DIALOGUE, DIVERSITY AND INTERDISCIPLINARITY IN THE FIELD OF LEARNING AND INSTRUCTION

BOOK OF ABSTRACTS

SEPTEMBER 7– 9 2022, BELGRADE

EARLI
SIG 10, 21 & 25
Belgrade 2022

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Aleksandar Baucal
University of Belgrade, Serbia

Smiljana Jošić
Institute for Educational Research, Serbia

Marina Videnović
University of Belgrade, Serbia

Nataša Simić
University of Belgrade, Serbia

Tijana Jokić
UNDP Integration Unit,
Government of the Reublic of Serbia

Jovan Ivanović
University of Belgrade, Serbia

Tijana Nikitović
University of Belgrade, Serbia

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From the local organising committee
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University of Belgrade, Serbia
Smiljana Jošić
Institute for Educational Research, Serbia

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University of Southern Denmark, Denmark
Giuseppe Ritella
University of Helsinki, Finland
Alexandra Nordström (JURE)
University of Helsinki, Finland

**EARLI
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TABLE OF CONTENT

The educational landscape is continuously changing due to globalisation and the transnational movement of people, ideas and resources. Dealing with diversity and practising inclusion has brought educational practitioners, researchers, policymakers, and stakeholders many opportunities. At the same time, there are challenges and uncertainties in reflecting and renegotiating long-standing beliefs, structures, practices and power relations. In order to address the complexity of such challenges, we call for the opening of a dialogic space crossing disciplinary boundaries and promoting the encounter of different theoretical perspectives, research approaches, and pedagogical strategies and methods.

The ongoing COVID 19 pandemic has intensified the need to invent new theoretically informed, pedagogically viable, ethically appropriate, and practically valuable approaches to ensure equal educational opportunities for all sections of the world's population. Still, we have a long way to go in solving the challenges that the pandemic has made evident for us both as educators and as researchers. Within this context of diversity and interdisciplinarity, SIG 10 (with focus on social interactions in learning and instruction), SIG 21 (with focus on teaching and learning in culturally diverse settings), and SIG 25 (with focus on dialogue among diverse educational theories) are organising a joint conference with the theme of Dialogue, diversity and interdisciplinarity in the field of learning and instruction in Belgrade, Serbia from September 7-9, 2022.

A variety of contributions were assembled to engage with ideas of dialogue, diversity and interdisciplinarity to reflect and explore new approaches and practices related to learning and instruction.

Welcome to Belgrade!

The Scinetific Committee

Wednesday, September 7th, 2022

S1a **Symposium: Ageing, learning and development: A sociocultural perspective**

Chair: Nathalie Muller Mirza, Université de Genève
Discussant: Roger Säljö, University of Gothenburg

This symposium aims at exploring aging following a sociocultural perspective in psychology. This strand of research considers development as a lifelong process occurring in interactions with others and as situated in cultural and institutional settings. In the field of ageing, it is characterized mainly by three lines of inquiry: it seeks to avoid a normative view on what ageing should or should not be, it focuses on the resources that are mobilized and the sense-making processes, and it considers the way personal experiences are framed by a social and symbolic, but also material world. In order to contribute to this innovative theoretical perspective (Grossen, Zittoun & Baucal, 2020), the symposium is structured towards four papers that explore different contexts and topics. Cabra and colleagues examine the conditions under which the entry in a retirement home may be an occasion for learning, and in particular the role of the material environment in the development of new forms of sense-making. Muller Mirza and colleagues examine the competences of senior volunteers engaged in associations and discuss the way to trigger and elicit "enacted competences" through methodological techniques in individual interviews. Bernal and colleagues analyze a diary; through a case study, they show how one person makes sense of his experience of retirement and reflects upon it. Videnović and Baucal, with a group of older people, examine the discourses of ageing, how they disagree with a dominant representation of ageing in terms of passivity and decrepitude and the role they give to learning experiences.

CHANGING ENVIRONMENTS IN OLDER AGE: OCCASIONS FOR LEARNING AND DEVELOPMENT

Martina Cabra & Tania Zittoun
University of Neuchatel (Switzerland)

Over recent years, it has appeared more clearly that learning and development occur not only through the person's interactions with their social environment, but also with their material and symbolic environment. In the case of older persons, it is largely admitted that the entry in a full-time retirement home may be experienced as rupture and can generate transitions. In this sense, in some cases, these moves can constitute occasions for learning. Studies in sociocultural psychology have also shown that people's activity and meaning making are in part enabled and guided by their social and material environment. In that sense, any transformation in people's living conditions is likely to offer

occasions for learning and development. Drawing on an ongoing research project, Hom-Age, in this paper we propose to examine learning and development in older persons experiencing important transformations of their housing modes: move to a new type of flats with supervisions, transformations of their own home, move to a mode of shared housing, entry in a retirement home, or change of retirement home. We aim to show whether and how these transformations can constitute occasions for learning and development, by showing how people anticipate these changes, deal with their implementation, experience them, and what consequence these changes have in terms of activity and meaning making. We finally highlight implications for the study of learning and development.

COMPETENCIES AND INTERSUBJECTIVITY IN INTERVIEWS WITH SENIORS ABOUT THEIR ACTIVITY AS VOLUNTEERS

Nathalie Muller Mirza[1], Vittoria Cesari Lusso[2] & Antonio Iannaccone[2]
[1]University of Geneva (Switzerland), [2]University of Neuchâtel (Switzerland)

Studies in the field of lifelong learning generally focus on various issues related to working life. Few investigations focus on the learning and development processes of people after retirement. The research presented here is entitled "Living Well in Retirement with Others: Commitments, Competences, and Quality of Life in the Age of Lifelong Learning" (Farinaz, et al. 2018). It studies the competencies mobilized and developed by seniors engaged as volunteers in associations. For this presentation, adopting a sociocultural approach (Grossen, et al. 2021), our aim is to contribute to the debate on competencies after retirement by analyzing interviews conducted with 8 senior volunteers. Our questions are the following: What are the competences mobilized in the activities they conduct? How and in what interactional settings are they mobilized? The results show how closely competences are linked to processes of identity reconfiguration and the development of relationships with others and the world based on a search for meaning. We also examine the interpersonal dynamics at work in the interviews themselves. It seems important to better understand the conversational conditions that facilitate verbalization of experiences often considered as "natural" by the interviewees. We will provide methodological observations that contribute to the discussion on the operationalization of the notion of "enacted competencies" (Cesari & Muller Mirza, 2022). This presentation contributes to making visible competencies that are little studied, to a population whose contributions to society are essential. It also contributes to the methodological discussion on interview techniques based on the construction of an intersubjectivity.

"ENDINGS INTO BEGINNINGS": LEARNING, DEVELOPMENT AND NARRATIVE REOPENING IN DEALING WITH RETIREMENT

Marcos José Bernal Marcos[1], Tania Zittoun[1] & Alex Gillepsie[2]
[1]University of Neuchâtel (Switzerland), [2]London school of economics and political science (United Kingdom)

Retirement is often considered as the end of a professional life and the transition to a new phase of life. It can bring to a more peaceful life, trigger to vulnerability, or can be characterized by new engagements. Given the changes that entails, why should it also not be an occasion for learning and development in itself? We approach this issue from a first-person perspective, through a persons' diary writing. We rely on a longitudinal case study, part of a project on vulnerability in the life-course supported by LIVES (Swiss Center of Expertise in Life Course Research). Our diary project focuses on 3 on-line diaries written during a 20-year period. Here, we analyze the diary of a man anticipating, experiencing, and reflecting upon his professional retirement. We thus examine the process of sense-making by which the diarist interprets his experience of retirement and ageing. The results show a narrative of hope and openness to the new opportunities for learning and development fostered by the retirement situation. This is not exempt from a narrative of struggle and suffering, associated with very difficult personal moments, including a serious period of depression and anxiety. We conclude that this retired person is very far from being that "retired from the world" man who "passes time" until he dies. We discuss the implication of this study.

THE DISCOURSES OF AGEING AND LEARNING SHARED AMONG OLDER PEOPLE IN SERBIA

Marina Videnović & Aleksandar Baucal
University of Belgrade (Serbia)

The aim of this study is to describe the discourses of ageing and learning among a small group of older people from Serbia. Representations of ageing as, degeneration, and decrepitude have been questioned and deconstructed and at the same time, the idea of successful ageing has emerged since the end of the 20th century. Serbia is considered to be one of the six oldest countries in Europe while retirement leads to a sustention decrease of the personal economic status. Semi-structured interviews were led with six people older than 60. Two broader themes were part of the interview: 1. participants' reflection and elaboration about the usual ways of talking about this period of life and 2. discourses of learning during old age. Thematic analyses revealed that five perceptions of ageing could be defined. These discourses were labelled as: (1) "it is finally the time for enjoying"; (2) "idle hands are the devil's workshop"; (3) "refusal to accept the physical changes"; (4) "it is the time for a quiet and calm life"; and (5) "it is socially isolated life". Participants expressed their disagreement with the dominant rep-

resentation of ageing in Serbia, described by the fourth discourse. The second analysis was dedicated to perceived obstacles and advantages of elder learners. Harder memorizing of the new things and slower process of learning were mentioned as the biggest obstacles while longer learning experience is perceived as the source of benefits.

S1b Research Design Forum: Provoking Encounters With, and Through Social Psychology

Author & Chair: Robb Mitchell, University of Southern Denmark

In informal learning contexts embodied social experiences have long been seen as valuable for enlivening learners' interest and engagement with abstract topics. However much of this excellent work is installed in museums which can make it less accessible to the desired wider audiences for both geographic and financial reasons. Furthermore, compared to the natural sciences, understanding how to foster public engagement with social science topics is much less developed. This project proposes to address this challenge by designing, installing, and evaluating interventions in public spaces that provide embodied experiences aiming to bring social psychology topics to life. Feedback is particularly sought in relation to evaluating and analysing the possible learning experiences of those that interact with or witness the installations.

S1c Paper session: Reflections on language in teaching and learning

Chair: Valentina Reitenbach, University of Wuppertal

POLICY FOR LINGUISTIC DIVERSITY IN EDUCATION: A COMPARATIVE EXPLORATION OF ITALY AND SWEDEN

Giulia Messina Dahlberg[1] & Barbara Gross[2]
[1]University of Gothenburg (Sweden), [2]Free University of Bozen-Bolzano (Italy)

In this paper, we adopt critical pedagogy as a theoretical framework to systematically discuss the impact of policy documents on the construction of national discourses on the provision of support for linguistic diversity in education systems in two Eu-

ropean countries, Italy and Sweden. The analysis focuses upon a selection of national policy documents in that deal with the planning and provision of Mother Tongue Tuition and the Instruction of Language of Origin since the 1990s. Examples of policy in the dataset are school laws, regulations and reports that include national, regional and local policy. We take a sociomaterial perspective in the investigation of the (re) production of the educational space of the ILO in Italy and MTT in Sweden. This means, in this study, to critically trace the ways in which language ideologies are enmeshed with legislative, political and educational discourses. We do this by following an inductive and retroductive process, wherein key-concepts, themes and critical configurations of ILO and MTT are mapped, compared and critically discussed in terms of a complex system. The analysis of educational policy for the instruction of heritage languages (MTT and ILO), sheds light on processes of marginalization and what could be a viable path towards more inclusive and socially just educational practices

STUDENTS' REASONS FOR (NOT) USING THEIR HOME LANGUAGES DURING RECIPROCAL TEACHING

Valentina Reitenbach[1], Jasmin Decristan[1], Dominique Rauch[2], Victoria Kramer[3] & Katharina Schneider[2]
[1]University of Wuppertal (Germany), [2]University of Education Ludwigsburg (Germany), [3]Goethe-University Frankfurt (Germany)

Reciprocal teaching is an effective method (Rosenshine & Meister, 1994) that can also be used to stimulate multilingual students use of their home language (Fung et al., 2003). Nevertheless, in the monolingual German-speaking school context, it is difficult to stimulate multilingual interaction in the classroom (Schastak, 2020). The paper presents reasons from the students' perspectives for (not) using their home languages during multilingual-sensitive reciprocal teaching. We used data from an intervention study with 38 classes and 684 fourth graders. Teachers participated in professional development workshops and implemented a teaching unit in their German classes, guiding students to work together in multilingual small groups. Language portraits, bilingual material and multilingual audio-pens were used to stimulate multilingual interaction. Multilingual students answered the question whether they spoke in a language other than German during the intervention and were asked to provide a reason for their answer. 63% indicated that they did speak a language other than German. Using deductive-inductive qualitative content analysis according to Mayring (2000), we identified four main categories of reasons for multilingual interaction: Individual, group, material, instruction, and time. Within individual and group reasons, sub-categories were identified: 1. students referred to language competencies and task-related reasons or 2. language-related emotional and motivational motives. For both using or not using their home languages during the teaching unit, results show that students listed mainly individual and group-related reasons that addressed language competencies and task mastery. The findings allow further insights into the stimulation of multilingual practice in elementary school classrooms.

EMERGENT LITERACY PRACTICES AND POLICIES IN THE SYSTEMS WITH TRANSPARENT ORTHOGRAPHY

Nada Ševa[1] & Nevena Buđevac[2]

[1]Institute for Educational Research (Serbia), [2]University of Belgrade (Serbia)

This study aims at defining the similarities and differences related to emergent literacy policies and practices in European transparent orthographic systems. The sample included data from 9 European countries: PISA 2018 Level 3: Estonia, Finland, Slovenia, PISA 2018 Level 2 high score: Croatia, Hungary, Italy, PISA 2018 Level 2 lower score: Greece, Romania, Serbia. ECEC systems were compared based on the following variables: general ECEC framework; increasing participation, inclusion and equity; improving quality of teaching; creating a literature environment. Regarding differences between Level 2 and Level 3 countries, one of the key findings is that the percentage of children participating in ECEC is higher in Level 3 countries, mainly due to the accessibility of ECEC services and the low number of children per ECEC teacher. Estonia and Finland have the most elaborate model of transition programmes between preschool and schools. Speech therapy or another language/ communication support is available more in Level 3 countries than Level 2 countries. ECEC teachers in Level 3 countries have more hours invested in professional development than Level 2 countries. However, several areas should be improved in Level 2 and Level 3 countries, especially for Increasing participation, inclusion and equity. The main difference is observed at the level of systemic support of the programmes for creating a literature environment at the national level. In Level 3 countries, government plays a substantial role in creating a cultural environment for emergent literacy development and continuous financial support.

