resource choice holds meaning for the creators.

Sample

The research will be conducted with a convenience sampling approach. The participants will be fourth-year students enrolled in the Early Childhood Education Department at the University of Ioannina. Specifically, participants will be able to enrol in the course 'Topics of Science Education' during the spring semester of the 2023-2024 academic year. Approximately 200 students are enrolled in the course each academic year.

Results

For the time being there are not results based on the methodology described above. The idea of this research was based on the researcher's practice to assess the aforementioned course based on student-created science education videos for the last 2 years. Students' educational videos along with an accompanying report are assessed based on the scientific content, its appropriateness for the defined audience, the number of resources used for the creation of the video, and the overall result. Based on the last year's videos, students' topic preferences are floating and sinking, water cycle and especially the cloud creation, solubility, the reaction of mixing baking soda with vinegar, the solar system, pollination, and the rainbow.

For the creation of the videos students used a variety of resources such as narration with or without still images, experiment performance, music, characters such as puppets, teddy bears, etc., text

labels. The most frequently used techniques are PowerPoint, stop motion, video recording, slow-motion.

Even though some aspects of the videos are assessed, the perspective of the creator haven't been studied. This is the reason why the researcher organizes the research, seeking to explore student-created videos as an assessment tool in science education field.

Conclusions

So far, the literature has shown that student-created videos have a lot of benefits to offer students in terms of skill practice (Hawley & Allen, 2018; Lam & Yunus, 2023). Finally, what the Confucian scholar Xunzi (340 - 245 BC) said, *What I hear, I forget. What I see, I remember. What I do, I understand*, illustrates the concept that students learn most effectively when actively engaged, when they participate, and when they undertake meaningful tasks (Baclay, 2021).

How interaction with the participants is planned

Q & A

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635 Navigating from Individual Conflicts to Systemic Contradictions in a Formative Intervention

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Creative ways to do research

Keywords: Formative interventions contradictions teacher learning

SHORT ABSTRACT

The goal of this formative intervention study is to support a group of teachers from different organizational settings in designing their novel professional learning community under a non-profit organization. The analysis presented in this paper focuses on how teachers identified an overarching contradiction in the generalized teacher professional development activity system in Turkey, and organized their activities as a response to it. Specific attention was given to how teachers' personal sense development accompanied collective expansive learning processes during the problem identification phase. To trace the evolution of community discussions on problems of practice, I focused on turning points reflecting changes in the nature of participants' discourse with regards to the unravelling of contradictions as critical conflicts and double binds, identification and analysis of activity-level contradictions, and personal sense development throughout the nine community meetings. Analysis revealed that through eight turning points, teachers transitioned from articulating and elaborating their individual critical conflicts to reformulating the initial situation as a double bind in their quest to overcome their critical conflicts. The supports provided to elaborate on this double bind in the intervention made an underlying systemic contradiction salient for them. Throughout this process, individual teachers developed personal sense not only by recognizing the object of activity to which they could direct their professional learning actions but also by reconceptualizing it toward one that provides multiple entry points for meaningful professional learning. Finally, teachers collectively planned the community activities toward the reconceptualized object, aiming for local solutions to the identified contradiction.

EXTENDED SUMMARY

Background

In this study, the development of a teacher professional learning community is supported through a formative intervention (Engeström, 2011). Unlike traditional implementations in organizational settings, this method was employed to support a group of mathematics teachers teaching at different schools in Turkey who needed to design a community under a non-profit professional development organization.

Aims

The analysis presented in this paper focuses on how teachers identified an overarching contradiction in the generalized teacher professional development activity system in Turkey and organized their activities as a response to it. I paid specific attention to how teachers' personal sense development

(Leont'ev, 1978; Sannino, 2008) accompanied collective expansive learning processes during the problem identification phase (Engeström, 2014).

Methods

As mirror material (Sannino et al., 2016), I utilized a book containing a critical comparative analysis of mathematics classrooms in three countries (Stigler & Hiebert, 1999). Activities centered around these materials included teachers writing reflection papers and engaging in discussions during community meetings.

To trace the evolution of community teachers' discourse on their problems, I focused on turning points (TPs) reflecting changes in the nature of participants' discourse, such as the unraveling of contradictions as critical conflicts and double binds, identification and analysis of activity-level contradictions, and personal sense development throughout the nine community meetings (Engeström, 1987/2014; Engeström and Sannino, 2011; Haapasaari et al., 2016).

Results

In the first meeting, although teachers expressed their intention to "do something together right now" to address the pressing, albeit vaguely defined double bind situations, their emotionally charged expressions revealed critical conflicts that needed unpacking within a supportive community (TP-0). As they engaged with the mirror material, a dominant and shared critical conflict situation surfaced: "Teacher I was taught/expected to be" versus "teacher I aspire to be." These teachers spent significant effort for their professional development to overcome the inherited traditional norms of teaching. However, the discrepancy between their expectations from their efforts and the realities they faced in their practices gave rise to this critical conflict (TP-1). Unpacking their critical conflict in the intervention setting helped them to begin searching for personal meaning in their professional development actions through the recognition of an object of activity with the help of material support and dialogic processes, which was the mathematics teaching culture in need of transformation (TP-2). When they shared their reflections within the community, teachers achieved a shift in discourse by reformulating the crisis situation as a double bind. Teachers in Turkey were frequently receiving two incompatible messages: "You need to find your own ways to transform the teaching culture in your classrooms" versus "you need to follow the mainstream" (TP-3). This marked an important developmental shift, as they elaborated on this double bind, an underlying systemic contradiction became salient for them: *The lack of unifying conceptual and material instruments in Turkey that subjects could draw on to transform the object toward the desired outcomes* (TP-4). The analysis of the systemic contradiction emerged organically as teachers began examining frameworks provided to them by central organizations and planned activities for further analysis (TP-5). During a reflection activity conducted at the end of the problem identification phase, teachers' discourse revealed that each individual teacher reconceptualized the object of activity as an expanded problem space, as reflected in quotes from two of the participant teachers: "As we researched the causes and causes of the causes, and examined them, we concluded that the real problem is the mathematics teaching or the curriculum/framework"; "How are we going to teach this [mathematics]? I think we have to move forward, beginning here" (TP-6). This was followed by planning the community's professional development activities within that expanded problem space, aiming for local solutions to the identified contradiction (TP-7).

Conclusions

In this study, although double binds functioned as better indicators of systemic contradictions and mediators for their identification and analysis, initiating the formative intervention process by supporting teachers in articulating and elaborating their individual critical conflicts helped each practitioner in dealing with their personal critical conflicts throughout the formative intervention process. That is, teachers continued to develop a personal sense of the object of their professional development activity while collectively identifying and analyzing activity-level contradictions and generating local solutions.

Interaction

To facilitate the discussion, first I will share two short quotes from Sannino pointing out a research gap in CHAT-based developmental interventions. The first quote highlights that researchers tend to overlook practitioners' personal histories by focusing more on the histories of institutions during interventions. The second quote invites researchers to integrate both forms of history to "transcend both the limits of experience understood as strictly personal and the limits of activity understood as strictly structural". Then, I will invite participants to discuss whether my study's approach and findings provide insights to fill the gap Sannino points out.

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637 ONLINE - Emancipatory hacker education and the co-construction of sociodigital futures

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Dealing with technology

Keywords: hacker education emancipatory pedagogy tas-based pedagogies

SHORT ABSTRACT

Being part of a continuous and dynamic research path, this study aims to understand in a deeper way how hacker education experiences can contribute to the construction of new sociodigital futures besides encourage the co-construction of a sociodigital network with educators and institutions. Researchers, activists and practitioners have glimpsed elements in the educational ecosystem of hacker communities that give us clues and important experiences about the elements that can lead to emancipatory pedagogies in our digitalized societies. A previous study involving hackers from diverse movements and students, teachers and researchers from a brazilian school, revealed a multidimensional understanding of hacker education, pointing to elements of a transformative activist stance based pedagogy in digitalized societies. Six dimensions emerged: inquietude, action-fun, collective, society-community, sharing and the humanistic-technological dimension. In both contexts, the co-creative process, in addition to strengthening the sense of community, is what drives participants to act as transformative agents through the artifacts they can create. This work is ongoing and the next phases will enable us, through the dialogues we will build and the experiences we will learn about, to glimpse strategies that can contribute to emancipatory hacker education and the co-construction of sociodigital futures.

EXTENDED SUMMARY

Background

The world, timidly, is beginning to overcome a naive view of technologies and the conglomerates that create them. Digital technologies are gradually no longer perceived as harmless, unquestioning companions (Morozov, 2018). Hidden mercantile interests and world domination projects are beginning to attract attention. The effects of this mainstream digital culture, which arises from the entrepreneurial culture of Silicon Valley (Castells, 2001), are felt and perceived around the world: global consumerism that drastically affects the sustainability of our world, the invasion of our private lives, collected, categorized and transformed into raw material for advanced and complex mechanisms that precisely capture our attention and make us addicted.

If this capitalist technological culture isn't questioned, criticized and, at the same time, other alternatives placed forward, experimented with and suggested, we will live forever in a cycle of oppression instrumentalised and amplified by digital technologies. Taking the pedagogy of the oppressed as lens (Freire, 1987), we realise that, although difficult to accept, the technology magnates and their companies are not in fact the enemies, but rather, it's this oppressive culture that

must be fought. There is an urgent need for emancipatory pedagogies that point us towards new possibilities for a humanist sociodigital future (McLaren et al., 2018).

It is in this sense that, for some years researchers, activists and practitioners have glimpsed agentive/transformational elements in the educational ecosystem of hacker communities that give us clues to emancipatory pedagogies in our digitalized societies. This is the *hacker education* (Aguado & Alvarez, 2019, 2021, 2024; Menezes, 2022; Preto, 2017).

Aims

The purpose of this work is twofold: 1) understand in a deeper way how hacker education experiences can contribute to the construction of new sociodigital futures; 2) encourage the co-construction of a sociodigital network, with educators and institutions that wish to engage in these constructions.

Methods

This research is not an isolated section, but rather, it is part of a continuous and dynamic path. In the author's PhD research (Aguado, 2020), through mixed methods research it was possible to identify which and how the characteristics of hacker education are experienced by the participants of hacker communities and by students, teachers and researchers, participants of Conexão Escola-Mundo project (Lapa et al., 2019), which aims to promote in Brazilian schools, an activist methodology for citizenship centered on hacker education. Among the contributions of this research we highlight the multidimensional understanding of hacker education, composed by six dimensions: *inquietude*, *action-fun*, *the collective dimension*, *society-community*, *the sharing dimension* and the *humanistic-technological dimension*.

Departing from this previous research, we organize this actual work in three stages. The *first stage* sought to bring our constructions closer to theoretical-practical fields that could, from their bases, contribute to the enrichment of our work. It's in this stage that we realized that hacker education presents elements of a TAS-based pedagogy in digitalized societies. This convergence can be seen in depth in Aguado & Alvarez (2024).

The *second stage*, still in a movement to expand horizons, we are going to visit projects and actions around the world that identify with emancipatory approaches to sociodigital. At this stage we will seek to criticize our assumptions and draw connections with a view to creating a sociodigital network of mutual support. Finally, in the *third stage*, the emphasis will be on continuing to build local communities allowing people to experience hacker education, but this time. Through *collaborative action research*, we will build knowledge about how these hacker education experiences can contribute to the construction of new sociodigital futures.

Results

As presented by Aguado & Alvarez (2024), the hacker education can be understood from its multidimensionality, which points to elements of a TAS-Based critical pedagogy (Stetsenko, 2016, 2019, 2020; Vianna & Stetsenko, 2019). Driven by their curiosities and critical stance (*Inquietude dimension*), hackers embark on creative processes, hands-on, in a constant active, activist and fun movement (*Action-Fun dimension*). Hacker communities are spaces that enable the tools of activism and agency (Stetsenko, 2016, p. 367), with people cocreating the world and, recursively, the individual themselves. The hackers's inquietude is not solved by superficial explanations, but rather in practice, exercising the agency, becoming "capable of challenging and changing our own limit situations and often oppressive circumstances" (Stetsenko, 2016, p. 368).

The creative process is *communal/collaborative (Collective dimension)*, even though they have individual meaning. This collectividual education is carried out by “Learners-through-community and community-through-learners” (Stetsenko, 2016, p. 353). These communities have porous walls and their dynamics are intimately committed to the societies in which they are located (*Society-community dimension*). These people that identifies themselves as activists, challenge the status quo, acting to build a better world (Vianna & Stetsenko, 2019), i.e Hacker Feminism and Media Activism movements (Ortmann, 2022; Richterich, 2022).

Themes such surveillance capitalism (Zuboff, 2015), the attention economy, cyberbullying (Wachs et al., 2021), the absence of technodiversity and the constant dehumanization and atomization of people have been actively central themes in the activist stance of hacker communities, in the *humanistic-technological* dimension. This dimension alert us to the importance of overcoming the false humanism-technology dichotomy (Freire, 1967; Lund et al., 2019). Permeating all these dimensions of hacker education is the *sharing* dimension, imperative for the process of co-construction of the world and for the activist exercise of hackers. It’s an expression of the mutuality (Stetsenko, 2016, p. 361) and a recursive process that contrasts with the capitalist exploitation of intellectual creations.

Conclusions

The experiences of hacker education both in its original context, the hacker communities, and at school, starts from individual inquietudes and interests that mature critically in the community context, giving rise to a co-creative and dialectical process with the community and its surroundings, demonstrating a way of agentively co-creating the sociodigital future. These findings have given us clues about possible approaches to providing emancipatory/agentive/critical pedagogies that interferes in the oppressive cycle that tends to consolidate in the socio-digital field. With the continuation of this research and the acceptance of its dynamic nature, we intend to go further in improving these experiences, seeking to elucidate what needs to be elucidated and especially, fostering local communities connected in a broader sociotechnical network.

How interaction with the participants is planned

Sharing this work at ISCAR 2024 aims to broaden the dialogue on hacker education and TAS-Based critical pedagogy, allowing our constructions to be critiqued and to evolve. In this sense, at the end of the presentation participants will be invited to make contributions in 2 directions: 1) What aspects of this work caught your attention in a positive way? 2) What aspects of this work do you believe need to be revised/improved? How?

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639 ONLINE - The Ontogenetic Didactics: Ensuring Every Child's Right to Learn

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Promoting inclusiveness in social practices

Keywords: Inclusiveness Ontogenetic Learning Functional Systems

SHORT ABSTRACT

The workshop aims to present an innovative educational practice based on the principles of ontogenetic development, emphasizing inclusivity in learning environments. Drawing on the work of Christel Manske and her interdisciplinary approach, which integrates clinical psychology, pedagogy, and neurodevelopmental insights, this method fosters the creation of functional systems in children, including those with Down syndrome, disturbed behavior, mental health problems of unknown genesis. For example, with this method the children with Down syndrome learn to read and count between two and three years old. The method's core lies in its tailored, participatory learning activities that engage children across different developmental stages. The workshop will showcase this approach through narratives, videos, and photographs, illustrating how ontogenetic education can transform learning spaces to accommodate every child's needs and potential. Participants will then discuss how these innovations can be adapted and translated into their practice, facilitating inclusivity and diversity in educational settings.

EXTENDED SUMMARY

Background: The conventional educational model often overlooks the diverse needs of students, particularly those with developmental challenges. This workshop introduces an ontogenetic education model, conceptualized by Christel Manske. This model emphasizes a tailored, developmental perspective, focusing on the progression of functional systems within the child. It challenges the one-size-fits-all methodology by proposing a dynamic, inclusive framework that respects and nurtures individual learning trajectories.

Aims: The primary goal of this workshop is to showcase the ontogenetic didactics as a transformative tool for fostering inclusivity in learning environments. By demonstrating the success of this model through real-world examples and evidence-based practices, the workshop aims to inspire educators, therapists, and policymakers to reevaluate and innovate their current practices. It seeks to underline the importance of a pedagogy that is adaptive, empathetic, and rooted in the understanding of developmental psychology and neurodiversity.

Methods: The methodological core of the workshop involves an interactive presentation of case studies, video documentaries, and photo essays that bring to life the principles of ontogenetic education. Participants will be guided through detailed analyses of these cases, highlighting the pedagogical strategies employed, the challenges overcome, and the outcomes achieved. Breakout sessions will facilitate hands-on activities, enabling attendees to apply ontogenetic concepts to hypothetical scenarios and to discuss potential adaptations for their specific contexts.

Results: Although the workshop is not focused on presenting traditional research results, it aims to share the tangible impacts of ontogenetic didactics on children's learning outcomes. Through a narrative approach, the workshop will illustrate improvements in cognitive, social, and emotional development among diverse learner populations. Anecdotal evidence and qualitative assessments will underscore the transformative power of an education system that is genuinely inclusive and responsive to the needs of all children.

Conclusions: The workshop will conclude with a reflection on the broader implications of adopting an ontogenetic approach to education. It will argue for a paradigm shift towards more holistic, child-centered pedagogies that recognize and value diversity in learning processes. Participants will be encouraged to consider the systemic changes needed to implement such an approach in their institutions and the potential barriers to these changes.

Interaction with Participants: The workshop is designed to be highly interactive, with participants encouraged to share their experiences and consider the application of ontogenetic education principles in their settings. Through group discussions and collaborative activities, attendees will explore ways to innovate and translate these concepts to enhance inclusiveness in their practice.

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640 ONLINE - From ISCAR to ISCARP: Experiencing Inclusion of Practice into Research within Vasilyuk's Co-Experiencing Psychotherapy Psychotechnical System

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Vygotsky Vasilyuk Psychotechnics

SHORT ABSTRACT

This workshop aims to bridge the gap between theoretical psychology and psychological practice by demonstrating how Vygotsky's concepts of "perezhivanie" and "psychotechnics" — a philosophy of practice — can innovatively transform psychotherapeutic practices and psychological research. By focusing on the psychotechnical system of Co-experiencing Psychotherapy developed from Vygotsky's ideas and furthered by Vasilyuk's concept of experiencing and co-experiencing, we will explore the methodological pathway of integrating theory into practice and practice into theory. The session will feature a live demonstrative psychotherapeutic session followed by an exercise and discussion. Participants will engage in discussions on applying these theoretical innovations to enhance their own research and practice, emphasizing the transition from experimental to experiential (psychotechnical) methodologies in psychology. This approach not only fosters a deeper understanding of clients' experiences but also promotes inclusiveness and individualized care in psychological practice.