13 30 - 14 30

Plenary lecture SIG25:
(Re)designing for identities: The potential of hybrid spaces

Melissa Gresalfi, Vanderbilt Univeristy

Although formal schooling occupies relatively little time over the average lifespan, the influence of that time is significant. It is often in school that we develop ideas about who we are, what we are capable of, and how we like to engage with new ideas. In some disciplines, such as mathematics, historical and ingrained practices have served to offer very narrow opportunities to learn and to engage, opportunities that fail to represent the true potential of the discipline. These narrow opportunities lead many students, and later adults, to conclude that they are not expected or entitled to be seen as mathematically competent. The challenge is how to support change—change in curriculum,

change in classroom practice, change in assessment, and change in the overall narratives about what it means to know and do mathematics, and who can do so. In this talk, I explore the potential of hybrid spaces—spaces that intentionally bring more than one practice together—to perturb and transform existing mathematics practice. Looking across research on video games, textile art, play, and computer science, I explore designs that intentionally created hybrid learning spaces with the goal of expanding new ways of engaging mathematics. Describing both failures and shortcomings as well as successes and potentials, I propose a model of designing for identities that documents how hybridity can influence the complexity of disciplines, practices, and narratives.

14 45 - 16 15

S2a **SIG 21 Invited Symposium: Engaging with Diversity and Inclusion: Unwrapping Layers of Practices**

Chair & discussant: Giulia Messina Dahlberg, University of Gothenburg

This symposium aims to make visible the invisibilities around practices, norms and values underpinning the effects of educational processes forming the actions of those involved in this process. We present various examples of educational practices in order to unpack these assumptions, involving formal and informal education: teacher and student perspectives; and different cultures and age groups. One example is the Intercultural Reflection on Teaching (IntRef) that was developed by three higher education research groups in Italy, Germany and the UK. This initiative creates opportunities for university teachers and researchers to make explicit their choices of teaching. Further examples are cases where engineering students (as part of internationalization in Swedish contexts) and immigrant youths in high school settings (in Denmark and Barcelona) are going through varied processes such as socialization, qualification and subjectification. Finally, the symposium will further develop these conversations of unpacking norms, values and expectations in the integration of adults in a Luxembourg context. Overall, the presentations unpack assumptions for both teachers and students entering the educational environment. What are the norms, values and expectations? How can they be made visible? What is the process to become included in these practices? How do practices evolve as a result of diversity?

PEER OBSERVATION AND TEAM REFLECTION ON TEACHING AND LEARNING

Alessio Surian
University of Padova (Italy)

The paper analyses processes of peer feedback and reflection among teachers in higher education through two different practices: Peer Observation – involving one to one feedback - and Reflecting Team – involving many to one feedback. Both practices were tested 2018 – 2022 through the Erasmus + IntRef that involved three core partners, Durham University, Goethe University Frankfurt, University of Padova, and a growing network of universities. The paper presents IntRef results concerning reflection on university teaching through peer collaboration and research with a specific focus on linking teachers across institutional and national boundaries through technology such as video recordings and video conferencing. It compares Intercultural Reflecting Team and Peer Observation data. Reflecting Team invites participants to share cases arising in their practice and to discuss these with a transnational group, facilitated by videoconferencing. Peer Observation involves participants video-recording their own teaching and forming transnational pairs in which recordings are shared and discussed in a one-to-one synchronous virtual chat. Quantitative and qualitative data provide evidence that higher education teachers' actions and reflections from different academic contexts, contribute to enhancing the understanding of teaching challenges in relation to issues of diversity and inclusion, and of ways to observe and analyse such issues. Further attention is given to the key dimensions of formative reflection, and implications in relation to micro credentialing.

IMMIGRANT YOUTHS' SENSE OF BELONGING AND THEIR FUTURE ASPIRATIONS: IMPLICATIONS FOR DIVERSITY

Sikunder Ali
Norwegian University of Science and Technology (Norway)

This paper uses three functions of education as articulated by Giert Biesta (2014): qualification, socialization and subjectification to illustrate how immigrant youths (with origins from Pakistan) are engaged in crafting their possibilities of life successes and in consequent handling of varied challenges inherent in these life successes. Here one can find tensions between these three processes of education. Through this contribution, the notion of foregrounds (Skovsmose, 2014; Baber, 2007 & 2012) is used to illustrate these functions as seen through these youths in cultural contexts as Denmark and Barcelona. This points out a need to develop creative approaches to handle challenges associated with diversity and inclusion as an arena of politics of meanings in education (Skovsmose, 2016). How does this insight into politics of meanings as exemplified through foregrounds of Pakistani immigrant youths in Denmark and in Barcelona (within Catalan context), help us to see tensions inherent in these three functions (Biesta 2014)? How do

these tensions in turn shape and constraint these youths' future possibilities and hopes? Moreover, how are politics of inclusion and diversity played out through the educational and political actions within societies as Denmark and Barcelona? The paper concludes with implications for diversity and inclusion of these youths through actions of education.

INTERNATIONALIZATION AT HOME? HOME / INTERNATIONAL STUDENTS' INTEGRATION INTO ENGINEERING EDUCATION

Becky Bergman
Chalmers University of Technology (Sweden)

Internationalization is part of over 90% of universities' key strategies and student mobility is a key part of that strategy. At the same time, home and international students do not tend to mix. Recent government initiatives in Sweden have stressed the need for all students to develop their intercultural competence, yet only a small minority will travel. The concept of internationalization at home argues that students can benefit from the exchange of ideas and broadened horizons on their own campuses, through bringing together home and international students. The aim of this presentation is to investigate the process of integration from a student perspective (both home and international), in particular, the effect of practices like intercultural pair and group work on academic and social integration. For engineering students, intercultural group work is an essential skill for the global workplace many will work in. Using a co-constructivist approach, the presentation will present data collected through interviews and student diaries, to build a picture of student experiences of integration into engineering education. The results show that intercultural pair work has the potential to bridge some of the academic-social divides experienced by many students in the international environment.

DIVERSITY IN PRACTICE(S) - DEVELOPING INTEGRATION PROFESSIONALS

Gudrun Ziegler
Luxembourg multi-LEARN Institute (Luxembourg)

Diversity in the context of integration is a key issue in Luxembourg, a small European country with half its population being foreign nationals. Taking into consideration the speed at which resident population is growing (2006: 430 k, 2021: 630 k), specific policies have been created, conceptualizing the development of targeted practices tailored to enable newcomers from all over the world to participate in their new (and constantly developing) (g-)local environment. The scheme of the integration contract (as implemented by law) invites (adult) newcomers to participate in (non-compulsory) classes, highlighting and enacting everyday life, languages and cultures in Luxembourg. Moreover, the

courses are conceived as "try out spaces", opening ways into practicing the "new" context, the new society. The profile of the "integration professional" who implements these classes was developed alongside with the launch of the integration contract in 2011. Moreover, the selection, expansion of the profile as well as the ongoing training of these professionals of integration has been continuously reflected and advanced in the light of growing (awareness of) diversity. Drawing from sociocultural as well as interactional frameworks (van Lier 1996), this paper highlights key aspects of the concept underlying the practices in / for diversity as implemented in the training framework which has been developed for the integration professionals.

S2b Symposium: Studying child and adolescent's challenges in their everyday life through social interaction

Chair: Valérie Tartas, University of Toulouse
Discussant: Cintia Rodriguez, Autonomous University of Madrid

This symposium aims to clarify the necessity to study social interactions in daily life activities in order to better understand the challenges and problems the children, adolescents and adults meet and how they overcome them. The four presentations have a common theoretical ground rooted in Piaget, Vygotsky, Dewey's approaches, all of them define the subject as agents, the learning situations as socially and historically situated and highlight the importance of social interactions and dialogues (even before language acquisition phase for the child) to learn and develop. This symposium offers opportunities to discuss in different fields (origin of Executive Functions, Philosophy for Children and spatial cognition) and through different periods of development (infant, adolescents and adults) how working on social interactions between children, or between children and adults, allows the researcher to grasp what poses a problem or a challenge for the child or the adolescent or the adult and how they may overcome them. The first presentation offers a new insight of the construction and development of executive functioning reconsidering the child as an agent in early years school. The second intervention shed light on a specific empirical study that illustrates the role of private gestures in early childhood self-regulation. Then, the third presentation proposed to follow the problem in a philosophical workshop with adolescents through step by step dialogue analysis and a fourth presentation focuses on the way visually impaired people collaborate to play a game together to practice space navigation without risks for them.

CONSTRUCTION AND DEVELOPMENT OF EXECUTIVE FUNCTIONING: THE CHILD AS AN AGENT IN THE EARLY YEARS

Cintia Rodríguez
Autonomous University of Madrid (Spain)

A theory with the objective of investigating the origin and development of cognitive self-regulation from the last third of the first year of life, must give the child the opportunity to behave as the agent she is. It must be based on the child's actions, objectives, and initiative. It must consider the ecological validity of the situations (Doebel, 2020). The investigation about the origin and development of cognitive self-regulation, must be anchored in psychological development (Rodríguez, submitted). During the first year of life there are many important achievements in development. One of the most significant is the appearance of the first intentional behaviours. Children begin to give themselves objectives that can be clearly differentiated from the means they use to achieve them. Soon they start to use the first tools (Piaget, 1936). Children begin to use the objects for their function, and to communicate intentionally with others through gestures, which includes ostensive gestures of giving and showing (Carpendale et al., 2021). By then, they already produce self-directed gestures. And around 12 months, they make their first symbols with familiar objects (Palacios & Rodríguez, 2018). Focusing on action means to analyse (1) gestures and (2) uses of objects and instruments - what children do and how - are the keys to the origin of the construction of EF. All that is of particular importance in the early years school.

PRIVATE GESTURES AS MEANS OF EARLY COGNITIVE CONTROL IN EARLY-YEARS-SCHOOLS' CLASSROOMS

Irene Guevara & Iván Moreno-Llanos
Autonomous University of Madrid (Spain)

Research interest on the development of early cognitive control is rising. Through standardized tasks (Devine et al. 2019), questionnaires (Hendry & Holmboe, 2021), and direct observation of everyday situations (Rodríguez & Moreno-Llanos, 2020), an increasing number of researchers agree that cognitive control begins towards the end of the first year of life. However, little is known about the means that children use to control their attention and behavior before verbal language acquisition. In this presentation, we will argue in favor of gestures as tools for early cognitive control. Literature on gesture development has focused on gestures that children use intentionally to communicate with others. However, children also self-direct gestures from the first year of life (Delgado et al., 2010). These are "private gestures", in analogy to private speech (Winsler et al., 2000). Evidence show that children produce private gestures to control their attention and actions in everyday interactions (Guevara et al., 2020; Guevara & Rodríguez, submitted) We have conducted observational investigations in early-years-schools to

study the development of cognitive control and gesture production in everyday interactions. We will present some paradigmatic examples of children using private gestures (ostensive, pointing, and symbolic) in the classroom in order to (1) guide their behavior towards significant goals, (2) explore solutions strategies when faced with difficulties, and (3) self-evaluate their actions (Guevara et al., 2022; Rodríguez et al., 2017). We will also discuss the teacher's role in promoting, adjusting, and accompanying these first manifestations of executive functioning.

"COMMON PROBLEMS" IN A WORKSHOP OF PHILOSOPHY FOR CHILDREN

Anda Fournel[1] & Anne-Nelly Perret-Clermont[2]
[1]University of Grenoble (France) ,[2]University of Neuchâtel (Switzerland)

Educational research demonstrates a growing concern for the role of social interactions in pedagogical settings and seeks to consider the dialogical nature of thinking (e.g. Mercer, Wegeriff & Major, 2020; Muller Mirza & Dos Santos Mamed, 2021). Cognitive achievements are not socially isolated phenomena. This presentation intends to contribute to these lines of qualitative investigations by a joint analysis, conducted by a philosopher (also linguist) and a psychologist, of the video-registration of a workshop of Philosophy for children with 2 teachers and 6 students. The specificity of this activity is that thinking is the object of reflection. The setting is designed to get children involved in philosophical inquiries by constituting "communities of philosophical inquiry". It is expected that the problem under discussion emanates from the students and is a "common problem". What are the intellectual, social and emotional processes at work? How do teachers and students manage these roles? Is there a "common problem" and how does it emerge and is recognized as such? The methodological procedure has 3 steps: 1) to describe what is happening while refraining from interpretating it. This is challenging because the transcription contains ambiguities that are easily overinterpreted; 2) formulation of tentative hypotheses regarding the meaning that the different participants give to the exchanges. These hypotheses are tested by investigating the course of the conversation; 3) identification of the processes involved. The results, among other things, enrich our understanding of thinking as an open-ended process at risk of being stopped at any time.

«RESCUE HIM !» : A COLLABORATIVE SPATIAL GAME FOR VISUALLY IMPAIRED ADOLESCENTS AND ADULTS

Valérie Tartas, Julie Mulet, Michel Joseph, Mathieu Raynal, Bernard Oriola, Antonio Serpa, Katerina Fibigerova & Christophe Jouffrais
University of Toulouse (France)

Research on visual impairment and space mainly consider the study of spatial knowledge in adults and in individual problem-solving situations. Few studies especially in real-life collaborative situations of route sharing, and even fewer from a developmental perspective have addressed the effects of social interactions on the spatial performance of visually impaired (VI) children, adolescents or adults. The ACCESSPACE project aims to clarify the spatial frames of reference mobilized in collaborative navigation tasks depending on age and vision level. A collaborative spatial game for two players is proposed to dyads of DV teenagers and adults (date collection in progress). The game is based on the following scenario: a zombie attack occurs in a village, the players have to save the villagers by avoiding the zombies. One of the players, the guide, has a map of the village which shows the start, the end point and the areas to avoid. He must plan the route and give instructions to guide the second player, the explorer. The latter is in front of an interactive 3D model of the same village. The players have to complete four successive routes of increasing difficulty and then, they reverse their roles. We evaluated the type and number of spatial cues mobilized (based on landmarks, directions, etc.), the spatial frames of reference mobilized in relation to the navigation performance on the model. The results will be presented and discussed in the light of work in the field of spatial cognition development, collaborative technologies and visual impairment.

S2c | **Paper session: Reflecting on theoretical foundations for teaching and learning**

Chair: Nina Bonderup Dohn, University of Southern Denmark

COMPLEX SYSTEMS THEORY: OVERARCHING FRAMEWORK OR DIALOGUE PARTNER?