EXTENDED SUMMARY

Background

In the landscape of contemporary psychology, there still exists a significant divide between the theoretical paradigms of academic research and the nuanced psychological practices. This workshop seeks to address and bridge this divide, taking inspiration from Lev Vygotsky's seminal challenge for the field to prioritize "psychotechnics" — a philosophy that seamlessly weaves together theoretical constructs, philosophy with practical applications. This imperative is especially relevant within the domains of counseling and psychotherapy, disciplines rich in psychological complexity yet often bereft of the full integration of cultural-activity psychology principles that have seen successful application in fields such as education and medicine.

An illustrative example of this schism can be drawn from Clarà's (2016) analysis of Vygotsky's and Vasilyuk's understanding of "Perezhivanie", in which the theoretical evolution of the concept and its practical expansion across decades are dissected. Vasilyuk's nuanced understanding of "experiencing" aligns closely with Vygotsky's original conception, yet advances it as a dynamic activity aimed at navigating and overcoming critical life situations. This advancement is not merely theoretical; it manifests as a psychotechnical methodology within psychotherapy, where "perezhivanie" and co-

experiencing becomes a pivotal element of the therapeutic process—serving as a state, an activity, a process, a reflection of higher mental functions, a method and the core subject.

Academic psychology, with its predilection for experimental research, universal truths, and objective measurements, tends to produce knowledge that is abstract, detached, and impersonal, often described in the third person ("about it"). This approach, heavily reliant on natural science cognition and gnoseologism, starkly contrasts with the practice of psychotherapy. Psychotherapy, particularly as conceptualized within Fyodor Vasilyuk's framework of co-experiencing psychotherapy, prioritizes the therapist's experiential presence, the uniqueness of individual client experiences, empathetic inclusion, and intuitive understanding, all underpinned by a robust philosophy of practice. This advancement is not merely theoretical; it manifests as a psychotechnical methodology within psychotherapy, where experiencing becomes a pivotal element of the therapeutic process. This workshop aims to demonstrate the work of psychotechnical methodology in action as outlined by Vygotsky and further refined through Vasilyuk's work, offering a comprehensive framework for psychology that navigates the intricate relationship between research (explaining) and practice (understanding).

Aims

To highlight and dissect the contrasts and tensions between the traditional paradigms of academic psychology and psychological practice.

To explore the principles of psychotechnical methodology in depth, demonstrating its foundational role in reshaping contemporary psychology and illustrating its direct application in clinical and therapeutic settings.

To advocate for the method of co-experiencing, not only as a therapeutic technique but also as a method of research that intertwines understanding and empathy in the pursuit of psychological insight.

Methods

Our approach to achieving these aims includes a rich blend of theoretical instruction, practical case study analysis, and interactive participant engagement. We plan to cover a range of topics that underscore the dichotomy between experimental and experiential methods of research in psychology, the core tenets of psychotechnical methodology, and the hands-on application of co-experiencing psychotherapy principles.

The workshop is structured to encourage active participation through:

Live Psychotherapy Demonstration: Offering participants real-time insights into co-experiencing psychotherapy, these demonstrations will serve as practical illustrations of theoretical principles applied in real therapeutic contexts.

Reflective Exercises: These activities are designed to prompt participants to introspect and explore their own experiential insights, fostering a deeper personal connection to the psychotechnical approach.

Group Discussions: Facilitating open dialogues around the application, challenges, and opportunities of integrating psychotechnical methodology across diverse psychotherapeutic practices.

In-depth Case Studies: Providing a closer look at real-world examples, these studies aim to enrich participants' understanding and practical skills in implementing psychotechnical principles in their work.

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642 ONLINE - Subjectness position of students as a factor-protector of the destructive influence of perfectionism

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: social situation of student development perfectionism subjectness position in academic activity

SHORT ABSTRACT

The article provides extremely unfavorable statistics indicating a sharp increase in mental health problems among modern students. The current social situation of students' development is considered from the point of view of risks for their development and mental health. Examples of studies by Western and domestic authors show a sharp increase in indicators of perfectionism as a destructive personality trait, reinforced by the educational environment. The subjectness position in educational activities is considered as a protective factor against the destructive influence of socially prescribed perfectionism. The need for its support and strengthening is indicated as an important condition for improving the alarming situation in the form of an epidemic of depression and suicidal behavior among young people.

EXTENDED SUMMARY

Social situation of student development become more destructive over time as a mirror of the cultural-historical situation in society [1]. The sensational article with the self-explanatory title "Perfectionism Is Increasing Over Time" compared data from more than forty thousand students from English-speaking countries, examined by one of the most well-known tools for assessing the severity of various perfectionistic attitudes - the Multidimensional Perfectionism Scale in different periods, starting from 1980 gg. and for almost three decades [7]. The authors conclude that there is a steady increase in all three types of perfectionism identified in the mentioned scale: Self-addressed; addressed to others and socially prescribed. At the same time, the last, most destructive type of perfectionism, associated with the fear of being negatively evaluated and the desire to justify the seemingly unreasonably high expectations of others, according to the data of the mentioned meta-analysis, has especially grown by more than a third over the past decades [10]. By analogy with this study, we assessed the dynamics of perfectionism in a Russian student sample over the past 10 years [4]. According to the data obtained, all indicators of perfectionism also increased significantly among Russian university students. At the same time, indicators of socially prescribed perfectionism, which were closely correlated with indicators of depressive symptoms, increased by almost 50% [4]. In light of what has been said, we raised the question of identifying protective factors for the mental well-being of university students that can protect them from the destructive influence of the environment and socially prescribed perfectionism [4]. Our data regarding such protective factors in the student population confirm those previously obtained on a sample of schoolchildren of different

ages [2, 3]. As such a protective factor, we, following Yu.V. Zaretsky, V.K. Zaretsky and I.Yu. Kulagina [2,3], identified a subjectness, that is, an active and conscious position in educational activities. Schoolchildren and students who express this position are distinguished by greater emotional well-being (low rates of anxiety-depressive symptoms) compared to those who have a dominant object position in their studies or a dominant orientation towards external demands. Students with a subjectness position are also distinguished by their commitment to learning and higher educational motivation - they miss classes less, and more often use the Internet for learning purposes, rather than for self-presentation. Moreover, the subjectness position in educational activities turned out to be a protective factor for problematic use of the Internet [9], and another study also showed its close connection with the level of empathy and social intelligence - the ability to understand other people and provide them with constructive support in difficult situations [5]. Thus, the subjectness position presupposes autonomy and protects against the risks of dependence on the one hand, and on the other hand contributes to the development of the ability for dialogue and cooperation. Socially prescribed perfectionism, the severity of which is steadily growing among modern students, is closely related to indicators of the object position in educational activities. This allows us to conclude that it is the object position that is supported in the modern educational environment, which largely determines the social situation of youth development. This dominant environment can be called impact pedagogy. In Russian pedagogy, it is opposed by a long-standing tradition aimed at strengthening the subjectness of students - this is the pedagogy of cooperation, which includes a number of areas, including the reflective-activity approach in psychological and pedagogical counseling, where not only the concept, criteria for manifestation and methods of diagnosing the subjectness position, but also techniques for its support and strengthening have been developed [2,3,4,5,6].

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643 ONLINE - Inner speech vs. conceptualization and situation modelling: similarities and differences

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: inner speech language production language comprehension

SHORT ABSTRACT

We aimed to consider two fundamentally different models of language production and comprehension: a model by Lev Vygotsky and a model applied in contemporary cognitive psychology. The similarities between these models are (1) understanding of transition from thought to word as a stepwise process; (2) division of syntactic and lexical operations; (3) consideration of word finding as a two-staged process involving word selection by its meaning and by its auditory form. A principal difference between them is a stage of inner speech (Vygotsky) which serves to translate thought into word meanings. According to Vygotsky, language production “moves from the motive that gives birth to thought, to the formation of thought itself, to its mediation in the internal word, to the meanings of external words, and finally, to words themselves”. Inner speech involves selection of a word whose meaning is determined by the context: the content of thought, internal and external situations, inferences. The word meaning turns into *sense* which absorbs the content of thought. Inner speech has specific syntactic and pragmatic characteristics. Each inner word is a predicate (comment) to an implied topic. A chain of comments re-absorbs the content of thought and reflects the movement of attentional focus in sense field. According to Vygotsky, “inner speech creates the fields”. The concept of sense field suggested by Vygotsky is close to the concept of situation model. Other common aspects are possibilities of word meaning to change in a specific context as well as the hypotheses of simple forms of syntax.

EXTENDED SUMMARY

We aimed to consider two fundamentally different models of language production and comprehension: a model by Lev Vygotsky and a model applied in contemporary cognitive psychology. The similarities of these models are (1) understanding of transition from thought to word as a stepwise process; (2) division of syntactic and lexical operations; (3) consideration of word finding as a two-staged process involving word selection by its meaning and by its auditory form (Akhutina, 1989, 2021; Zalevskaya, 1999). A principal difference between them is a presence of inner speech stage in language production and comprehension, proposed by Vygotsky. According to Vygotsky (1987), language production “moves from the motive that gives birth to thought, to the formation of thought itself, to its mediation in the internal word, to the meanings of external words, and finally, to words themselves” (p. 283). During language comprehension, the movement is reversed: external speech – level of meanings – inner speech – thought – motive.