Stig Børsen Hansen
University of Southern Denmark (Denmark)

This paper offers a critical discussion of the Complex Systems Conceptual Framework of Learning, which has proposed and developed in a series of writings by Kapur, Jakobson and colleagues. After introducing the notion of complex systems and key terms in the field, the third section clarifies and discusses the motivations and arguments for having complex systems theory function as a framework the theories of the learning sciences. The framework is motivated by a perceived stalemate between socio-cultural and cognitive theories of learning and is supported by a range of arguments. These argument are discussed individually, and I argue that considered as such, the arguments are unsuccessful and do not provide good reasons for adopting the framework. The fourth section takes a step back and discusses what a framework is and whether it is at all scientifically desira-

ble to aim for having one, rather than remaining with competing theoretical frameworks that might not readily integrate. Relying on ideas from both Kuhn and recent discussions in cognitive science, I point to reasons in these traditions for not having an overarching framework. With that important proviso, I point to early development in the discussion between situated and cognitive approaches to learning that in fact seemed to operate with an alternate framework for discussing theories: philosophy of language. I conclude by suggesting that this framework fares better in terms of what a framework is supposed to do, also according to those who defend the complex systems theory framework.

ONLINE LEARNING IN JEWISH AND PALESTINIAN SCHOOLS IN JERUSALEM: A POSTPHENOMENOLOGICAL ANALYSIS

Johnatan Verissimo Yanai[1], Hemy Ramiel[2], Walaa Mahajna[1], Hilla Tal[3] & Gideon Dishon[3]
[1]Tel-Aviv University (Israel), [2] Independent Researcher, [3]Ben Gurion University of the Negev (Israel)

The spread of covid-19 resulted in a hasty exodus to technology-mediated remote schooling. Increasing educational inequalities in light of this transition revealed the extent to which digital technologies' role is mediated by socioeconomic and cultural factors. We argue that better understanding such processes requires diversifying our theoretical frameworks. Specifically, we suggest a postphenomenological perspective, which highlights technology's inherent multistability – its diverging uses and interpretations according to contextual features and users' needs, aims and associated meanings. Relying on semi-structured interviews, this qualitative study examines the experiences, choices and perceptions of principals and teachers in Muslim-Palestinian and secular-Jewish primary schools in Jerusalem. We identified two digital technologies that were central across schools: instant messaging (WhatsApp), and video conferencing (Zoom). With respect to WhatsApp, our analyses revealed a tension between two stabilities: the dominant pre-covid stability of WhatsApp as an everyday communicative tool, and its emerging stability as a core aspect of teaching and learning. In the case of Zoom, different technological stabilities emerged across the two contexts. In the more affluent Jewish schools Zoom was depicted as an informal space, affording emotional bonds, and used to facilitate informal activities. In contrast, most Palestinian interviewees described Zoom lessons as a rare pedagogical resource (due to limited access), which led to concerted efforts to eliminate students' and teachers' private lives. Consequently, we argue that attention to technological multistabilities is particularly urgent with respect to the integration of everyday commercial technologies in schools across a diversity of economic, sociocultural, and political contexts.

TENSIONS IN ARAB TEACHERS' DISCOURSE OF STUDENT MOTIVATION IN LIGHT OF THIRD SPACE THEORY

Livat Eshchar - Netz[1] & Wisam Sedawi[2]
[1]Ben-Gurion University of the Negev (Israel), [2]University of Michigan (USA)

This study draws on Homi Bhabha's "third space" theory (1994) to characterize Arab teachers' discourse and perceptions of student motivation. Though most motivational theories have been developed in Western culture, the prevailing assumption is that the basic psychological needs to cultivate intrinsic motivation are universal (e.g., Self-Determination Theory, Ryan & Deci, 2009). However, specific cultural patterns can influence essential elements of learning and motivation. While collectivistic cultures tend to value reciprocity, tradition, and obedience to authority, Western cultures value autonomy, self-reliance, and individual responsibility (Klassen et al., 2011(. Thus, in this study we explore the adaptation of the highly highly individualistic Western concepts of motivation into a collectivist Arab education system. Using socio-cultural discourse analysis, this paper investigates how Arab teachers identify and discuss student motivation. The findings show the teachers often addressed student motivation, but mostly briefly without developing elaborated discussions. Teacher referred overwhelmingly more to students' external factors (94%) than to internal factors. For a close examination of teachers' discourse, we used linguistic ethnographic microanalysis of a focal case and conducted stimulated recall interviews with the participating teachers. We examined how Arab teachers, guided to adopt Western ideas about student motivation, reconcile the tensions between their practice and collectivist values. This study contributes to the third-space theory by highlighting indigenous perspectives on adopted Western ideas and to teachers' professional development efforts via culturally-sensitive motivation pedagogies which can help in mitigating educational inequalities.

16 45 - 18 15

S3a **Symposium: Dialogic interactions and the social construction of meaning in diverse literacy contexts**

Chair: Sylvia Rojas-Drummond, National Autonomous University of Mexico
Discussant: Nathalie Muller Mirza, University of Geneva

This symposium reports data from a line of research which analyses the nature and quality of dialogic interactions among peers, as they create meaning from a variety of multimodal texts. Analyses focused on the reading comprehension discussions that primary school Mexican children had as they engaged with different picturebooks which represented different text genres (narrative and expository). The dialogic functions of children's utterances were analysed using a 'Scheme for Educational Dialogue Analysis'. The reading

comprehension strategies displayed by the children were investigated using tools designed ex-professo. The first paper presents two of these methodological tools, and illustrates their use with data from children's comprehension of the expository picturebook. The second paper compares the dialogic interactions and the stances adopted by the children as they created meaning from the narrative and expository picturebooks. Results from these two papers show how children's dialogic interactions enabled them to co-construct meaning jointly, and how the different multimodal texts afforded different stances by the children. The third paper addresses the situated nature of dialogue by comparing the types of talk used by the children when discussing the narrative and expository picture-books (divergent tasks) versus a more convergent task which involved logical reasoning. Results showed how children subtly adapted the nature of their discussions to the task at hand. Lastly, the fourth paper foregrounds the educational contexts in which dialogic and literacy social practices can be promoted as part of the regular classroom activities. Theoretical, methodological and practical implications of the line of research are discussed.

THE SOCIAL MEANING-MAKERS: CHILDREN DISCUSSING AND MAKING SENSE OF EXPOSITORY MULTIMODAL TEXTS

Carlos Omar Martínez Colín, Ana Karen Vázquez Valverde & Sylvia Rojas-Drummond
National Autonomous University of Mexico (Mexico)

This paper reports selected data from a broader study with Mexican and British primary school children between 10 and 11 years old. Children were organised into mixed-gender quartets. Each quartet read and discussed four multimodal resources (an animated film, a narrative picture-book, an illustrated book containing expository text, and a webpage). The qualitative study to be presented analysed how the dialogic interactions among two Mexican quartets enabled them to comprehend jointly the multimodal expository text. Dialogic interactions were analysed using a 'Scheme for Educational Dialogue Analysis' (SEDA), whilst the quality of the reading comprehension strategies employed by the quartets for making sense of the multimodal text was assessed with a categorization system designed ex-professo. Results showed that children's dialogic interactions were characterised by the use of 'co-constructive talk', which involved peers sharing and negotiating meanings, building on their own and each others' contributions, linking ideas with previous knowledge, and striving to reach consensus. This allowed participants to gradually enrich their understanding by considering each others' perspectives. On the other hand, the analysis of reading comprehension showed that students mainly used strategies such as 'Identifying textual information', 'Anticipating ideas' and 'Generalisation' at a local semantic level, complemented by 'Providing Explanations' and 'Proposing speculations' to link knowledge at a more global level. Finally, triangulation of data from different sources revealed how children engaged in dynamic dialogic and reading comprehension processes that enabled them to recursively navigate the images and text of the multimodal resource, while constructing and transforming meanings jointly.

DIALOGUE, MULTIMODALITY AND STANCES: UNDERSTANDING THE BIG PICTURE OF MEANING CONSTRUCTION

María José Barrera Olmedo, Rocio Ivonne Hernández Cruz & Sylvia Rojas-Drummond
National Autonomous University of Mexico (Mexico)

The present qualitative study analysed the relations between dialogic interactions among Mexican primary school children and their comprehension of narrative and expository multimodal texts. It further explored the different 'stances' that peers displayed while discussing each type of text (Expressive, Efferent and Critical-Analytic stances), as well as the roles adopted for exploring multimodality (Navigator, Interpreter, Designer and Interrogator). Micro-analyses were carried out using a combination of tools from the Ethnography of Communication, a compact version of the 'Scheme for Educational Dialogue Analysis' and a coding scheme for qualifying stances and multimodality. Comparisons were made between the dialogic interactions of two quartets while reading and discussing the narrative and expository multimodal texts. Results showed how the dialogic interactions among peers were adapted to the multimodal resource in question. In addition, children mainly adopted an 'expressive stance' towards the narrative text, while for the expository text an 'efferent stance' was more salient. However, in both cases, the other two stances were also evident throughout the discussions. In relation to multimodality, both resources prompted the children to engage with the texts and images while adopting different roles as readers throughout the activity, mainly as interpreters, but also as navigators and interrogators. The design of a reading route was further adapted to the genre and communicative purpose of each multimodal resource. Overall, children explored both the narrative and expository multimodal texts in a dynamic, recursive manner, which enabled them to construct coherent meanings collectively. Theoretical, methodological and practical implications of the study are discussed.

THE SITUATED NATURE OF DIALOGIC INTERACTIONS: CHILDREN'S TALK ACROSS DIFFERENT TEXTS AND TASKS

Sylvia Rojas-Drummond & Ana Luisa Rubio Jimenez
National Autonomous University of Mexico (Mexico)

This paper analyses the situated nature of dialogue by comparing the types of talk used by two quartets of Mexican primary school children when discussing narrative and expository picturebooks (divergent tasks) versus a more convergent task which involved logical reasoning. Children's interactions while carrying out the tasks were analysed using a compact version of the analytical tool SEDA, which codes the dialogic function talk turns. This version contains 18 codes organised into 5 clusters. SEDA allowed for systematic analyses of the types of peer talk that have been previously identified as productive for learning ('co-constructive' and 'exploratory' talk); and whether these types of talk were related to the nature of the task children addressed (convergent ver-

sus divergent tasks). Results showed how children subtly adapted their discussions to the nature of the task at hand. In general, codes from the cluster 'Elaborating and reasoning' were the most frequent for all tasks. However, there were noticeable differences in the frequency of these codes in relation to the nature of the task. When children discussed the narrative and expository picturebooks (divergent tasks), the codes 'Express opinions' and 'Elaborate' were the most frequent. These patterns highlighted the prevalence of 'co-constructive talk'. In contrast, when children discussed the convergent task, the codes 'Elaborate' and 'Make reasoning explicit' were the most frequent. These patterns indicated that 'exploratory talk' was more salient. Results from this study confirm and expand findings from previous studies by Mercer and colleagues (Mercer & Littleton, 2017), and Rojas-Drummond and colleagues (2010).

FOSTERING DIALOGIC INTERACTIONS AND LITERACY SOCIAL PRACTICES IN THE CLASSROOM

Ana María Márquez, Jose Hernandez-Quintero & Sylvia Rojas-Drummond
National Autonomous University of Mexico (Mexico)

The present study analysed ways in which dialogic interactions and literacy social practices can be fostered as part of the regular classroom activities. Participants were six teachers and their students from two Mexican primary state schools. The three classrooms from School 1 ('experimental'), participated in a 'Professional Development Program' (PDP) which promoted scaffolding strategies to enhance dialogic interactions and literacy social practices. The three classrooms from School 2 ('control') continued with their regular classes. For each classroom, three video-recorded lessons at the beginning and end of the academic year were analysed. Results showed that the teaching-learning strategies of the control group exhibited similar patterns throughout the academic year. These strategies tended to be directive and transmissional and literacy was addressed in a somewhat fragmented and decontextualized fashion. In addition, teacher-student interactions were characterised by conversational sequences oriented towards managing routine classroom activities. Likewise, the teacher's follow-up movements sought evaluation of students' responses, but without necessarily extending their understanding. In contrast, comparisons of lessons from the beginning and end of the academic year revealed that, after participating in the PDP, experimental teachers exhibited a wider variety of teaching-learning strategies to promote literacy processes as articulated, situated social practices. In addition, the sequences of dialogue changed in orientation, moving from the management of routine activities towards the elaboration, deepening and reflection of meaning and ideas. Furthermore, the follow-up teacher's movements exhibited a greater number and variety of dialogic communicative acts, oriented towards promoting the joint construction of knowledge among teachers and students.

Paper session: Learning in the context of social interaction

Chair: Jelena Radišić, University of Oslo

INSTITUTIONALIZING OTHERNESS IN SCHOOL: FROM VICIOUS CHILDREN AND LEFTHANDERS TO PDA

Roger Säljö & Eva Hjorne
University of Gothenburg (Sweden)

The background of this paper is a long-standing interest in how institutionalized education has responded to diversity, historically as well as in contemporary society. One of our foci has been on the categories that have been used in education and instructional settings for describing and responding to children with different needs. The basic assumption is that categories (such as idiot, feeble-minded, ADHD, PDA and so on) play a significant role in interpreting the problems that occur in schools, and they are also consequential when put to use in decision making and when organizing instructional practices. In the paper, some of the categories that have been used historically during the early period of public schooling (mid 19th to mid 20th century) will be analysed with respect to their origin, use and conceptual clarity. The categories focused refer to alleged moral (vicious, born out of wedlock) and physical (left-handedness) characteristics. It is argued that these categories have their background in the vernacular and in everyday discourses with strong normative assumptions, and that they were adopted by institutions and later transformed into concepts with scientific connotations. The implications of this observation for current practices will be commented on (198 words)

PRESCHOOL AND PRIMARY TEACHERS' INTERCULTURAL COMPETENCE FOR TEACHING MIGRANT STUDENTS

Maiki Vanahans[1], Krista Uibu[2] & Inge Timoštšuk[1]
[1]Tallinn University (Estonia), [2]University of Tartu (Estonia)

Cultural diversity is expanding through migration, and the need to teach newly arrived migrant students (NAMSs) is becoming an important issue in the Estonian education system. Teachers are expected to help NAMSs achieve high educational standards, which requires a high level of professional qualifications and awareness of the cultural diversity of the students. The preparedness and intercultural competence of teachers to work in culturally and linguistically diverse classrooms play an important role in achieving NAMSs high educational standards. The study presented in this paper examined preschool and primary teachers' intercultural competence across its domains of attitudes, knowledge and skills. The results highlight the

value of teaching NAMSs as a teachers' professional learning experience. Also, there is a need to broaden the concept of intercultural competence in teachers' pre- and in-service education by relating inclusive practices more with cultural diversity.

DEALING WITH DIVERSITY: UNIVERSAL DESIGN FOR LEARNING IN INNOVATIVE LEARNING SPACES

Irit Sasson[1], Shirley Miedijensky[2] & Itamar Yehuda[1]
[1]Tel-Hai College (Israel), [2]Oranim Academic College (Israel)

Recent years have marked the development of constructivist pedagogical principles for designing innovative and flexible learning spaces that address student diversity based on the philosophy of universal design for learning – UDL. The goals of this study were (1) to compare the expression of select UDL principles in innovative learning spaces and traditional classes; and (2) to measure the effect of select UDL principles and learning space on the relationship between teaching style and classroom management. A total of 507 observations were carried out to document classroom pedagogical and discipline management, 265 (52%) in traditional classrooms and 242 (48%) in the innovative learning spaces of four elementary schools in the same geographical region. The results indicate that the rate of student-centered learning and pedagogical practices that express UDL principles was significantly higher in innovative spaces than in traditional classes. A moderate, positive, and significant correlation was found between teacher-centered learning and number of classroom discipline events. In addition, the learning space, integration of tasks that encourage choice, and integration of tasks that address learners' differences were found as significant moderating variables of the relationship between teacher-centered learning and the number of classroom discipline events.

SOCIAL CONTACT PREDICTS TEACHER ATTITUDES TOWARDS STUDENT HETEROGENEITY

Andreas Gegenfurtner, Özün Keskin, Jule Neubauer & Sylvia Gabel
University of Augsburg (Germany)

Pre-service teachers can become important allies for those children and adolescents at school who are considered heterogeneous, yet still little is known about pre-service teacher attitudes towards student heterogeneity and their predictors. This presentation includes the results of four studies, in which we tested the extent to which prior social contact predicts attitudes of pre-service teachers towards student heterogeneity in the classroom. Heterogeneity was considered in four dimensions: (a) students with a transgender and gender nonconforming identity, (b) students with a non-heterosexual orientation, (c) students with disabilities, and (d) students with a migrant background. Based on attitude theory and intergroup contact theory, the hypothesis was that pre-service teachers who have a heterogeneous (trans, lesbian, gay, bisexual, disabled, or migrant

background) individual in their social network (Hypothesis 1), have a close heterogeneous friend (Hypothesis 2), or have a heterogeneous family member (Hypothesis 3) would feel more favorably towards student heterogeneity than people with no social contact. Regression analyses of feeling thermometer scores obtained from N = 560 (study 1), 823 (study 2), 792 (study 3), and 967 (study 4) teacher candidates revealed that attitudes were more positive with a heterogeneous social network and a close heterogeneous friend. Family membership produced mixed results. The findings of the four studies also revealed the significant influence of teacher gender and political preference on heterogeneity-related attitudes. Implications for teacher education include increasing the attitudes of particularly male teacher candidates and promoting social contact by inviting heterogeneous individuals to share their experiences in the classroom.

S3c **Paper session: Learning and Teaching in Culturally Diverse Settings**

Chair: Ivana Stepanović Illić, University of Belgrade

PREJUDICE REDUCTION FROM CHILDHOOD TO ADOLESCENCE: THE VIEW OF GENETIC SOCIAL PSYCHOLOGY

Marios Kyriakides[1] & Charis Psaltis[2]
[1]Ministry of Education (Cyprus), [2]University of Cyprus (Cyprus)

We propose genetic social psychology as a theoretical framework to render intelligible both the suppression of the expression of prejudice and prejudice reduction in childhood. In particular, we explore the role of positive in-group norms in prejudice reduction in childhood and adolescence and their interplay with realistic and symbolic threats and subgroup identification in the post-conflict setting of Cyprus in a sample of 303 (51.5% female) 7–12-year-old students (mean age = 8.73 SD = 1.58) and 387 (60.2% female) 12–17-year old students (mean age = 14.24 SD = 1.45) collected from a random sample of thirty-nine schools in the Greek Cypriot community. The following hypotheses were tested (a) threats and social identification will form a closer link with prejudice in older than younger children (H1), (b) positive in-group norms will "trump" threats in relation to the expression of prejudice in older children (H2), (c) strength of identification would enhance the effect of positive in-group norms in the expression of non-prejudicial views (H3), and finally (d) strength of identification would enhance the impact of positive norms on prejudice reduction in childhood, through a deeper conversion process of threat reduction, whereas on the contrary, it will diminish their impact in adolescence through ideological resistance (H4). We found broad support

for our hypotheses and discuss practical implications of the findings for education.

TRANSLANGUAGING PEDAGOGY AND CREATIVE ACTIVISM FOR EARLY EDUCATION IN MULTILINGUAL LUXEMBOURG

Gabrijela Aleksić
University of Luxembourg (Luxembourg)

Luxembourg is a highly linguistically and culturally diverse country. In early education, there are 64 % of four-year old children who not speak Luxembourgish at home (MEN-JE, 2018). From 2017, multilingual early education is mandatory, which obliges teachers to develop children's Luxembourgish, familiarizing them with French, and valuing their home languages. Therefore, the present project aimed to: (1) offer an 18-hours professional development (PD) course in translanguaging pedagogy to 40 teachers over 6 months, (2) strengthen home-school collaboration, and (3) support children's linguistic, socio-emotional, and cognitive development and engagement in the classroom. The results from teacher questionnaires, focus groups, and interviews, showed that there was some positive change regarding the attitudes towards children's home languages. The interviews with 17 parents indicated that there was a need for more home-school collaboration. The tests in early literacy and numeracy with 23 preschool children over one year, identified that children performed higher in their home languages. The video observations showed that when the teachers used children's languages in the classroom, this impacted positively their well-being. Following the principles of creative activism, the author produced: (1) the website with over 100 practical activities on how teachers can involve children's languages and families, (2) the illustrated book Sumak for parents, showing difficulties with integration in a new country, and (3) the illustrated book, Mara's song for preschool children, showing how Mara finds her way in the new classroom.

'A ROLE MODEL IS LIKE A MOSAIC': UNDERREPRESENTED MEDICAL STUDENTS AND THEIR ROLE MODELS

Isabella Spaans
Utrecht University (Netherlands)

This paper explores the role model experiences of underrepresented medical students. Having professional role models impacts students' professional identity formation, their sense of belonging and their ability to permeate the hidden curriculum. However, literature emphasises the importance of the perceived similarity between a student and their role model. This raises questions about how minority students identify role models in a learning environment that does not reflect their cultural diversity. We interviewed ten University Medical Center Utrecht alumni with non-Western migration backgrounds. In these semi-structured interviews, we asked participants about role models in general and about their individual role models during medical school. Interviews were recorded,

transcribed verbatim and analysed using sensitising concepts as a priori codes, leaving room for emergent themes. Participating alumni needed some time to identify their role models, because they had not given it much conscious thought before. They ultimately identified role models from both their professional and their private life. Participants did not express a lack of professional role models in medical school; however, they did experience a lack of representation due to a more general lack of cultural diversity. Participants preferred normalising diversity over special treatment towards minority students. The findings of this study challenge the way medical education research approaches role models. Rather than having one archetypical 'excellent' clinical role model, participants engaged in selective imitation, combining aspects of multiple persons into one unique fantasy role model – like a mosaic. The participants' uncomfortable attitude towards having role models underlines how culturally embedded the concept is.

TRANSITIONS TOWARDS INCLUSIVE TEACHER IN INSTITUTIONAL CONTEXT

Tijana Jokić Zorkić
UNDP Integration Unit, Government of the Reublic of Serbia (Serbia)

This paper aims to discuss conceptual framework of my doctoral dissertation "Psychological transition towards inclusive teacher in the context of inclusive educational policy". Leaning onto several theories under the sociocultural umbrella (on implementation of public policies, meaning making, organizational change, discourse analysis), we departed from assumptions a) that introduction of inclusive policy in education system in Serbia brought great uncertainty and caused semiotic ruptures for teachers, and b) that resolving this uncertainty would be directed towards "inclusive teacher" c) if adequate institutional artefacts supported meaning negotiation. Integrated sequential strategy enabled us to distinguish between 6 groups of teachers with different positions towards inclusive education at the time of research (quantitative phase), to understand how teachers navigated their professional trajectories towards these stances, especially during ten-year-long implementation of inclusive education, and how institutional artefacts mediated these semiotic processes (qualitative phase). Results showed that inclusive education brought rupture in teachers' meaning making, but only in the sphere of their professional experience. Additionally, teachers with different professional ideologies negotiated meanings of inclusive education at different levels of abstraction and in different domains of professional experience. Also, institutional artefacts (systemic practices, schools' community, division of labour and rules) were not always coherent in the meanings and positions they prescribed and validated. Therefore, not all teachers transitioned towards "inclusive teacher" (as prescribed by the policy), but rather multitude of local inclusive education policies were created by different teachers in different schools. Given this, the research offered recommendations for adjusting theoretical framework.

Thursday, September 8th, 2022

Paper session: Reflections on diverse "resources" of learning

Chair: Valérie Tartas, University of Touluse

EXPLORING SELF-DETERMINATION OF YOUNG ADULTS WITH INTELLECTUAL DISABILITY USING A DIALOGIC APPROACH

Ana Luisa Rubio Jimenez [1], Ruth Kershner[2] & Sylvia Rojas-Drummond[2]
[1]National Autonomous University of Mexico (Mexico), [2]University of Cambridge (United Kingdom)

The present study proposes that dialogic theory may contribute theoretically and methodologically to the enhancement of self-determination of young adults with intellectual disability. Furthermore, the study aims to contribute to the field of dialogic theory which has highlighted the need to widen and deepen the understanding of dialogic education through the inclusion of diverse perspectives, and yet has until now left aside the perspectives of people with intellectual disability. Self-determination was understood in terms of an interaction between a person with volition (making conscious choices) and agency (acting with intention) and a supportive context of opportunities and encouragement. We followed an ethnographic approach to explore the experiences and enactment of self-determination of ten Mexican young adults with intellectual disability. We focused on the dialogue that displayed between them and different people. Data were generated through participant observations and group discussions. We carried out a qualitative analysis of the discussions. We created six themes that interplay in the students' decision-making process: 'decisions', 'aspirations', 'support', 'preparation', 'self-advocacy' and 'challenges'. We then carried out a Sociocultural Discourse Analysis of a set of conversations that took place when three participants were discussing a goal-setting and planning activity. We specifically focused on the courses of action that the young adults proposed during this activity to explore what prompted them and how the rest of the participants responded. In this way, we identified moves that promoted or hindered their self-determination in dialogue. The theoretical, methodological and practical implications of these findings are discussed.

BENEATH THE PUPIL'S JOB'S SURFACE: DIVERSE SELF-POSITIONINGS TOWARDS LESSONS' CONTENTAL DEMANDS

Raphael Koßmann
University of Hildesheim (Germany)

By doing their 'job', i.e. solving the tasks set for them by teachers, pupils develop their

subject skills. However, they act in the context of a class in which they can perceive each other regarding their abilities and possibly different tasks. Besides content learning, pupils, thus, also have to position themselves concerning the content-based tasks in the class context. Which reaction patterns are observable with this is an open research question, especially concerning the comparison between regularly taught pupils and those with general learning difficulties when taught in inclusive classrooms. Therefore, inclusive lessons in varying subjects were videotaped, and pupils with and without special educational needs in learning (SEN-L) were interviewed about the content taught. The current analyses are based on 20 interviews. Following reconstructions of latent meaning patterns using the method of Objective Hermeneutics, two coding schemes were developed: one on positioning patterns and one on content-related understanding. Nonparametric tests were performed to examine whether pupils with and without SEN-L differed in their positioning and whether an association between positioning and content understanding could be identified. No significant differences were found. Due to the sample, it was impossible to assess the extent to which this was because differentiated instruction methods were already used throughout the recorded lessons. However, the insights beneath the pupil's job's surface might sharpen the teachers' perceptions of how pupils deal with in-class content teaching. A questionnaire to capture positioning patterns is to be developed for further research.

PEDAGOGICAL EMOTIONS AS A RESOURCE FOR TEACHER LEARNING

Karin Sarfati Shaulov & Dana Vedder-Weiss
Ben-Gurion University of the Negev (Israel)

Understanding teacher emotions is essential in understanding teaching and learning to teach. Yet, the role teacher emotions play in their professional learning has only recently started to draw attention as a focus of investigation. Adopting a sociological perspective, this study examines teacher 'Pedagogical Emotions', i.e., emotion teachers display with regards to their work. We aim to shed light on the role of teacher emotional displays in collaborative problems-of-practice-based learning and to disentangle the emotional rules that govern these displays. We thus examined in-school professional development (PD) discourse, characterizing the pedagogical emotions teachers narrate in the stories they tell each other during PD meetings and how the group responds to them. We analyzed data from a sample of 66 PD meetings from 33 Israeli teacher groups (in 17 elementary schools), a total of 64:45 hours of audio-recorded data. This corpus included 128 stories narrating pedagogical emotions, which we coded, applying discourse analysis, for five categories: the story's elicitation, number of narrated emotions in the story, their valence (positive or negative) and object, and the group response. We selected one focal event for linguistic ethnographic microanalysis. The findings demonstrate the potential of narrated pedagogical emotions as collaborative learning resources but also how emotional rules constrained the realization

of this potential. We thus suggest theoretical frameworks for teacher learning should acknowledge pedagogical emotions as important objects for collaborative explorations. It should also consider the emotional rules that governs teacher PD discourse and, specifically, how they constrain exploration of negative emotions towards students.

PROMOTING LEARNING FOR ALL STUDENTS BY RECONCEPTUALIZING STRATEGIES FOR FORMATIVE USE OF ASSESSMENTS

Sania Zaidi
University of Illinois at Chicago (USA)

The aim of this paper is to contribute to educational research and practice through construction of a conceptual framework for strategies for formative use of assessments that support and promote social justice. Social justice can defined as, the conscious and reflexive blend of content and process intended to enhance equity across multiple social identity groups, foster critical perspectives, and promote social action (Carlisle et al., 2006). The proposed framework outlines how social justice can be integrated with practices of formatively assessing. in the classroom. It is intended to support researchers and educators in integrating components of social justice into their formative assessment practices. While social justice efforts in K-12 education must look at multiple factors and initiatives at the school, district, state, and national level, this paper tackles one aspect of a much needed systemic approach to reform in education: the potential of integrating social justice in classroom based assessments that are used to inform learning and teaching, i.e., assessments for formative use.