Inner speech is characterized by reduced phonetics, unique semantic structure, and specific purely predicative syntax (Vygotsky, 1987). Semantics of inner speech imply selection of a word whose meaning is determined by the context, namely content of a thought, inner and external situation, and word inferences. The enriched meaning of a word turns into *sense* which absorbs the content of thought.

When Vygotsky addresses syntax, he suggests that each inner word is a predicate (i.e., comment) to an implied topic. A chain of comments re-absorbs the content of thought and reflects the movement of attentional focus in sense field (i.e., field of attention).

The concept of sense field is absent in “Thinking and speech” but it can be found in “Vygotsky’s notebooks” (2018).

According to Vygotsky, “inner speech creates the fields” (Vygotsky’s Notebooks, 2018, p. 406).

Vygotsky ascribes two different fundamental characteristics to sense in the field: sense exists in the field as a *dynamic* and *integral structure* (*gestalt*). Vygotsky understands *gestalt* as a dynamic unity, which does not coincide with the classical understanding of *gestalt* as a static structure in equilibrium, but allows this concept to be applied to living beings. The concept of sense field by Vygotsky is close to up-to-date term of situation model.

Contemporary studies of text comprehension unanimously suggest that a reader or listener generates a situation model (Van Dijk & Kintsch, 1983) of the content of the text in the final stage of its comprehension. To reach this goal a comprehender generates a representation of the surface structure of a text and a propositional representation of the semantic content which are complemented by an analog model of the situation described in the text (Schnotz & Bannert, 2003; Zwaan & Radvansky, 1998). Therefore, the generation of a situation model assumes the integration of a verbal semantic structure with an analog visual or polymodal perceptual representation (Barsalou, 2008; Zwaan, 2016). During familiarization with the text, symbolic and sensorimotor representations complement and restrict each other online. Both of them activate associations in long-term memory, thereby actualizing the inferences (Kintsch, 1998; Zwaan & Madden, 2005). As a result, the comprehender constructs a holistic meaningful *gestalt* where personal experience and its emotional evaluation play an important role (Zwaan, 2016).

Exactly this interaction between an image and a word in inner word was suggested by Vygotsky. However, he also accepted that a word meaning may be a field: “in meanings it [word] can represent a field, i.e. create the equivalent of *perception in thinking*” (Vygotsky’s Notebooks, 2018, p. 334, Vygotsky’s italics). Vygotsky proposed that inner speech mediates translation from thought to word and from word to thought in both production and comprehension of an utterance. Nowadays, researchers of language use a concept of situation model predominantly when they address language comprehension. In descriptions of language production, they apply the concept of conceptualization. The concepts of sense and inner speech proposed by Vygotsky are not used in cognitive psycholinguistics. However, the idea of possibility of word meaning to change in a particular context can be found in these studies. For instance, Rolf Zwaan argues that the current meaning of a word, particularly an abstract one, is instantiated by the situation. A word can either serve as a pointer to previous information (sensorimotor representation) in memory, or be used as a placeholder in working memory for the accumulation of subsequent information on situational instantiation (Zwaan, 2016). Similarly, Ray Jackendoff and Eva Wittenberg describe transformation of conceptual structure in a particular context discussing pragmatic enrichment (Wittenberg, Jackendoff, 2023). In this work

and several previous studies, simple forms of syntax, “linear grammar” with pragmatic enrichment, are considered within phylogeny and ontogeny of language (Jackendoff, Wittenberg, 2014, 2017). Following these works, it is possible to suggest that this grammar may be found in processes of utterance production and comprehension. This suggestion seems to coincide with the understanding of inner speech by Vygotsky.

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644 ONLINE - Activity-Dialogical Model of Jointness as a Possible Tool for Forming an Ontology of Inclusion

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Promoting interaction in social practices

Keywords: common psychology jointness dialog

SHORT ABSTRACT

The report raises the question of the possibility of creating a general psychological field of research. The condition for the beginning of such research is a sufficiently complete model of psychological phenomena. It will allow us to formulate such an ontology in which all psychological knowledge can find its place and enter into a dialog with other fields of psychology. It is suggested that the work of identifying suitable universals has already been done in the cultural-activity approach. The origin of the "Activity-Dialogical Model of Jointness" and some of its properties are briefly described. It is proposed as a suitable tool to start a dialog.

EXTENDED SUMMARY

How would you formulate the main research question of your professional path? I suggest you write it down so that you can think about it in connection with the topic of the report. It will be about the foundations of psychological science.

Since my student days I have been searching for the "Rosetta Stone" of psychological knowledge and, in particular, I have been asking myself what exactly is the special significance of the other person for psychological development. Recently I have been able to formulate a tentative answer to these questions. Here it is: the meaning field of human life is formed in a deep rootedness in jointness with the Other. Interaction with the Other is necessary not only for the transmission of cultural background, but the shared field of meaning formed in this interaction plays a crucial role in the development of the human psyche proper.

Our recent publication formulated an Activity-Dialogic Model of Jointness. This model is a development of L.S. Vygotsky's idea of a "Psychological Unit". It develops F.E. Vasilyuk's methodological approach about the system of cultural-historical "Psychological Units" and continues the discussion about the place of the category "Communication" in the activity approach. The model is described in general terms as a possible integrative model not only for the cultural-activity approach, but also for other directions of psychology.

The elements of jointness, I, You, Matter, Goal, appear here as the names of entire functional fields of psychological phenomena, each of which necessarily has its representation at every moment in any human activity, as well as the Relations that bind them, directing Mindsets, Communication and Activity. The common field of jointness describes the synchronization and coordination of participants as a continuous process in which there is cyclical physiological synchronization, empathy, mutual

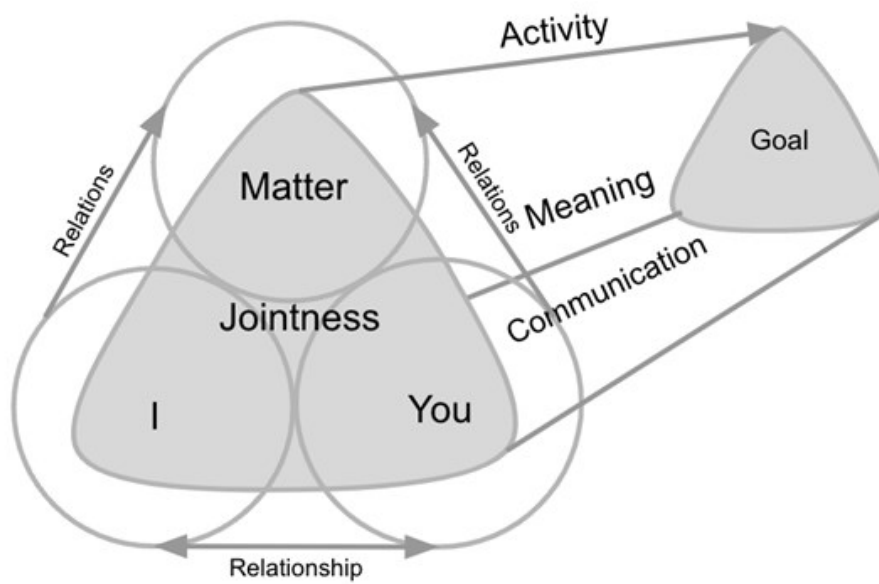
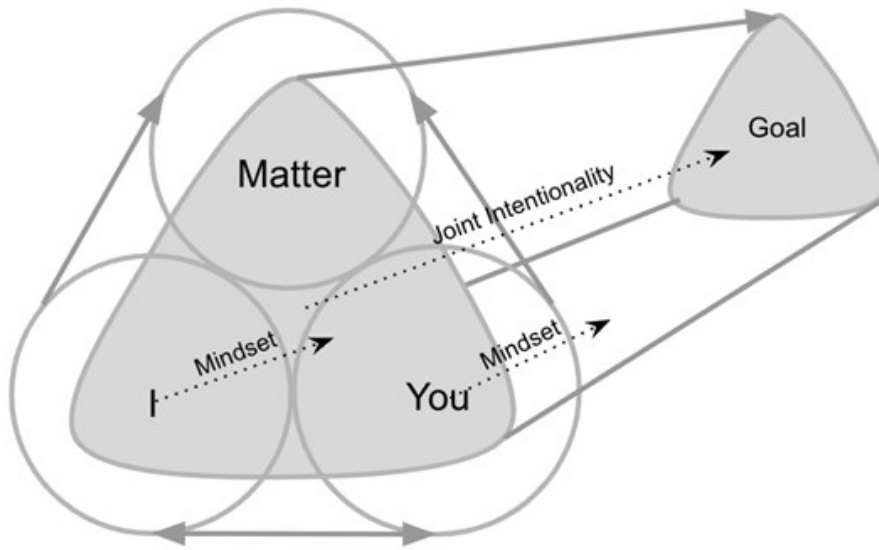
understanding and cooperation. The participation of the Other in the generation of meaning is not a mere formality, but a probable cause of people's ability to engage in long-term and complex directed behavior, to carry out activities. This is made possible by synchronization and coordination with the Other, real or perceived. Resonance appears to be a key catalyst in the process of human jointness, which allows for internalizing the experience of jointness, coordinating joint activities with a sense of meaning, and, as a result, maintaining individual activity over time. And the meaning can be seen as the name of a human feeling - a sense of jointness.