S4b **Paper session: Teacher learning in the context of professional collaboration**

Chair: Jasmiina Leskinen, University of Helsinki

TEACHER LEARNING FROM PROFESSIONAL LEARNING COMMUNITIES: A CASE ANALYSIS OF INTERACTION PATTERNS

Marloes Hendrickx[1], Marieke Thurlings[1] & Perry Den Brok[2]
[1]Eindhoven University of Technology (Netherlands), [2]Wageningen University and Research (Netherlands)

Teacher Professional Learning Communities (PLCs) have the potential to boost teacher professional development. However, the effectiveness of a PLC largely depends on

what happens within the PLC, that is, the interactions that take place when teachers get together to discuss their teaching. The current study examined the interaction patterns of four cases of PLCs, where teachers had contrasting self-reported learning gains. Results showed that interaction in the low-gains PLC was, even more so than the other PLCs, focused on information and opinions. High-gains PLCs' interactions were much more characterized by open and involved communication. Conversation in a PLC where teachers gained more knowledge was mainly focused on questions and answers, with teachers informing each other, whereas interaction in a PLC where change in beliefs occurred was for a large part based on sharing and elaborating upon opinions. Implications of these findings for the role of the facilitator are discussed.

A MULTIMODAL ANALYSIS OF TEACHER FACEWORK IN VIDEO-BASED COLLABORATIVE LEARNING

Adi Mendler & Dana Vedder-Weiss
Ben-Gurion University of the Negev (Israel)

Teachers' professional development (PD) can benefit from discussions of classroom videos. However, such discussions might expose teachers to face threat and impede collaborative learning. Studies of teacher collaborative learning have focused predominantly on verbal interaction. Similarly, face threat and facework, which are critical for teacher video-based learning, have been examined through the verbal mode alone. Aaccumulating research suggests that multimodal analysis, which also considers embodied interaction, reveals meanings that are not accessible when analyzing verbal interaction alone. In this study, we thus examine how multimodal analysis of both verbal and embodied interactions can broaden and deepen our understanding of facework during teacher video-based collaborative learning. In our featured case study, a science teachers' PD group discussed a video-recorded science lesson in which a teacher had tried to integrate language literacy. Through linguistic ethnographic multimodal microanalysis, we identified two major ways in which embodied interaction plays a role in face management: (a) Embodied interaction can function as facework, by mitigating face-threatening verbal moves or by reinforcing face-saving verbal moves. and (b) Embodied interaction can undermine facework, by revealing a face-threat concealed or suppressed by face-saving verbal moves. Given the critical role of facework in video-based discussions, multimodal analysis emerges as key to understanding the related challenges. This study offers a first step in this context. From a practical point of view, the findings of this study can help support and facilitate teacher collaborative learning.

THE EVOLUTION OF FACEWORK IN TEACHER COMMUNITIES

Adi Mendler & Dana Vedder-Weiss
Ben-Gurion University of the Negev (Israel)

Teachers' professional development can benefit from collaborative learning from problems of practice. Such learning depends on teachers' willingness to share their classroom practice through classroom representations – which may expose them to face-threat. To enable productive discussions, teachers need to keep a balance between engaging in critical discourse, on the one hand, without overly threatening each other's face, on the other. This important aspect of learning in teacher communities is not static; it dynamically changes over the course of interactions between teachers. In an ethnographic study, we followed the evolution of facework (i.e., management of public image) in an Israeli teacher community over one school year. Based on linguistic ethnographic microanalysis of four meetings from different parts of the year, we identified five dimensions related to face and facework: classroom artifacts, framing, facework strategies, facilitation, and teachers' line. The analysis revealed that all dimensions, except the latter, changed during the year. In contrast to previous studies arguing that teacher communities develop in a two-step linear process, moving from face-saving defensiveness to critical engagement, our findings indicate a more complex, and potentially more problematic process – a non-linear, three-stage process where teachers shifted from over-cautious face-saving tactics at first, to critical engagement later, and from there to uninhibited face-threatening criticism. This progress impacted teachers' pedagogical discourse and opportunities for learning. Our study has implications for facilitation that can strike a balance between challenging critique and mitigating facework.

<table>
<tr><td>**S4c**</td><td>**Paper session: Reflections on founding ideas of education**</td></tr>
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S4c **Paper session: Reflections on founding ideas of education**

Chair: Marina Videnović, University of Belgrade

WILHELM VON HUMBOLDT'S CONCEPT OF DIVERSITY AS A FUNDAMENTAL COMPONENT OF HIS IDEAL OF BILDUNG

Sabrina Bacher
University of Innsbruck (Austria)

The recent outcry for diversity has affected many areas of life, especially education. One pivotal focus of the discussion has been placed on how education can help create a society in which humans learn to understand, tolerate, and embrace people of diverse identities. (cf. UNESCO, 2014) This point of view links diversity to identity categories

(e.g. race, ethnicity, class, gender, religious and political beliefs)and portrays both diversity and education as two separate concepts. The present paper discusses an alternative perspective based on the German educational ideal of Bildung (esp. Wilhelm von Humboldt, 1792/1854 & 1793/2000). Bildung has been interpreted in the spirit of liberalism as an inner formation of humans as individuals. Yet, there is more to Humboldt's educational ideal, even though his conductive thoughts on Bildung have received minor attention. First, on the basis of individuality, Humboldt sheds a different light on diversity, which avoids the potential problem of stereotyping. Second, instead of portraying diversity and education as separate conceptions, Humboldt integrates diversity into his concept of education. Humboldt emphasizes the positive consequences of diversity for society. He argues that personal development is not limited to the individual's own benefit. Instead, people with diverse ideas and talents complement and inspire each other, so, eventually, the whole of humanity can flourish. Furthermore, he indicates prerequisites for such a development. The aim of this paper is to demonstrate that Humboldt's concept of Bildung contains a progressive image of diversity, which offers the opportunity to enrich today's educational discussion on diversity.

EDUCATION AND/AS WANDERING: PHILOSOPHICAL AND PEDAGOGICAL EXPLORATION OF DÉRIVE

Nevena Mitranić[1], Aleksandar Ostojić[12] & Milica Sekulović[1]
[1]University of Belgrade (Serbia), [2]University of Novi Sad (Serbia)

For decades, education has been under preassure of pedagogization – a poorly named constant demand to provide new ideas, create new methods and find new solutions as to respond to the social, economical, ecological and further crises that the world suffers. Today, in our days of the pandemic, the world war threats, uncertain futures and blurred foundations, education faces even greater challenges and higher expectations. It seems that education should depart from what it has been, wandering in search for its own meaning and purpose. Through this paper, we wander with education and with each other in experimental task of criss-crossing disciplinary boundaries to displace established as well as our own understandings of educational purpose and possibilities of functioning. We challenge the pattern in which the beginning of education (point of departure) and its goal, destination (place of arrival) are predetermined, reducing along the process any deviation from the given trajectory. Has the educational ideal ever been univocal? What kind of education deviates from the given course? Is education without a clearly defined goal set in advance possible at all, and if it is, what does it have to offer? Is it possible to travel without a destination? In the end, all these questions are summed up in one, Deridian, which is: could education be driven by deviation and wandering – education as dérive?

MULTIPLE CRITIQUES AS PREREQUISITS OF APPLYING GARDNER'S MI THEORY IN EDUCATIONAL SETTINGS

Renata Anna Dezso
University of Pecs (Hungary)

Howard Gardner, the John H. and Elisabeth A. Hobbs Professor in Cognition and Education at the Harvard Graduate School of Education received the 2020 Distinguished Contributions to Research in Education Award, the premier honor from the American Educational Research Association – in the very year when his alma mater celebrated its centennial. Professor Gardner, whose academic career started as that of a psychologist, received this award for his outstanding achievement and success in education research concerning his theory of multiple intelligences – MI, which suggests that human intelligence should be differentiated into modalities, rather than be accepted as a general ability. Although the gardnerian theory is well-known, accepted and applied in every day educational venues world-wide, it has met several critical comments throughout the past four decades. The aim of my presentation is to give an overview of these critiques for the educationalist audience applying MI theory. In this contribution I do not intend to interpret the birth, the characteristics, the possible educational adaptations, or the actualities of MI – as such summary would point well beyond the framework of a conference presentation. My analysis outlines the main sources of relevant international literature in order to widen the related professional horizon of educationalists about the critical phenomena related to MI. I am referring to the concept of intelligences in this talk, using plural, due to the theorist's initial intentions.

SOCIOCULTURAL POSITIVISM: CRITICAL EVALUATION IN THREE RESEARCH VIGNETTES

Eugene Matusov
University of Delaware (USA)

The paper develops a critical evaluation of sociocultural positivism by contrasting it with universal positivism, on the one hand, and with unique authorial dialogism, stemming from Bakhtin's dialogical framework, on the other hand. I will bring three research vignettes to make my analysis more grounded: a vignette on universal positivism, a vignette on sociocultural positivism, and a vignette on authorial ethical dialogism. Sociocultural positivism is not rebuked or rejected, but rather it must be limited in search for the boundary of its legitimate use and existence. A complementary framework based on Bakhtin's philosophical framework of dialogism that would deepen sociocultural positivism is proposed.

S5a **SIG 10 Invited Symposium: The past, present, and future of research on social interaction in learning and instruction**

Chair: Valérie Tartas, University of Toulouse
Discussant: Anne-Nelly Perret-Clermont, Université de Neuchâtel

This symposium proposes turning our attention to research in the field of psychology of education, which can potentially help us cope with some of the theoretical and methodological challenges related to social interactions in various learning settings. The aim of the symposium is twofold: first, to identify what we have learned from past research on social interactions. Specifically, the symposium represents an overview of the research that first introduced the pivotal role of social interactions in the study of learning. Anchored in socio-cognitive and sociocultural theorizing, the presented research posits social interactions as the origin of cognitive development and as processes in which children learn - that is, how they may transform themselves, their knowledge, and their relations with the world. Second, the symposium provides a place for reflexive examination of the epistemological, theoretical, and methodological considerations of the central concepts used in studying social interaction. The first paper presents a historical view of social interaction studies across learning contexts situated in the context of the birth and development of the European Journal of Psychology of Education. The second presentation offers a space to discuss controversies in education and social interactions and their impact on current research. The third paper, based on the conclusions of a workshop entitled "Direct interaction: methods of research epistemology, and conceptualization", highlights the approaches, methods, and epistemological models capable of capturing social interaction in its specificities.

SOCIAL INTERACTION IN LEARNING AND DEVELOPMENT THROUGH AN ORAL HISTORY OF THE EJPE

Charis Psaltis
University of Cyprus (Cyprus)

Last year, 2021 marked the completion of 40 years since the inception of the idea of the establishment of the European Journal of Psychology of Education. The idea was born in an international conference at Aix-in Provence that took place in 1981 organised by Michel Gilly, Augusto Palmonari and Anne-Nelly Perret-Clermont, the founding mother and fathers of EJPE, with the support of the European Laboratory of Social Psychology via Serge Moscovici and Willem Doise. This talk is an account of the motivations, epistemological views and interests that led to the establishment of the journal in the eyes of founding figures who kindly offered their oral history accounts. It is also an effort

to situate this development not only in the scientific field of psychology of education or of the social sciences at large but also in its socio-historical and political context.

THEORETICAL CONTROVERSIES IN RESEARCH ON LEARNING AND SOCIAL INTERACTION

Giuseppe Ritella[1], Antti Rajala[1] & Aleksandar Baucal[2]
[1]University of Helsinki (Finland), [2]University of Belgrade (Serbia)

Research on social interaction and learning has been historically characterized by several controversies and theoretical debates. The relevance of social interaction for learning was in itself an object of controversy between approaches stressing cognitive aspects or individual behavioral patterns and approaches emphasizing the social nature of learning. More recently, the object of controversy has been less about the relevance of social interaction and more about how it should be conceptualized. Even though some controversies are explicitly connected with larger societal phenomena, when social and historical conditions change, the relevance and significance of academic debates might need to be re-considered. Indeed, when major societal transformations take place, social actors face the challenge to rethink the categories used to make sense of the world. Considering that current transformations are posing several challenges on (educationally-relevant) social interaction, we question if and how old controversial issues can gain a renewed relevance in the new context and how currently emerging theoretical debates can contribute to enhance our understanding of learning. The presenters of this paper will illustrate some theoretical controversies/open issues connected with their research projects and invite the audience to reflect on the relevance and significance of challenges, controversies and open issues characterizing the current theoretical landscape on education and social interaction. The aim is not to offer a comprehensive analysis of existing controversial issues, but to trigger reflection and discussion around the significance that some historically developing and currently emerging controversies might have for the future of research on learning and social interaction.

SOME LIVE QUESTIONS ON DIRECT INTERACTION IN LEARNING: PERSPECTIVES AND ISSUES

Anda Fournel[1] & Thea Ionescu[2]
[1]Grenoble Alpes University (France), [2]University Cluj-Napoca (Romania)

Last June in Cluj-Napoca (Romania), the Department of Philosophy of the Babes-Bolyai University (Romania) and Lidilem, the Linguistics Laboratory at Grenoble Alpes University (France), organized an interdisciplinary workshop (bringing together philosophy, psychology, educational sciences and linguistics) on the theme of "direct interaction". We aimed to address aspects of the epistemology and the conceptualization of face-to-face interaction from multidisciplinary perspectives and to cross them through the study of

various interactions in different situations. Thus, we have explored classroom interactions, learning in interaction in a professional context, learning in the context of migration, exolingual vocational training, gesture-based interactions in language acquisition, but also recovery from addictions-based peer interactions, interaction in image-based medicine, interaction in the challenge through social practices like dance, or political talk-show, human-machine interaction, interaction on Zoom, everyday conversations, etc. We proceeded in a collaborative and interactive way, through a workshop process, with the aim of highlighting which research methods, which types of investigation and which underlying epistemological models are capable of capturing interaction in its specificities. Is it possible and desirable to have common basic criteria for interaction whatever our discipline, and then bring specific interaction situations to analyze them in the light of the same framework? We will report here some of the outcomes of this collaborative investigation process, in the form of issues and perspectives emerging from our Workshop, focusing on those aspects that might be of direct relevance in thinking further, in the present symposium, the role of social interactions in learning situations.

S5b

Paper session: Teacher practices outside the subject didactics

Chair: Tijana Jokić Zorkić, Government of the Reublic of Serbia

GARDNER'S INTERPERSONAL AND INTRAPERSONAL INTELLIGENCES IN THE EARLY CHILDHOOD EDUCATION

Greta Abraham
University of Pecs (Hungary)

The subject of my research is the investigation of the possible manifestations of inter-, and intrapersonal intelligences, as part of Gardner's theory of multiple intelligences. The aim of my research is to present how socialization in the education system affects children's inter-, and intrapersonal intelligences. According to my hypothesis the closed nature of socialization and spontaneous learning processes in the continental education system do not allow for a positive influence on children's social skills. The research results support that a child who is less able to mobilize his/her inter-, and intrapersonal intelligences may not be able to apply these aspects properly in the continental education system. During the survey on the relationship between continental education system and social skills, I ensured validity by using different techniques and resource groups. I used a sociometric questionnaire, a questionnaire exploring the characteristics of socio-community characteristics, a questionnaire exploring the family background characteristics, and an observation method involving pre-schoolers and pre-school teachers in the Hungarian-language pre-school environments of Vojvodi-

na (Magyarkanizsa), Serbia. I conducted my research from fall 2019 to spring 2021.

EXPERIMENTAL GROUP FORMATION WITH THE VARIATION OF PERSONALITY TRAIT EXTRAVERSION

Adrienne Müller
JGU Mainz (Germany)

Active, cooperative learning shows clear advantages in establishing knowledge and is of high relevance especially in studies (Johnson, Johnson, & Smith, 2014). Learning in such a group setting proves to be an effective didactic strategy to increase student performance, as it triggers learning as well as socialization processes. This results in significant benefits to establish knowledge (Fernández-Breis, Castellanos-Nieves & Valencia-García, 2009). While the benefits from group work are well documented, the question of the importance of group composition is still largely unresolved (Halfhill et al., 2005). This paper addresses the criteria by which a group can be successfully composed to be maximally productive and satisfied with the particular outcome. Algorithmic support for group formation enables the qualitative improvement of learning group composition with the goal of enabling each learner to experience the best possible conditions for learning growth in the respective learning group context (Konert et al., 2016).

OPPOSING VIEWS OF TEACHER PROFESSIONALISM: INSTITUTIONALISM VERSUS AN ONTOLOGICAL, FIDUCIARY AGENT

Bryan Campbell
University of Delaware (USA)

The paper is an autobiographical exploration of the tension between administrators' institutionalist views of "teacher professionalism" and my ontological, fiduciary view as a high school teacher in the United States. In this paper I examine the differences between these contrasting views and their implications for diversity in both professional practice and students' educational opportunities and expression. I will develop an explanation of how an ontological, fiduciary view of teacher professionalism can better serve the different, emerging interests, needs and desires of students than the rigid, conventional institutionalist views of professionalism that suppress diverse student and teacher voices. Despite its efficacy in supporting students, I will show how the ontological, fiduciary view of professionalism can be threatening to administrators who both rely on and support institutionalism.

Symposium: Design Principles in Education

Chair: Roland Hachmann, University of Southern Denmark
Discussant: Melissa Gresalfi, Vanderbilt University

In development studies, the fundamental aim is to develop design principles. Design principles play key roles in education. However, there is a lack of consensus on how design principles should be understood, generated, and applied. This raises ontological questions about the nature and status of design principles and their role in educational settings as both abstract formulations and theory and prescripts for different types and aspects of educational interventions and contexts. The four papers address these issues both from a theoretical and empirical perspective, investigating different aspects of design principles, and more generally, conceptualizing different understandings and their nature as such. The first paper explores how useful design principles in the form of abstract guidelines actually are for educators. Broadening this, the second paper takes on the question of how design principles are created in educational contexts and their methodological trustworthiness, transferability, and re-usability. The third paper explores and discusses Conjecture Mapping as a concrete framework for design researchers to be specific about the theories guiding their design. The fourth paper takes a methodological approach to explore design agency in participatory research for the creation of design principles. Empirical examples are provided throughout the papers covering from early childhood education to higher education. We are hoping that this symposium will promote dialogue between researchers within the field through presentations touching on both theoretical, methodological, and empirical implications.

A SITUATED PERSPECTIVE ON THE USEFULNESS OF DESIGN PRINCIPLES

Nina Bonderup Dohn[1] & Natalie Spence[2]
[1]University of Southern Denmark (Denmark),[2]University of Sydney (Australia)

Educational Design Research encompasses an array of topics and tenets. One major strand focuses on developing design principles as guidelines for educators and educational designers (Nieveen & Folmer, 2013; Van den Akker, 1999). Such design principles are formulated at a fairly general level, as abstractions from the specific practices they derive from. However, studies within as different research traditions as phenomenology (van Manen, 1995), situated knowledge (Dohn, Hansen, & Hansen, 2020), practice theory (Schatzki et al., 2001) and workplace learning (Beckett & Hager, 2002; Eraut, 1995) combine to delineate a view of educators' knowledge-in-practice as concretely realized in situated, embodied agency (Dohn, 2021). This raises the question of how useful design principles in the form of abstract guidelines actually are for educators.

The aim of this paper is to answer this question. This is done through, first, a theoretical investigation of the roles which explicated abstractions can have in knowledge-in-practice, and second, an empirical illustration consisting of a recent educational study focusing on designing for students' epistemic agency, and a follow-up course design. The empirical illustration indicates, on the one hand, that practice unfolds emergently, but that design principles can be articulated as rationalizations of practice after-the-fact. On the other hand, the follow-up course design shows that design principles can help set an overall direction, if combined with explicit examples that allow designers to 'fill out' the meaning of the principles with their tacit practical and experiential knowledge.

HOW DESIGN PRINCIPLES ARE CREATED IN EDUCATIONAL CONTEXTS: CURRENT APPROACHES AND ISSUES

Inger-Marie Falgren Christensen[1] & Lina Markauskaite[2]
[1]University of Southern Denmark (Denmark),[2]University of Sydney (Australia)

The aim of this paper is to examine how design principles are created in educational contexts. Initially, building on methodological literature, we provide an introduction to design principles. Following this, we report findings from a representative literature review of research papers reporting design principles. Two main pathways for the creation of design principles are identified, namely 1) research first that draws on theories and empirical evidence, and 2) experience first in which design principles are generated drawing on current practices and user experiences. Based on the review, we claim that current practices for creating design principles raise critical questions about methodological trustworthiness, transferability, re-usability and practical usefulness. We conclude that methodological rigour and transparency are often lacking in current practices for creating and reporting design principles which raises questions about their quality. In our presentation, we elaborate and illustrate our claims above. We argue that there is a need to enhance the methodological transparency and rigour of current approaches used to create and present design principles, and that it is necessary to raise the methodological awareness of their creators and users.

CONJECTURE MAPPING AS A TOOL FOR LEARNING DESIGN AND THEORY BUILDING

Roland Hachmann[1] & Peter Reimann[2]
[1]University of Southern Denmark (Denmark),[2]University of Sydney (Australia)

Design principles can be seen as guidelines to develop, plan, implement or communicate a design and its features (Hansen, 2021). Conjecture mapping (CM) is an iterative technique for making the goals and theories that guide the design of a learning environment more explicit so that they can be empirically tested and refined (Sandoval, 2014). CM is, in this sense, a technique to build bridges between the practices of learning design and learning research. At the heart of CM is the visual display of how

design elements lead to the emergence of mediating processes, which in turn lead to outcomes (Reimann & Thompson, 2021). Critics of DBR emphasise that this methodology lacks clear standards and cannot simultaneously build theory while improving program design (Kelly, 2004). This paper explores and discusses the role and usefulness of CM as a framework for design researchers to be specific and concrete about the theories guiding their design. This is done through a theoretical investigation of CM and its role in DBR, and second, an empirical illustration consisting of a recent educational design study focusing on designing for middle-school pupils' Computational Thinking within a non-computer science subject. The empirical example demonstrates how conjecture maps can be useful as analytical tools and future guidelines.

PARTICIPATORY RESEARCH APPROACHES ON DESIGN PRINCIPLES FOR EMERGENT LEARNING

Ane Bjerre Odgaard[1] & Dwayne Ripley[2]
[1]University of Southern Denmark (Denmark),[2]University of Sydney (Australia)

Educational design research (EDR) seeks to concurrently advance theory and generate useful design knowledge for practitioners. EDR is led by educational researchers who provide rigour and theoretical grounding to research (Dunn et al., 2019). Systematic reflection by an experienced researcher, whether on theory-informed interventions in EDR (Plomp, 2007), or on practice-informed theory (Bakker, 2018) can yield actionable knowledge in the form of design principles. However, participatory research approaches which claim objectivity and equity risk perpetuating privileged positions of power (Bang & Vossoughi, 2016) which may limit equitable stakeholder design agency (Sannino, Engeström, & Lemos, 2016; Virkkunen, Vilela, Querol, & Lopes, 2014). The aim of this methodological paper is to explore design agency in equitable participatory research for the creation of design principles. The paper explores emergent learning in two distinct educational settings – early childhood education in Denmark, and higher education in Australia. First, examination of research approaches in preschools are discussed, reporting on a project where children, researchers and preschool teachers codesign for playful and explorative learning computational thinking. This is followed by examination of a relational research approach taken to generate design principles for an interdisciplinary university course. The paper proposes that in both research contexts, enabling equitable design agency with forms of dialogic approaches may benefit EDR, but requires reconsideration of how design principles for emergent learning are created and validated, and offers suggestions for retaining rigour while being more inclusive of participants throughout the research processes.

13 30 - 14 30

Plenary lecture SIG10:
The pleasure of thinking and learning all lifelong

Tania Zittoun, Univeristy of Neuchatel

People learn and develop from birth to death, in situations aimed at being educational, and in all kinds of other situations. Doing so, people build diverse sorts of knowledge – some corresponding to formal curricula, others corresponding to one's curiosity, interest, or need to adjust to the demands of the social world. Over the last 10 years, studies adopting a sociocultural approach have theorised and accounted for a series of important dynamics: the role and modalities of social interactions and dialogue in learning and development; the sense people attribute to the object of knowledge; the role of imagination in these activities; and the continuities between knowledge in formal settings and elsewhere, from childhood to late adult life. In this keynote, I propose to look back at this research, and to ask one question: what about the pleasure of thinking and learning? My proposition is that, by putting pleasure back in the picture, we may open new doors for the future of research in learning and development.

15 15 - 16 45

S6a

Roundtable: Supporting collaborative problem-solving in education: challenges and enabling conditions

Panellists: Aleksandar Baucal (University of Belgrade, Serbia), Anne-Nelly Perret-Clermont (University of Neuchâtel, Switzerland), Nathalie Muller Mirza (University of Geneva, Switzerland), Valérie Tartas (University of Toulouse, France), Charis Psaltis (University of Cyprus, Cyprus), Ivana Stepanović Ilić (University of Belgrade, Serbia) & Boris Jokić (Institute for Social Research, Croatia)

Chairs: Aleksandar Baucal & Ivana Stepanović Ilić, University of Belgrade

The development of competencies required for collaborative problem-solving (CPS) and teamwork is a prerequisite for both individual and societal progress in the contemporary world. This is a reason why collaborative problem solving is getting a prominent place in education in many European countries. However, education practice has suggested that the naïve use of group work in education is related to a lot of disappointments and unintended consequences. Engaging and productive collaborative group work in

the classroom requires ensuring some enabling conditions and teacher scaffolding both before and during the peer collaboration. The round table aims to identify conditions and characteristics of teachers' support for students that can foster engaging in productive, collaborative problem-solving. During the roundtable, participants will be invited to reflect following issues: (a) own experience with different modalities of collaborative problem-solving in education; (b) the critical role of teachers in providing scaffolding to students before and during the collaborative problem solving, and (c) selection of topics that could provide good opportunities for productive collaborative problem-solving. Discussion in the round table will help us identify relevant elements or dimensions of the model for students' support and training that aims to develop and/or improve students' capacities for collaborative problem-solving. Also, this round table will shed light on factors relevant for the development of successful training to support students' capacities for dialogue and collaborative problem-solving within peer interaction.

S6b Paper session: Reflections on learning and social interaction

Chair: Giuseppe Ritella, University of Helsinki

NEGOTIATING COLLECTIVE INNOVATION PRACTICES IN A MAKERSPACE

Jasmiina Leskinen[1], Anu Kajamaa[2] & Kristiina Kumpulainen[3]
[1]University of Helsinki (Finland), [2]University of Oulu (Finland), [3]Simon Fraser University (Canada)

The need to foster citizens' innovation skills is widely recognized. Although the potential of makerspaces to foster students' engagement in practices leading to innovations is acknowledged, current research lacks understanding of how makerspaces promote students' innovation skills and what underlying mechanisms are at play. Further, the way in which innovation practices are formed in makerspaces has been particularly overlooked in the K–12 context. In this study, we use ethnographic video data of Finnish elementary school students' and their teachers' interaction in a makerspace and apply methods of abductive Video Data Analysis to investigate students' and teachers' innovation practices. Our results show that in the makerspace, students took actions that echo skills typically regarded as important for innovation creation. Further, these actions contributed to the creation of innovations that were, in fact, an outcome of students and teachers collective innovation practices, namely: taking joint action to innovate, navigating a network of resources, and sharing the innovation with the community. Adding to previous research knowledge, our results stress the crucial role of such practices

and also the contextual factors of makerspaces – such as the appreciation of personal projects and distributed expertise – for enhancing collective innovation practices..

TEACHERS' STUDENT-ORIENTATION IN AN INTERDISCIPLINARY DESIGN ABOUT LIFE SKILLS AND WELL-BEING

Marthe Wiseth Fundingsrud, Kenneth Silseth & Anniken Furberg
University of Oslo (Norway)

Teachers' orientation to students' personal experiences in an interdisciplinary instructional design about life skills and well-being The aim of this paper is to explore how teachers enact interdisciplinary instructional designs targeting student learning and understanding of life skills and well-being. More specifically, we aim to investigate what opportunities and challenges teachers face when supporting students in learning about such topics in school, which relates closely to their everyday lives outside school. In order to address what challenges and opportunities teachers face, we will employ a sociocultural approach to learning and instruction. The data were produced during an interdisciplinary school project about public health and life skills in a lower secondary school in Norway. The main data material constitutes 60 hours of transcribed video recordings of the two teachers' interaction with each other during the lessons, and student-teacher interaction as students were working in groups. The analysis shows that the teachers facilitated a learning environment where students were willing to engage with the different focal topics addressed in the school project, by means of invoking their own ideas, understandings and thinking. However, the analysis also displays some challenges that the teachers faced when enacting this type of interdisciplinary instructional design. These challenges relate to how the teachers should frame the tasks and whether and how they should scaffold students work. In the paper, we discuss the implications of these findings for instructional work.