So, the terms "I", "You", "Matter", "Relations", "Mindset" ("Intention"), "Experience", "Goal", "Meaning", "Activity" - all these categories describe psychological processes in such a general way that they are understandable both in a scientific context and at the everyday level. For translating the languages of psychological domains, this generality opens up new possibilities: by relating concepts from different approaches to domains of jointness, we can begin a dialog about their systemic interrelationship.

The prism of jointness describes the formation and transmission of cultural experiences in the process of joint activity. By correlating the many concepts developed in detail in cultural-historical psychology over nearly a century of history, it becomes possible to construct a system that encompasses a wide range of psychology phenomena. This system includes the phenomenological, behavioral, biological, and sociocultural sides of their manifestations. Understanding the system of functional domains of jointness can help link related concepts used in different psychological theories, which in turn can refine the model. Studying the dynamics of jointness can provide qualitative gains in understanding mental processes.

Certainly, for the sake of finding common ground, such a view reduces many of the essential differences between psychological approaches, but it achieves a necessary level of generalizing abstraction which, when applied to each individual field of study, can be filled in with the necessary details. And, assuming that psychology and psychological practice work with a single phenomenon called "Human", we must ultimately find that level of generalization that will allow us to gather eclectic psychological ideas into a coherent whole.

While reading the report, you may have had questions about the approach and thoughts on how it could be used in your area of research. I would be happy to answer them and discuss ideas. Please email me at alena.novichkova@gmail.com.



648 ONLINE - The ways of communication skills development for children with hearing impairments for their successful inclusion in education

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Promoting interaction in social practices

Keywords: children with hearing impairment communication skills inclusion

SHORT ABSTRACT

The ability to communicate with other people is a serious problem for children with hearing impairments. Modern research shows that the speech communication skills are not sufficiently formed for children with hearing impairment even by the end of a school education. Their vocabulary is limited and their speech is expressionless. Children are often withdrawn and passive because of the loss of the verbal communication. They are afraid to be engaged with the hearing people around them, which interferes with the inclusion in the hearing society.

The aim of our research is to analyze the communication difficulties and propose areas of work for the development of communication skills for children with different levels of auditory and speech development.

The research was conducted under the Russian Children's Fund within the framework of the "Sounds of Life" project for 2 years, from March 2022 to March 2024. A total of 60 hearing-impaired children attending offline classes with specialists and 60 hearing-impaired children attending online classes were diagnosed during this period. The data analysis took into account the results of observations, deaf pedagogy, and speech therapy diagnostics.

In conclusion, based on the conducted research, all participants were divided into 4 groups according to their level of speech development, and the most relevant directions for the development of communication skills were proposed for each group. Additionally, options for activities and games were offered for each direction, which can be used in both offline and online classes.

EXTENDED SUMMARY

Communication is an important component of life and consciousness, which accompanies and organizes behavior. People need certain communicative skills to interact with each other, such as the ability to understand themselves and others, the ability to hear an interlocutor, the ability to help each other in difficult situations, the ability to establish friendly relations.

The degree of formation of these skills affects not only the process of socialization, but also the development of personality in general. A communicating skill is formed in the process of activity, and improved as a result of communication.

In Russia, the main research on the peculiarities of communicating skills for deaf children of primary school age was conducted mainly in special education conditions. This research established that the level of development of communicating abilities depends on the cognitive activity of a deaf child, interest in the surrounding world, objects, phenomena, and human activities.

Modern research shows that the speech communication skills are not sufficiently formed for younger schoolchildren with hearing impairment. Even children who understand spoken language well and are able to engage in conversation do not take the initiative, resulting in unstable communication.

A significant number of students in special boarding schools experience difficulties in formulating their own statements, their speech is agrammatic, there may be repetitions of the words, phrases, sentences, there is a lack of speech initiative and genuine dialogue. Schoolchildren with hearing impairment have insufficiently developed speech etiquette skills. They may interrupt the interlocutor get distracted from the topic of conversation, missing important information. Due to difficulties in understanding the emotions and moods of others, they do not provide help and support to each other, and put their own point of view in the foreground. However, research indicates the presence of the communicative potential of schoolchildren with hearing impairment.

Comparative research on hearing-impaired primary schoolchildren, who studied in special schools and inclusive environments, did not reveal significant differences in their communication skills. The severity of this problem is directly related to the level of speech and cognitive development.

However, in an inclusive environment, there is a daily opportunity to work out the rules, techniques, and means of communication with hearing peers, learn to interact with people around them in specific situations, and control their speech.

Our research of the features on the personal development of hard-of-hearing schoolchildren has shown that in conditions of inclusion, deaf children are ahead of their peers from special schools. However, without the help of specialists, it is almost impossible for them to master the necessary communication skills for successful inclusion by themselves.

The aim of our current research was to analyze the communication difficulties and propose areas of work for the development of communication skills for children with different levels of auditory and speech development.

The research was conducted under the Russian Children's Fund within the framework of the "Sounds of Life" project for 2 years, from March 2022 to March 2024. A total of 60 hearing-impaired children attending offline classes with specialists and 60 hearing-impaired children attending online classes were diagnosed during this period. The data analysis took into account the results of observations, deaf pedagogy, and speech therapy diagnostics.

In conclusion, based on the conducted research, all participants were divided into 4 groups according to their level of speech development, and the most relevant directions for the development of communication skills were proposed for each group. Additionally, options for activities and games were offered for each direction, which can be used in both offline and online classes.

649 ONLINE - Philosophical Foundations of Social Inclusion: The Thinking Body in Social Space

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Spinoza Ilyenkov non-organic human body

SHORT ABSTRACT

This study focuses on the ideas of the remarkable Soviet philosopher Ewald Ilyenkov and their potential use in the development of social inclusion. Ilyenkov's radicalism in approach to Marx's ideas has not been surpassed until now. His approach to developmental psychology and educational psychology can also be said to be one of the most radical versions among social constructivist theories. In the Nature vs. Nurture debate, Ilyenkov left nature no chance - everything that is human in any man is 100% social. His understanding of the human being allowed Ilyenkov to become not only one of the originators of the ideas of "developmental learning", but also to be involved in the development of methods of work with deaf-blind children in the Zagorsk orphanage, which led to significant success in the development and social adaptation of these children. Based on Spinoza's idea that thinking is inseparable from the "thinking body," Ilyenkov enriches this approach with Marx's idea that "nature is the non-organic body of man." The refusal to recognize the dominance of the biological in the bodily development of the individual might lead us to a new understanding of how not only the physical environment can be organized for people whose bodies differ from those of the "normal" statistical majority. Since, from Ilyenkov's point of view, all bodies are "thinking bodies," the social environment can be organized differently for "awkwardly" thinking bodies as well.

EXTENDED SUMMARY

This study focuses on the ideas of the remarkable Soviet philosopher Ewald Ilyenkov and their potential use in the development of social inclusion. Ilyenkov's radicalism in approach to Marx's ideas has not been surpassed until now. His approach to developmental psychology and educational psychology can also be said to be one of the most radical versions among social constructivist theories. In the Nature vs. Nurture debate, Ilyenkov left nature no chance - everything that is human in any man is 100% social. His understanding of the human being allowed Ilyenkov to become not only one of the originators of the ideas of "developmental learning", but also to be involved in the development of methods of work with deaf-blind children in the Zagorsk orphanage, which led to significant success in the development and social adaptation of these children.

The purpose of this study is to analyze how the philosophical ideas of Ewald Ilyenkov can be used today to promote social inclusion. To do this, we analyze selected texts by Ilyenkov himself, as well as by his followers. In his reflections, Ilyenkov drew on Spinoza's ideas that thinking cannot be separated from the "thinking body". In turn, Spinoza followed Descartes in the notion that one can only separate one body from another if it is in motion. But for Spinoza, no body can move independently

of other bodies; all bodies affect each other in motion. However, if these bodies are “thinking bodies”, they can choose how to move, depending on the influence of other bodies. Marx develops this idea of Spinoza and says that human, moving in the natural environment, transforms it under himself, turning the whole environment into a "continuation" of his/her biological (organic) body. Ilyenkov continues this thought of Marx, referring to the ideas of Vygotsky. Around human beings any environment is cultural: the natural, biological environment simply does not exist for them. Thus, for Ilyenkov, human beings are formed in movement, and this movement is determined by culturally conditioned objects. It is in this movement that the thinking of any individual is formed - it depends on cultural, not natural objects, and in this movement the picture of the world of any individual is formed.

This study proposes to extend this logic of “thinking formation through movement” in the physical environment to consider how the social environment can influence the development of the individual. If we return to Spinoza, the notion of affect as the result of the impact of one body on another can be reinterpreted from Ilyenkov's perspective. Where will the thinking of a child with mental retardation go if the social environment expects it to stop at this point because of "natural" limitations? How will a person who has grown up in a different cultural environment behave if his movement in the social field is constantly restricted by negative or ignoring reactions of others? In the presentation process, social situations to answer these questions can be simulated to organize interactive discussion with the audience.