REVISITING THE SITUATED PERSPECTIVE OF TPACK CONTEXT IN TEACHER-RESEARCHER REFLECTIONS

Ewa Skantz-Åberg, Annika Lantz-Andersson, Mona Lundin, Pia Williams & Apostolia Roka
University of Gothenburg (Sweden)

TPACK is a framework that accurately describes teachers' technological, pedagogical, and content knowledge, necessary for integrating technology in teaching. TPACK additionally includes contexts since teaching is dependent on situational conditions. What the concept of context encompasses, however, remains ambiguous and untheorized. Adhering to the growing interest in revisiting the original situated perspective of TPACK, this study aims to explore the significance of context, as articulated in collaborative teacher-researcher reflections about teachers' TPACK in technology-mediated teaching activities. The study adopts a design approach and theoretically leans on TPACK in Situ,

developed by Pareto and Willermark (2019), which presupposes that teachers' TPACK is demonstrated in teaching activities, a view consistent with the sociocultural perspective underlying the study. This perspective implies that context is understood as dynamically shaped by participants' interaction using available cultural tools and the surrounding environment. The study involves nine Swedish preschool-teachers and five researchers and comprises three iterative phases: i) preparatory workshops, ii) enacted teaching activities, iii) reflective discussions between teachers and researchers elicited by video-sequences recorded during the previous enacted teaching activities. Phase three is also video recorded and constitutes the main data. These recordings are transcribed and subject to thematic coding in NVivo 1.6 in accordance with TPACK in Situ constructs, followed by Interaction analysis on sequences of utterances that include technology and contextual elements. Preliminary findings indicate that contexts are shaped by the teachers' attitude towards technology, epistemological and pedagogical beliefs, the students' cognitive and socio-emotional needs, the accessible digital technologies, and the curriculum content.

S6c Research Design Forum: Exploring students' self-presentation and challenges during intercultural collaborative learning

Azusa Nakata, Essi Vuopala & Hanna Jarvenoja
University of Oulu (Finland)

Chair: Ivana Đerić, Institute for Educational Research

Owing to the recent trend of globalisation and technology advancement, the opportunities for intercultural collaboration have significantly increased in work-life as well as in education. While collaborating, students bring their subjective study experiences and own behavioral preferences into social plane. This can enrich the collaboration but simultaneously pose a high risk of having unconstructive conflicts. In multicultural learning settings, learners can be easily exposed to socio-emotional conflicts triggered by cultural components. Therefore, there is a strong need to unpack the cultural influence on phenomena to help educators mediate and facilitate the collaboration. This PhD research project aims to investigate how higher education students participate in multicultural collaborative learning setting and how they experience and cope with socio-emotional challenges. The study is designed with a multimethod longitudinal model in which we collect data from the international master's degree program students at the beginning, middle and end of their two-year study. Through the entire process, we focus on cultural aspects emerged in the group's collaboration processes and conflict experiences, reflecting on the results in different phases of group development. The planned data corpus will include repeated self-reflections (questionnaire and learning diary) and psychological tests, and video record of student interaction. These multiple data sources enable us to investigate

how cultural aspects influence (1) individual goals towards collaboration (2) peer interactions and (3) cause of socio-emotional conflicts. Three studies will complement each other and be reflected on as part of a longitudinal journey of the international students.

17 15 - 18 45

S7a **Workshop: Game and Play -
How they differ and why the
difference matters**

Elisabeth Angerer, Larike Bronkhorst & Sanne Akkerman
Utrecht University (Netherlands)

Chair: Nada Ševa, Institute for Educational research

Educational play, ludic learning, edularp, gamification - there are many educational forms of game and play and their popularity is surging. The idea of teaching through such creative format appeals, but the literature is riddled with disagreements on the nature and relation of game and play, and findings indicate difficulties with implementing both game and play educationally. Underneath these issues lie two more fundamental questions: First, how can game and play be educational, and second, how do they differ? The first question is often answered by benefits such as spurring students' intrinsic motivation and engagement. However, framing game and play as means to an educational end leaves the question of their intrinsic educational value unanswered. The second question is easily dismissed as irrelevant, yet my research has led me to unravel how game and play are not only different, but complementary in their educational qualities. This perspective invites a wider conversation on the purpose and functions of education. These conceptualisations have developed in participatory inquiry with a boarding school in Denmark that has been innovating with game and play for over 16 years. Together, we have developed and worked with a conceptual toolbox, which cuts across different theories and practices. In this workshop, I invite participants to try this conceptual toolbox and help me sharpen it. After applying it to Biesta's concept of "subjectification" as a central educational function, we will put the toolbox to work on questions workshop participants raise about educational game and play.

Poster session

Chair: Jasmiina Leskinen, University of Helsinki

TEACHERS' SITUATION-SPECIFIC SKILLS IN THE CONTEXT OF GENDER-SENSITIVE PHYSICS TEACHING

Sanja Atanasova[1], Nicolas Robin[1] & Dorothee Brovelli[2]
[1]University of Teacher Education St.Gallen (Switzerland), [2]University of Teacher Education of Lucerne (Switzerland)

Teaching in a gender-sensitive way is a challenging task, especially in subjects with male connotations such as physics. Teachers are required to be aware of gender stereotypes and gender inequalities in the classroom. Rather, even pre-service teachers should be able to perceive critical, non-gender-sensitive aspects in the classroom and respond to them adequately. Situation-specific skills such as perception, interpretation and decision-making in the context of gender-sensitive teaching are considered part of teachers' gender competence and are of particular interest for the ability to teach in a gender-sensitive way. In order to examine these situation-specific skills in the context of gender-sensitive physics teaching, a vignette test was developed and validated with experts (n=7). Moreover, teachers' gender stereotypes and their knowledge are examined more closely in this context, as it is assumed that they can influence teachers' situation-specific skills. Therefore, a questionnaire, a Implicit Association Test and a knowledge test will be used. The aim of this study is to investigate the structure of teachers' gender competence by examining the relationship between their situation-specific skills in the context of gender-sensitive physics teaching and their knowledge and implicit and explicit gender stereotypes. This poster presentation provides an overview of the research design and presents preliminary results of the expert evaluation and the pilot study with pre-service teachers (n=43).

HEART RATE DYNAMICS SUGGEST TEACHERS' IMPLICIT SOCIAL PROCESSING WHILE EVALUATING STUDENTS' WORK

Camilla Moliterni, Xiao-Fei Yang, Christina Kundrak &
Mary Helen Immordino-Yang
University of Southern California (USA)

Teaching, even when students are not present, is thought to be social work. Here we tested this notion by asking skilled secondary teachers to evaluate academic assignments produced either by their own students (named on the work), or by individuals unknown to them (matched answers "from the internet"), during heart rate recording. Heart rate deceleration (HRD) is an automatic response to sensory information whose magnitude decreases during internal reflection, such as when thinking about social information

(Yang, 2013). Because effective teachers bring social information to bear, we expected participants would reflect more when grading their own students, and therefore show less HRD in this condition. 19 secondary teachers (10 females, aged 28-57 years) designed and administered course-relevant assignments to their students. We collected students' work and created matched control responses, which we told participants were "from the internet". Teachers viewed for the first time 10 students' answers and 10 controls during continuous pulse oximetry. Following a 2-second fixation, each stimulus was presented for 20 seconds, during which teachers evaluated answer quality and assigned a grade. For each trial, we calculated the average heart rate change relative to the pre-trial fixation over a 6-second window after stimulus onset to capture HRD to the stimulus. Our hypothesis was confirmed: Participants showed less HRD when evaluating their own students' answers compared to equivalent control answers (t(18)=2.08; one-tailed p=.03), despite that grades given were not different. The findings contribute evidence that teachers engage in reflective social processing when engaging with their students' work.

TEACHERS' PEDAGOGICAL ORIENTATIONS CONNECT THEIR PROFESSIONAL VISION TO TEACHING PRACTICES

Christina Kundrak[1], Mary Helen Immordino-Yang[1], Emily Candaux[1], Doug Knecht[2] & Jeffrey Garrett[3]
[1]University of Southern California (USA), [2]Bank Street College of Education (USA), [3]Partnership for Los Angeles Schools (USA)

Students' learning and development are supported through the teaching practices that teachers enact in the classroom. In order to flexibly respond and adapt to the learning needs of a diverse student population, teachers develop "professional vision"—the ability to skillfully notice and interpret salient aspects of the classroom. However, the process through which professional vision translates into actual teaching practices is unclear. We conducted classroom observations of 22 secondary teachers from culturally diverse schools in the western U.S., who were selected for their strong relationships with students and support of social-emotional learning, and independent researchers rated their teaching practices using the Teaching for Robust Understanding (TRU) Framework. On a separate date, we interviewed each teacher in a laboratory setting about their reactions to a selection of video scenarios of real classrooms, and coded these to measure teachers' professional vision. Finally, participating teachers were interviewed about their teaching philosophy and classroom role/identity. Four "pedagogical orientations", that ranged in social-cognitive complexity, emerged from qualitative analysis of the philosophy/identity interviews: (1) Gatekeeping, (2) Transactional, (3) Responsive, (4) Transformative. Statistical analyses revealed that teachers' professional vision did not directly relate to their teaching practices, but indirectly predicted practices via pedagogical orientation score. These findings suggest that how teachers conceptualize their role relative to youth development and learning ("pedagogical orientation") informs how they translate what they notice in the classroom ("vision") into decisions about how to teach ("practices"). Results underscore the importance of supporting teachers'

meaning-making, not simply equipping teachers with strategies, to improve teaching.

L2 MOTIVATIONAL SELF-SYSTEM AND WILLINGNESS TO COMMUNICATE IN LEARNING ENGLISH AS A FOREIGN LANGUAGE

Merih Welay Welesilassie
University of Szeged (Hungary)

The purpose of this study was to see if there was a link between the EFL students' L2 Motivational Self System (L2MSS) of learners and their willingness to communicate (WTC). The L2 Motivational Self System Measure (Dörnyei & Taguchi, 2009) and The Willingness to Communicate inside the Classroom Scale (MacIntyre et al. 2001) were adapted to gather self-reported data. A total of 315 Preparatory students took part in this quantitative investigation. The findings showed that the mean of all three dimensions of the L2 MSS was moderate (M = 3.00). The ought-to L2 self (M = 3.79) receives the greatest value. The value of the ideal L2 self (M= 2.64) and the learning experience (M= 2.59), however, were both low. The L2 WTC's score (M=2.31) was quite low. The students' WTC and the Ideal L2 Self were positively associated (r (315) =.151, p > .005). Statistically, learning experience and WTC were significantly associated (r (315) =.154, p >.005). Furthermore, a statistically negative significant relationship was found between ought-to L2 Self and WTC (r (315) = -.12, p >.05. As a result of the findings, possible contributing factors were discussed along with their implications and future research for motivational studies.

S7c Workshop: Publishing (Open Access) with Springer

Natalie Rieborn, Springer

Chair: Jelena Radišić, University of Oslo

In this workshop by Springer Nature, Publishing Editor Natalie Rieborn gives a basic introduction to the landscape of Open Access (OA) journal publishing and OA book publishing. It discusses the different OA license models, the different funding options (including compact deals) and the potential impact of Open Access publishing on the dissemination of your research. The second part of this workshop explores the benefits and process of publishing your (OA or non-OA) book within a Book Series. During the Q&A there will be plenty of time to ask your questions on any publishing-related topic.

Friday, September 9th, 2022

Paper session: Development of key competences

Chair: Smiljana Jošić, Insitute for Educational Research

EMERGENT LITERACY IN SERBIA: IMPLICIT THEORIES OF RELEVANT PARTICIPANTS

Nevena Buđevac[1] & Nada Ševa[2]
[1]University of Belgrade (Serbia), [2]Institute for Educational Research (Serbia)

Keeping in mind the complexity of early literacy (EL) and its contextual dependency, the development of EL is necessarily related to the practice of different actors (such as parents, ECEC teachers, classroom teachers, policymakers, university teachers). This study aimed to explore to what extent different actors in the system of early literacy development share the understanding of the early literacy concept and whether it overlaps with the theoretical model of the same concept. Each group of actors participated in a separate focus group; thus, five focus groups were organized via zoom application, 60-90 minutes long. The results showed that the groups of participants differ in awareness about relevant components of early literacy definition. Most importantly, policy experts and university teachers offered a broader definition in line with the theoretical model. On the other side, parents, ECEC teachers and classroom teachers selectively focus only on some aspects of early literacy, such as the development of spoken language (mostly articulation of sounds) and fine motor skills. Findings give important implications for developing professional development programmes in Serbia, including both current scientific insights and teachers' and parental explicit and implicit theories related to early literacy development.

FOSTERING SOCIAL SKILLS IN SECONDARY EDUCATION: CHALLENGES, OPPORTUNITIES, AND FUTURE DIRECTIONS

Amelie Vanhove, Evelien Opdecam & Leen Haerens
Ghent University (Belgium)

The workplace no longer merely focuses on hard job-specific skills, but also increasingly on soft social skills. This shift has led to a skills gap between the competences graduates possess, and the competences employers demand (e.g., teamwork, communication, leadership, and critical thinking skills). In this study, we investigate (1) which different types of social skills are addressed in secondary economics education, and (2) which challenges and opportunities educators might perceive when addressing social skills. Semi-structured interviews conducted with educational stakeholders revealed that teamwork and communication skills are emphasized far more frequently compared to leadership and critical thinking skills. Second, teachers identified various challenges and opportunities of addressing social skills, such as the overcrowded curriculum, the student diversity, and

the complex assessment of social skills. The results of this study have practical implications for future research, for secondary educators who seek to enhance students' employability, and for teacher training programs, as there appears to be great value in developing new explicit methods for fostering and assessing social skills in secondary education.

STUDENTS' SEL SKILLS, DISCIPLINARY PRACTICES AND BULLIYNG: RELEVANCE FOR POSITIVE YOUTH DEVELOPMENT

Marina Kovačević Lepojević[1], Branislava Popović-Ćitić[2], Lidija Bukvić Branković[2] & Marija Stojanović[1]
[1]Institute for Educational Research (Serbia), [2]University of Belgrade (Serbia)

The extent to which SEL (socio-emotional learning) techniques were provided in schools as well as the level of students' SEL skills is frequently examined in relation to different aspects of negative aspects of school climate (e.g. school bullying). Students (N=860, 40.4% male students) completed Delaware School Climate Survey scales at a single time point. The aim of this paper is to identify use of positive, punitive, and social-emotional disciplinary techniques, students' SEL skills and its' effects on school bullying. Additionally, mediation of disciplinary techniques in relation of students' SEL skills and school bullying is explored. Research results are summarized as follows. Female students scored higher for Student SEL Skills (F $[211.87]$ = 8.36, p = .004, η2 =.01), SEL techniques (F $[156.30]$ = 4.35, p = .037, η2 =.005) and Bullying at School (F $[106.59]$ =9.05, p < .003, η2 =.01). Age, gender, SEL Punitive and Positive Techniques explained 33% variance in Bullying at School. Teachers' punitive disciplinary practice (β = .55, p <.001) positively predicted bullying at school, while SEL teaching practice negatively predicted bullying at school (β = - .24, p <.001). Full mediation of the link between students' SEL skills and school bullying by all three teachers' disciplinary practice is found (total indirect effect z = - 4.315, p < .001). Positive youth development (PYD) perspective supports minimizing punitive disciplinary practice at school, and maximizing SEL techniques in order to develop students' SEL skills and prevent bullying.