The findings will show that a "thinking body" that moves in social space acquires a degree of freedom in its movement, depending on collisions with other social/thinking bodies. It is the degree of freedom of such movement in social space that can be considered as inclusion.

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Georgy Mamedov “Radical Soviet Philosophy and Emancipatory Politics: Evald Ilyenkov’s Theory of Organic and Non-Organic Human Body” – in print

650 ONLINE - Reflective-activity approach to overcoming symptoms of ADHD in primary schoolchildren

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Presentation: Poster presentation (presented digitally from elsewhere)

Theme: Promoting inclusiveness in social practices

Keywords: ADHD self-regulation reflexive activity approach

SHORT ABSTRACT

The developmental problem of children with attention deficit hyperactivity disorder (ADHD) has long existed. ADHD is a mental disorder belonging to the category of hyperkinetic disorders, which is diagnosed predominantly in childhood and is characterized by a triad of symptoms: attention deficit disorder, hyperactivity and impulsivity. Despite multiple scientific studies in different subject areas, the etiology and pathogenesis of ADHD have not yet been definitively revealed. Science continues to search for an explanatory model of ADHD, and different researchers are addressing this challenge in different approaches. All research approaches fall into two groups: those that aim to prove the genetic and biological nature of the syndrome, and those that favor social and psychological factors. As a consequence, some scientists believe that the problem of ADHD should be solved medically, while others believe that it is necessary to search for social and psychological resources to correct developmental disorders in ADHD. However, there are data that prove that drug therapy does not solve the problem of learning difficulties of children with ADHD, moreover, it requires long-term administration of drugs, which often do not lead to improvement of the condition and even entail serious negative consequences for children's health. It should be noted that within the psychological approach, specialists also have different views on the nature of ADHD depending on the theoretical and methodological foundations of the concept they use, and as a consequence, the ideas about correction and the correction programs themselves diverge significantly.

EXTENDED SUMMARY

For the last 20-30 years, the study of ADHD has been actively pursued. However, ADHD is being identified more and more often, and there are more and more children in schools with this syndrome. It can be concluded that the existing body of scientific data does not yet solve the problem of causes and mechanisms of ADHD. Therefore, we see the solution to the problem of development of children with ADHD in providing them with comprehensive psychological and pedagogical assistance.

Among all the approaches of psychological and pedagogical assistance, let us emphasize V. K. Zaretsky's reflexive-activity approach (RAA) to overcoming learning difficulties. We believe that RAA can become a significant resource in solving the problem of providing developmentally corrective assistance to children with attention deficit hyperactivity disorder. First, RAA is a system of principles and technologies for providing counseling assistance to students to help them overcome difficulties arising in learning activities, but aimed at development in general. Secondly, the counseling

assistance provided in RAA is psychological and pedagogical in nature, and it is psychological, as it implies assistance to the subject's independent movement in the problem, disclosure and growth of his/her potential in solving problems and overcoming difficulties. And thirdly, RAA is applicable in providing assistance to children with special developmental needs of various categories, including children with learning difficulties from general education schools, children with disabilities and children with deviant behavior. That is why RAA, in our opinion, has significant grounds for practical application in promoting the development of ways of control and self-regulation of activity in children with hyperactivity and attention deficit disorder.

In tracing the history of studying the syndrome, it is important to note that its methodological conditionality, which was brought to the forefront at one time or another, and the formulation of its name often depended on the scientific predilections of researchers and their preoccupation with a particular explanatory model. The diagnosis of ADHD is ambiguous, so in our study we will talk specifically about the symptoms of this disorder. Analyzing the syndrome as a whole, we see specific symptoms - motor disinhibition (hyperactivity) and inability to maintain attention.

Thus, we will not rely on the diagnosis and consider the specific symptoms - hyperactivity and attention deficit - to be the target of psychological and pedagogical help.

It is hyperactivity and attention deficit that cause problems for children already in junior school. It is important to realize that initially children with hyperactivity and attention deficit do not have intellectual impairments and their development is within the conventional norm. However, due to the manifestation of symptoms, children without the necessary adequate assistance of adults do not cope precisely in the younger school age, which subsequently leads to impaired development. Learning activity, being the leading one at this age, presents schoolchildren with a number of requirements and conditions that organize their development. This activity is new for any junior school child, so the cultural tools and means that help to become successful, the child needs to master and appropriate, based on the complex experience of arbitrary action.

In its essence, RAA emphasizes the child's development in its direct connection with the experience that the child receives, including in learning activities. Therefore, using RAA in developmental-corrective assistance to children with attention deficit hyperactivity disorder, we can provide the child with the experience of arbitrary action through the experience of overcoming school learning difficulties. The result of this process will be the development of the child's ability to regulate and control his/her own activity, if we follow the conditions of effective help proposed in the RAA.

First, it is necessary to use the resource of learning activity, as it is a true natural opportunity for the child to meet situations of real difficulty of self-control and self-regulation and overcome them.

Secondly, the child should be involved in the formation of ideas and goals of corrective-developmental work with the methods of self-control and self-regulation. This ensures a high level of motivation and involvement of the child in the work. Thirdly, movement in this direction should be for the child in the zone of nearest development. It will be important for us to understand what the child does himself in terms of ways of self-control and self-regulation of activity, and what he can do with the help of an adult. Assistance to the child should be provided in cooperation with parents and teachers and be systematic. This will ensure the stability of the child's movement in the development of the necessary abilities. Fourthly, it is necessary to provide such assistance that the process of development of the child's abilities of self-control and self-regulation in activity would be based on his or her reflexive position. This will provide a qualitative support for the development of

interiorization processes. That is, the developmental-corrective assistance will be effective in ensuring the child's awareness. Fifth, it is important to achieve such a step of the child in the interiorization of the methods of self-control and self-regulation, which provides the child's movement as a subject of independent internal self-regulation.

The main intention of our study is to build a developmental-corrective assistance with the support of RAA tools, which will be directed to the individual learning difficulties of each student with attention deficit hyperactivity disorder through the work with the ways of self-regulation and self-control by cultural means.

The following key steps are envisioned in the research design:

Identification of children with symptoms of hyperactivity and attention deficit that need developmental and corrective assistance.

Psychological and pedagogical diagnostics of children's zone of actual development and zone of proximal development. Here it will be important for us to understand what children can do on their own and what they can do with an adult.

Forming a plan for developmental-corrective work.

The stage of developmental-corrective work associated with the transfer of a cultural method of self-regulation and self-control. It is important to think about how to transfer the method, while relying on the reflection of the methods of this work itself.

The stage of developmental-corrective work associated with the organization of the process of psychological and pedagogical assistance to children to internalize a series of ways of self-regulation and self-control.

Psychological and pedagogical diagnostics of the results of developmental-corrective work.

Cultural framing of the research findings.

We assume that the result of such work will be a new system of abilities and actions of children, helping them to overcome symptoms of hyperactivity and attention deficit in learning and life situations.

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651 ONLINE - Chess for overall development project: history and results

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Presentation: Paper presentation (presented digitally from elsewhere) (30 minutes)

Theme: Bringing together theory and practice

Keywords: Chess for overall development reflective-activity approach longitudinal study method

SHORT ABSTRACT

In the small town of Satka, Chelyabinsk Region, in 2004, on the initiative and with the support of the President of Magnezit Group LLC S.P. Korostelev, on the basis of the Vertical chess Club (Foundation), with the support of the MCU "Department of Education" of the Satkinsky Municipal District, an experimental platform was launched to create a completely new unique chess technique aimed not at training chess players, but at the general development of students with any development opportunities (also when working with children with special needs).

The implementation of this idea was undertaken by the Executive Director of the Vertical Sports Complex, FIDE master A.M. Gilyazov, Honored coach, international grandmaster Yu.S. Razuvaev and Professor of MSPPU, PhD in psychology. V.K. Zaretsky [7].

EXTENDED SUMMARY

Scientific basis of the project

The scientific base of the project consists of the ideas of Lev Vygotsky about the connection of education and development [3], P.Galperin's theory of step by step formation [4], the ideas of N.Alexeev about chess role in development and reflection [2], S.Soloveichik, who supported the idea of cooperation between teachers and students, and Reflective-activity approach to psychological and pedagogical help in overcoming learning difficulties that was worked by V.K.Zaretsky with colleagues [9].

The Chess for Overall Development technology attempts to integrate the conceptual tools of these approaches. The core of integration is the idea of promoting the development of the ability to act in the mind. At the initial stage of the project, the work of P.Ya., Galperin and Ya.A. Ponomarev served as a guideline for organizing chess lessons in order to develop the ability to act in the mind [4], [6].

Program of diagnostics and some results of longitudinal study

From the very beginning of our project, we started to track the results of our work by diagnostics of different high psychological functions such as memory, visual memory, verbal intelligence, nonverbal intelligence, attention, performance, ability to act in mind [5].

This diagnostic study is being carried out as part of the Chess for Overall Development project, which has been implemented in the city of Satka, Chelyabinsk Region, from 2004 to the present. **The aim** of the study is to establish a relationship between teaching chess in elementary school using the «Chess for Overall Development» technology and the dynamics of the development of higher mental functions of students playing chess using the «Chess for Overall Development» technology (N=331),

not playing chess (N=146) or engaged in other methods (N=160). In a cross-sectional longitudinal study, methods are used to diagnose the development of attention, memory, verbal and non-verbal intelligence, performance, and the ability to act in the mind. The conclusion is made about the expediency of using the «Chess for Overall Development» technology in elementary school for cognitive development and growth in academic performance in middle and high school.

After 10 years of studying at school our experimental group finished school and among 18 graduated 11 classes students 5 had got gold medals. That was the best result in Satka and in Chelyabinsk region.

“Heart” of methodology “Chess for overall development”

Methodology of “Chess for overall development” includes two components:

Work for developing ability to act in mind on chess lessons/

And the second - organization of the educational process, on the basis of Reflective-activity approach [9].

The explanation we had found looking on the educational process through Multidimensional Model of the Zone of Proximal Development [10], [11] etc.

Conclusion

From 2004 to the present, the project “Chess for Overall Development” has been developed and is being implemented. As part of the project, a new technology for teaching chess at school was developed for the overall development of students, it was tested in schools in Satka and the Satka region, and the effectiveness of the technology for the cognitive development of students was proven.

Comparative cross-sectional diagnostics of the dynamics of development of children involved and not involved in chess using this technology shows that children participating in the “Chess for Overall Development” project are ahead of their peers, first in terms of the pace and then in the level of development of higher mental functions in primary school. In middle and high school, children who studied chess in elementary school using this technology are more successful than their peers: more than 60% of students continue their studies in high school (the average for the Satka district is 30%), and every fifth of those who complete 11(all) classes graduates from school with a gold medal. Currently, the Project is entering a new stage - the translation of the Satka experience into the education system: over two years, about 600 teachers and kindergarten teachers in the Chelyabinsk region have been trained.

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653 Artificial Intelligence to Develop Students' Conceptual Understanding in the Writing Process in English

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

Theme: Dealing with technology

Keywords: Artificial Intelligence Assessment for Learning Galperin

SHORT ABSTRACT

This study examines how students developed their conceptual understanding in the writing process with Essay Assessment Technology (EAT) - target class and Microsoft Word - comparison class. Data was collected in the three lower-secondary schools in Norway where 93 students and six teachers participated in the project.

The study employs the cultural-historical perspective and, in particular the contribution of Galperin to examine how students interacted with the feedback offered by EAT to develop their conceptual understanding during the writing process.

Findings reveal similarities in how students in both classes interacted with the feedback: they focused on the development of their understanding of the type of feedback they received from EAT (target classes) and the types of feedback they were supposed to offer each other by using the assessment rubric (comparison classes). The students in the target class used feedback from EAT as a starting point for their discussions whereas the students in the comparison class explicated their uncertainty about the types of feedback they were to provide. The quantitative analyses show that the students in the target classes improved their marks from the pre- to post-test (first and last drafts); while the marks went up from the pre- to the post-test in only one comparison class. The achievements of the students in the two other comparison classes were lower on the post-tests than on the pre-tests. These findings provide insights to educators and researchers on the potential of AI technology in supporting the development of learners' conceptual understanding and improving their writing skills.

EXTENDED SUMMARY

This study presents the findings of a research project funded by the Norwegian Research Council, which explores the use of AI technology to support Assessment for Learning (AfL) (Black & Wiliam, 2009) practices in Norwegian schools. Previous studies have shown that AI technology, such as automated corrective feedback tools, can improve writing skills and attitudes among teachers and students (Engeness & Mørch, 2016). However, there is limited research on how AI technology specifically enhances AfL practices in the writing process. This study examines students' engagement with feedback from Essay Assessment Technology (EAT) and their peers to understand its contribution to their conceptual understanding.

The study discusses the shift in language teaching towards process-oriented writing and the importance of peer and teacher feedback in the learning process (Hattie & Timperley, 2007; Vattøy,

2020). It introduces AfL as an effective approach that focuses on continuous assessment, feedback, and reflection to improve student learning outcomes. The use of AI in the English writing process has grown in recent years, with several AI writing tools developed to provide detailed and personalised feedback on grammar, syntax, and writing quality (Barrot, 2023). These tools aim to support students at different stages of the writing process and provide comprehensive feedback. The study also highlights the need to examine the impact of AI feedback on students' conceptual understanding and writing improvement using a cultural-historical theory.

This study adopts a cultural-historical perspective (Galperin et al., 2023) to explore how students interact with feedback from the automated Essay Assessment Technology (EAT) and their peers, and how this interaction affects their conceptual understanding. Drawing on Vygotsky's and Galperin's theories, the study examines the role of feedback in developing students' understanding of syntactic elements in writing, such as grammar and punctuation.

EAT is an automated feedback tool that supports AfL by providing formative feedback on spelling, grammar, and punctuation. It identifies mistakes in the text without offering specific corrections but suggests rules for students to consider. The technology utilizes an open-source tool called "Language Tool" to analyse the text and generate feedback. Students receive individualized feedback on their drafts, often including external links to grammar and punctuation rules for further improvement. The analysis found similarities in how students in both classes approached the feedback-giving process. They focused on understanding the type of feedback they received from EAT and the feedback they were supposed to offer each other using the assessment rubric. They specifically aimed to develop their understanding of grammar, punctuation, and spelling, which were identified as essential features of syntactic feedback.

However, there were differences in the feedback receiving and giving process between the target and comparison classes. In the target classes, students used the feedback from EAT as a starting point for discussions with their peers. They selected specific pieces of feedback to discuss and utilised each other as resources to further their understanding of the feedback. EAT provided feedback in distinct categories, indicating the sentences and specific places within the sentences that needed attention. This structure potentially helped students develop their conceptual understanding of the syntactic feedback they were engaging with. By applying their understanding of essential features, students addressed the specific areas of their texts prompted by EAT. In the comparison class, students expressed uncertainty about the essential features of syntactic feedback they were expected to provide to each other. Students used their peers as resources to explain the feedback, and the teacher further expanded on these explanations by providing specific examples of different types of feedback. These findings align with previous research that suggests AI technology used in the writing process can support and complement the teacher's role in facilitating students' understanding (Engeness, 2018). In the absence of such technology, it is typically the teacher who guides the students in grasping the target concepts.

The study's findings inform educators, researchers, and AI technology developers about how AI can enhance students' conceptual understanding and writing abilities. The results underscore the importance of pedagogically informed design in developing AI tools that effectively support learning.

How interaction with the participants is planned

The participants will be divided in small groups of 3-4 people to reflect on the benefits and limitations of using EAT (AI) for formative feedback in the writing process.

Allocated time: 10 min

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654 Using Artificial Intelligence in Classroom: How Lower Secondary School Teachers Facilitate Students' Writing Process with Formative Feedback

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Presentation: Paper presentation (presented in person at the congress) (30 minutes)

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Keywords: artificial intelligence automated feedback cultural-historical theory

SHORT ABSTRACT

This study offers insights into how lower secondary school teachers guide students in their writing process using an AI-based automated feedback tool. In this design-based approach study, we examine how teachers facilitated the writing process in both target and comparison classes. The research involved six teachers and their students. In target classes, students received feedback from the automated feedback tool, while in the comparison classes, the students received feedback from their peers. Using Galperin (1989) conceptualization of learning as an analytical lens, the data was analysed through quantitative and qualitatively approaches. A one-way ANOVA and interaction analysis were conducted to discern patterns in teachers' facilitation. The findings highlight a significant difference between the two groups in the orientation and communicated thinking phase, but no significant difference in the dialogical thinking phase. Notably, teachers in the comparison class provided more substantial support than teachers in the target class, suggesting that students in the target class may demonstrate greater independence in their learning, possibly due to the feedback received from the automated feedback, thus requiring less support from their teachers.

EXTENDED SUMMARY

Background

For many years, the word “assessment” was used primarily to describe processes of giving a score or grades especially in evaluating the effectiveness of instructional activities when the lesson was completed (Guskey & Brookhart, 2019). The actions that guided learning processes prior to the end of the lesson were generally not considered as assessment (Wiliam, 2011). The introduction of Assessment for Learning (AfL) has necessitated a shift in roles, not only between teachers and students but also among the students themselves. It now involves students seeking assistance, revealing their areas of misunderstanding, and collaboratively exploring ways to enhance learning through the utilization of feedback (Black & Wiliam, 2012, 2018; Duckor & Holmberg, 2017; Hattie & Timperley, 2007). The integration of technology in AfL classrooms imposes a shift in the way teachers assist and guide their students, as the students are expected to take increased responsibility for their own learning. While digital technologies may contribute to enhancing the development of students' writing skills in English (Engeness & Mørch, 2016; Lee et al., 2013; Zhang & Hyland, 2018), knowing how to facilitate students' learning with technology and promote AfL skills is a key challenge for teachers.

Aim

In AfL, a specific domain that has significantly transformed language learning is the use of digital technology, especially within the writing classroom. The incorporation of Artificial Intelligence (AI) as an automated feedback tool reshape both the methods employed by teachers in teaching and evaluating writing, yet it also highlights the change in teacher's role in facilitating students' self-regulated learning and their writing processes. This paper aims to bridge this gap by investigating how teachers facilitate the students' learning processes in the writing classroom. Research questions (RQ) for this study are:

RQ1: How did teachers facilitate students' writing process with the feedback from Essay Assessment Technology (EAT) and collaborating peers?

RQ2: How did the integration of Essay Assessment Technology (EAT) and collaborating peers influence teachers' facilitation of the students' writing processes?

Methodology

In this design-based research study (Brown, 1992), the first prototype of automated feedback tool EAT generates syntactical feedback (grammar, spelling and punctuation) to students' essay. The data collection phase took place during the autumn of 2022, across three lower secondary schools within a single municipality in Norway. The study involved a total of six teachers and six 8th-grade classes, with two classes selected from each school. This approach resulted in a sample size of 106 students, all approximately 13 years of age. Each school was randomly assigned a target class and a comparison class. In both conditions, students were required to write three drafts. Using Galperin's conceptualization of learning as an analytical lens, the data was analysed through quantitative and qualitatively approaches.

Results and Discussion

A mixed method approach (Creswell & Creswell, 2018) was adopted to analyse the data in this study. A one-way ANOVA is used to investigate the variations in the number of teacher interventions during various stages of the learning process. These interventions were calculated by the research team based on their observations in the classroom to observe if there were any discrepancies in the frequency of teacher interventions across different phases of the writing process. The data reveals distinctions in how teachers facilitated student learning across various phases of the writing process. There are variations in the frequency of teacher interventions during the writing process in the target and comparison classes. In both classes, teachers intervened more frequently during the orientation and communicated thinking phases compared to the dialogical thinking phase. Additionally, in the comparison class, the teachers intervened more frequently during the orientation and communicated thinking phases compared to the target class. This might probably indicate that students require less help from their teacher as they could independently addressed the feedback given by the system. Teacher involvement was evident in: (i) establishing the groundwork for the learning process during the orientation phase, (ii) guiding students in the development of their conceptual comprehension in the phase of communicated thinking, and (iii) directing students' focus towards the assessment criteria of the essays in the dialogical thinking phase. Through these actions, teachers in both classes fulfilled three distinct roles: orienting, executing and controlling.

While these patterns of teacher interventions generally mirror how educators might facilitate the writing process, with or without technology, the analyses conducted in the target class illuminated

the impact of technology on teachers' facilitation of students' writing. This impact was evident in three key ways: (i) introducing the technology to learners, showcasing its potential, and integrating automated feedback into students' learning during the orientation phase (ii) utilizing and interacting with automated feedback when supporting the development of students' conceptual understanding during the communicated thinking phase (iii) taking advantage on the capabilities of automated feedback to stimulate learners' reflections on the essential requirements during the dialogical thinking phase. With automated feedback in use, it consistently influenced and complemented the teacher's guidance throughout all phases of the writing process.

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655 Spiritual Coping, Resource Loss, and Mental Health in War-Affected Communities

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Presentation: Paper presentation (presented in person) (PhD Day)

Theme: Promoting inclusiveness in social practices

Keywords: spiritual coping conservation of resources mental health

SHORT ABSTRACT

This study investigates the role of spiritual coping resources in moderating the psychological impact of resource loss in war-affected Russian-speaking communities. It aims to validate the Russian version of the Short Daily Spiritual Experiences Scale (S-DSES) and analyze the interrelationships among spiritual coping resources, mental health, psychosocial well-being, and resource gain-loss dynamics. It also develops an empirically based model of spiritual coping grounded on the cultural-historical activity approach.

The study employs cross-sectional and longitudinal designs, collecting data online from 534 Russian participants in July and August 2022. Data analysis will involve exploratory and confirmatory factor analyses, content analysis, reliability analysis, convergent and discriminant validity assessments, hierarchical multiple regression analysis, structural equation modeling, and network analysis to examine the relationships between spiritual coping resources, mental health, psychological well-being, and resource gain-loss dynamics extensively.

The Russian version of the S-DSES is anticipated to demonstrate good psychometric properties, including a one-factor structure and satisfactory reliability. Spiritual coping resources are expected to moderate the relationship between resource loss and mental health significantly. Higher levels of daily spiritual experiences and spiritual meaning are predicted to be associated with lower psychological distress and better mental health indicators in the face of resource loss. However, some constellations of spiritual resources may significantly inhibit resource gain and exacerbate mental health issues. These findings are expected to contribute to the development of culturally sensitive interventions for refugees and individuals from Eastern Europe recovering from traumatic experiences, informing mental health practices and policies.

EXTENDED SUMMARY

Background

The phrase "there are no atheists in the trenches," originating during the Second World War, highlights the tendency for individuals to turn to their sacred beliefs during times of profound suffering and uncontrollable threats (Schuster et al., 2001). Recent advancements in the Conservation of Resources (COR) theory (Hobfoll, 2012), a prominent framework for disaster research and conceptualization, reveal a paradoxical effect of post-traumatic growth (Hall et al., 2006). Although increased spirituality is typically associated with coping and post-traumatic growth (Tedeschi & Calhoun, 1995), some evidence suggests that it may exacerbate the negative outcomes of resource

loss, representing merely cognitive coping mechanisms rather than tangible, active resource gaining efforts (Hall et al., 2006; Rosmarin & Koenig, 2020).

Parallel to COR-related research, a substantial body of literature highlights the beneficial effects of religiosity and spirituality in buffering distress related to traumatic experiences (Davis et al., 2023; Pargament, 2013; Park, 2005; Underwood & Vagnini, 2022). However, there remains a notable gap in research focusing on the role of spiritual coping resources in the well-being and mental health outcomes of war-affected communities within the conservation of resources framework. This gap is particularly pronounced in Eastern European populations, where cultural differences shape the use and impact of spiritual coping resources (Moreira-Almeida et al., 2021).

While it was impossible to conduct a psychological analysis of spirituality basing on the cultural-historical and activity approach due to Soviet political ideology and materialistic traditions, we see its significant potential. Moreover, we now recognize Vygotsky's deep existential position and spirituality from his notebooks that are also implicitly hidden in his theory. E.g., this note can serve as a perfect illustration of spiritual coping: "Waiting for defeats, unexpected at all. I pray for the gift of mental efforts (strength = to be a warrior = to do) and to be worthy" (Zavershneva & van der Veer, 2018). Current study aims to show the possibility to develop a comprehensive model of spiritual coping based on the concepts of the cultural-historical and activity approach (Vasilyuk, 1991, 2005, 2015; Leontiev, 2015).

Aim

This research aims to establish a robust theoretical framework and provide empirical evidence for an integrative model elucidating the roles and constellations of spiritual resources in coping with significant resource loss. It seeks to validate the Russian version of the Short Daily Spiritual Experiences Scale (S-DSES) and analyze the interrelationships among spiritual coping resources, mental health, psychosocial well-being, and resource gain-loss dynamics. By focusing on this specific cultural context, the study aims to contribute to a nuanced understanding of how spiritual coping resources influence mental health outcomes in the face of profound resource loss and trauma in Russian-speaking populations.

Methods

The study employs both cross-sectional and longitudinal designs, collecting data online from 534 Russian participants in July and August 2022. The survey includes the Short Daily Spiritual Experience Scale (S-DSES), Brief Religious Coping Questionnaire (B-RCOPE), Spiritual Meaning Scale (SMS), Short Conservation of Resources Evaluation (S-CORE), and other measures assessing mental health and psychosocial well-being. Data analysis will involve exploratory and confirmatory factor analyses, reliability analysis, convergent and discriminant validity assessments, hierarchical multiple regression analysis, structural equation modelling, and network analysis to extensively examine the relationships between spiritual coping resources, mental health, psychological well-being, and resource gain-loss dynamics.

Initially, 832 participants completed the online form on the 1KA platform. To ensure data validity, inclusion criteria were applied: participants who resided in Russia and completed all questions accurately, responded correctly to the attention check questions, and spent more than 7 minutes on the survey without displaying repetitive response patterns. Following these criteria, a final sample of 534 individuals was included in the analysis. The sample features a diverse demographic profile (a mean age of 38 and a median age of 37, ranging from 16 to 76). The gender distribution is nearly

balanced, with 45.7% male and 54.3% female participants. Participants' religious affiliations indicate that 57.6% identify as Orthodox Christians, 37.2% as nonreligious, and 5.2% as having other religious affiliations.

Expected Results

The Russian version of the S-DSES is anticipated to demonstrate good psychometric properties, including a one-factor structure and satisfactory reliability. Spiritual coping resources are expected to significantly moderate the relationship between resource loss and mental health indicators. However, some constellations of spiritual resources (negative religious coping) may significantly inhibit resource gain and exacerbate mental health issues. The emerging model conceptualizing spiritual coping in categories of cultural-historical and activity approach in light of empirical evidence is found applicable for understanding spiritual coping mechanisms and their role in experiencing and coping processes. These findings are expected to contribute to the development of culturally sensitive interventions for refugees and individuals from Eastern Europe recovering from traumatic experiences, informing mental health practices and policies (Lotzin et al., 2023; Droždek, 2015; Vieten & Lukoff, 2022).

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