Chair: Nataša Simić, University of Belgrade

LEARNING ABOUT EDUCATIONAL CHANGE: CHILDREN'S, PARENTS' AND TEACHERS' NARRATIVES IN THE PANDEMIC

Tünde Kovács Cerović[1], Katarina Mićić[1]& Colette Daiute[2]
[1]University of Belgrade (Serbia), [2]CUNY Graduate Center (United States)

The paper spotlights the nuanced ways education participants during the COVID-19 pandemics narrate their experiences. It analyzes the sharing and changing of narrative expressions by teachers, schoolchildren, and parents during three critical phases of emergency education in Serbia: the first school lockdown in Spring 2020, the hybrid schooling in Autumn 2020, and a second school lockdown in Spring 2021. A detailed value analysis of the 1268 online narratives and letters by 213 children, 144 teachers and 183 parents, in order to study participants' experiences and interpretations of the dramatic changes in the education process over that two-year period. Our focus in this paper will be on how these diverse educational stakeholders used expressive narrations/letters to make sense of this unprecedented dynamic across time, genre and perspective. The analysis yielded 6 major values that encompassed 24 individual values. Comparisons of the values embedded in the narratives across time, genre, and stakeholder highlights differences across time (perceptions of organizational problems and demanding workload decreased while notions about the importance of self-regulation remained salient and unchanged), across stakeholders (students' narrative expressions surfaced more self-regulation, teachers' organizational problems and parents' multiple roles), and across genres (stories often describing organizational problems and frustration with technologies, while letters to peers most often held an active and positive account on self-regulation and coping). Additionally, important genre-participant-time interactions were detected, indicating complex transformation processes that education participants experienced during the pandemics instigated emergency education changes. Pragmatic-political, educational-psychological, and theoretical-methodological implications of these findings are drawn.

STUDENTS' ACADEMIC RIGHTS IN EDUCATION AS 'CULTURAL OFFER' IN THE 'CULTURE OF PARTNERSHIP'

Ana Marjanović-Shane[1] & Ljubica Beljanski-Ristić[2]
[1]Independent Scholar (United States), [2]Polifonija Teatar (Serbia)

We study the students' academic rights in alternative and blended educational approaches of the Yugoslav/Serbian movements for the "culture of partnership in education," in the light of the contemporary rise of authoritarian political, ideological,

and educational movements, and disturbing findings that young people have ever fewer opportunities to participate in democratic decision-making and critical dialogues. We compare and contrast the legitimacy and the opportunities of the students' evaluation, judgment, and decision-making about their own learning, education, and life, in three educational paradigms: traditional/progressive education, democratic and self-education, and education as "cultural offer" taking place in the "culture of partnership" as well as the experimental project to blend the traditional school with the "culture of partnership" approach at the beginning of the 2000s. Using mixed methods of ethnographic, narrative, and dialogic analyses, we examine archival materials and new interviews with the former participants of these programs.

STUDENTS' NARRATIVES OF CHANGE – A 30-DAY SUSTAINABILITY CHALLENGE

Jelena Radišić & Erik Knain
[1]University of Oslo (Norway)

Against the idea of the need for science education to expand traditional forms of teaching and learning, and students being allowed space to negotiate science into broader patterns of meaning, we explore how encounters with places, people, textual resources and events are played out in students' narratives in the context of a 30-day sustainability challenge using cChallenge, an experiential learning tool. Fifty students and teachers at an upper-secondary school in Norway completed the challenge. An analytical framework drawing on Bazerman (2004) and Papas et al. (2003) was developed to analyse how students' narratives connect their challenge of changing their everyday lives with different intertextual resources. Results indicate that participation in the challenge allowed some students to become more aware of their own patterns and habits and more easily identify new and desired behaviours. Still, most students find little use of resources outside the everyday and practical, while only a few include a richer intertextual continuity of encounters with texts, people, settings, and concerns. There is no or minimal reference to knowledge resources. Through examples of students' narratives, we explore further possibilities in constructing cChallenge as a resource that makes learning trajectories more explicit, shareable, and subject to reflection and teaching.

**Paper session: Learning in the
context of social interaction**

Chair: Renata Anna Dezso, University of Pecs

WHY MORE COMPETENT ADOLESCENTS PROGRESS OR REGRESS AFTER ASYMMETRICAL PEER INTERACTION

Ivana Stepanović Ilić & Aleksandar Baucal
University of Belgrade (Serbia)

This research follows adolescents who participated in joint problem solving of tasks examining early forms of formal-operational thinking, with their less competent classmates. Although original research shows that asymmetrical peer interaction did not influence formal-operational development in the majority of more competent (MC) adolescents, we decided to examine those who progressed and regressed most after the interaction, considering rare research interest for MC students. Thus, conversations of 10 dyads, of MC adolescents and their less competent (LC) peers, were investigated. Each dyad solved 5 tasks together, which MC students had successfully solved on the pre-test, unlike their LC partners. Ten dialogue characteristics, derived from the referent literature, were traced in the 50 dyads' conversations. Two dialogue patterns related to different post-test outcomes of MC adolescents were identified by cluster analysis. In the first type of dialogue, MC students justified correct answers but frequently behaved inconsistently with their higher competences. The second type of dialogue characterizes domination-submissiveness pattern and MC students' unwillingness to justify opinion. All regressing MC adolescents participated in dialogues of the first type, while half of progressing MC adolescents had dialogue from the second. Qualitative analysis implies that although ready to give arguments to their peers when they can, regressing MC students were uncertain in their own reasoning and that is way interaction led to their regression. Progressing MC students apparently tried to protect themselves from possible disturbances coming from their LC partners by dominant attitude towards them and withdrawing from communication.

COLLABORATIVE AND INDIVIDUAL ARGUMENTATION DIFFER AT FOSTERING KNOWLEDGE DEPENDING ON TIMING

Antonia Larrain[1], Paulina Freire[2], Valeska Grau Cardenas[2], Patricia López[1], Sebastian Verdugo[1], Marisol Gómez Ramírez[1] & Diego Cosmelli[2]
[1]Alberto Hurtado University (Chile), [2] The Pontifical Catholic University of Chile (Chile)

Peer discussion has experimentally been found to be effective in promoting science content knowledge, but how this occurs is still unknown. We conducted two studies whose

aim was to evaluate the use of argumentation, in both peer and individual settings, in promoting students' understanding of natural selection. In total 137 sixth-grade students attending 7 public schools in [CITY, COUNTRY] participated in study 1 and 126 secondary students attending to three public schools in the same city participated in study 2. Participants were randomly assigned to 1 of 4 conditions: oral argumentation with peers; written individual argumentation; oral non-argumentative elaboration with peers; and written individual elaboration. In both studies students participated in six sessions (one per week), in which they were asked to watch a two-minute video on different relevant notions of natural selection, after which they had to answer questions related to problematic situations involving natural selection (the same for each condition). Students were measured based on their knowledge of natural selection pre- and post-sessions (post-immediate and post-delayed). Sessions were videotaped. We conducted ANOVA repeated measures to evaluate the differences across conditions and hierarchical regressions with fixed effects. Results show that in sixth grade there were no significant differences between conditions, argumentation frequency predicted delayed learning when school variance and learning at the baseline, was taking into account. However, in secondary education, there were significant differences between conditions: students who argue orally with peers outperformed students in the other conditions at delayed post- tests.

TRIGGERING SCIENCE RELATED INTEREST IN FAMILY EVERYDAY INTERACTION

Irit Vivante & Dana Vedder-Weiss
Ben Gurion University of the Negev (Israel)

Families play a major role in supporting their children's interest in science in everyday interaction. According to Hidi and Renninger's (2006) four-phase model of interest development, individual interest develops from situational interest which arises in response to a trigger: an environmental stimulus that draws the learner's attention. However, little is known about everyday family-life triggers: what kinds of stimuli trigger children's interest? When do these triggers accrue, where, and by whom? This study aims to characterize and categorize everyday family-life science interest triggers. Through a self-ethnography of one Israeli family, using fixed 24/7 cameras in the house, Go-Pro cameras, and mobile phone recordings, we collected video and audio recordings of science-related interactions across settings and time. Analyzing a maximum variance sample of these recorded interactions, we found three dimensions of everyday-science triggers: identifiable or un-identifiable; intentional or accidental; self-noticed or mediated. Overall, the findings suggest that in this family the children's situational interest was mostly elicited by self-noticed, identifiable, accidental triggers, despite the parents' repeated attempts to mediate trigger for their children's interest. This study offers a framework to describe and analyze everyday family life science-related interest triggers and advances our understanding of science interest development in informal everyday settings. The study also illustrates the benefit of a novel data collection approach for the study of interest and other affective constructs (motivation, emotion, identity) at the home.

11 00 – 12 30

Paper session: Learning in social interaction

Chair: Jelena Radišić, University of Oslo

BRIDGING GROUP WORK AND WHOLE-CLASS ACTIVITIES THROUGH RESPONSIVE TEACHING

Kenneth Silseth & Anniken Furberg
University of Oslo (Norway)

In this article, we make an argument for the importance of instructional sensitivity towards student resources – the experiences, ideas, and assumptions about science matter that students bring to school – in bridging group work and whole-class conversations in science education. By employing a sociocultural and interactional approach, we scrutinize how teachers can facilitate whole-class conversations by activating and thematize students' experiences and ideas introduced by students in preceding group work activities, in form of enactment of 'responsive teaching'. In order to empirically explore how students work in groups and how responsive teaching can form a productive basis in follow-up whole-class conversations aimed at consolidating students' group work experiences, we analyze a case originating from a science project about genetics involving lower secondary students and their teacher. The analytical focus is on microanalyses of student interactions taking place during group work activities and student-teacher interactions within a succeeding whole-class setting. The detailed analyses enable us to display and explore some of the conceptual, social and practical challenges students meet during group work activities. Most importantly, the analyses display how teachers' enactment of responsive teaching contributes to create productive connections between the group activities and whole-class conversation.

THE ROLE OF STUDENTS' PERSONAL EXPERIENCES IN AN INTERDISCIPLINARY PROJECT ABOUT WELL-BEING

Sigrid Ernstsen, Anniken Furberg & Hans Christian Arnseth
University of Oslo (Norway)

The present study investigates how students' assumptions, ideas and experiences emerge in group-work conversations and how they are recontextualized in student products in ways that make them productive resources for learning. By taking a sociocultural perspective on learning and teaching, we explore how students' personal experiences become resources for learning in an interdisciplinary project about well-being. More specifically, we focus on how their assumptions, ideas and experiences that are invoked in preceding and ongoing classroom conversations materialize in multimodal products that students produce during collaborative learning activities. The data consist of

video records of classroom activities related to the notion of identity, friendship and inclusion, involving a class of lower secondary school students and two teachers. The analytical focus is on interactions during small-group activities where students create multimodal posters related to the overall theme, including an analytical focus on the student products. The analysis show that the students utilized multiple resources during their collaboration, and their personal experiences were invoked in the conversations and materialized as illustrations that elucidated the phenomenon in question. However, the bridging between the students' personal experiences and the societal scientific concepts in focus were to a lesser extent an object for explicit reasoning and negotiating.

STUDENT INTERACTION AND GROUP PERFORMANCE IN THE INTERNATIONAL CLASSROOM: A COMPARATIVE CASE STUDY

Cui Ping, Marloes Hendrickx, Ishani Sewnarain Sukul, Ad Kleingeld, Sonja Rispens & Ruurd Taconis
Eindhoven School of Education (Netherlands)

Higher education is increasingly international: students are more and more mobile and as a result, collaborative learning takes place in diverse student teams. The international classroom on the one hand brings a large diversity in perspectives, which can positively affect collaborative learning. On the other hand, diversity comes with an increased risk of exclusion, particularly when faultlines emerge, that is, hypothetical dividing lines that split a group into relatively homogeneous subgroups. The current study aims to identify the effects of diversity structures in group composition on students' interdependent interaction patterns and consecutive group performance. To do so, the study compares student interaction and group performance of three student groups from the same masters' course at a university in the Netherlands. Groups were selected based on differences in their diversity structure: Case 1 had a clear faultline with three male Dutch students and one female from China, whereas Cases 2 and 3 were more diverse. Groups' interaction was coded based on turn-taking and speech functions, and sequential analyses using orbital decomposition were performed to identify recurring patterns. Results show that although groups did not differ much in their group performance, patterns of exclusion arose in Case 1 that were much less present in the other student groups. These findings indicate that teachers are well-advised to attend to the emergence of possible faultlines when forming groups, so diversity can become an asset rather than a source of friction or dissatisfaction.

RAISING GENUINE AND CRITICAL QUESTIONS. A DEVELOPING SKILL AMONG ENGINEERING SCIENCE STUDENTS

Mariana Orozco & Mieke Boon
University of Twente (Netherlands)

When students formulate questions, they are actively involved in learning. This work

concerns student-generated genuine and critical questions. Such questions are curiosity-driven, thought-provoking, and contain the intention to find answers; they open opportunities for learning through collective reasoning. This work aims to contribute new insights into how engineering science students in interaction deploy their questioning skill, and how engineering science education can promote such skill development. A case study was conducted in a biomedical engineering programme; it focused on three project groups of students and their tutors involved in long-term assignments to research health-care problems and design solutions using biomaterials. Concurrently, a pedagogical approach consisting of conceptual-modelling was used to elicit and foster students' reasoning. The research findings stem from an in-depth analysis of students' conversations, logbooks, and reports. The comparative qualitative results regarding the purposes (e.g., explain, justify, query) of student-generated questions exhibit quite heterogeneous patterns, plausibly denoting different approaches and attitudes towards the learning task. Oppositely, 'missing questions' indicate potentially valuable learning-and-teaching opportunities however overlooked. Various aspects of student-generated questions were distinguished (e.g., main purpose, hierarchy, triggers, and connections to conceptual-modelling activity). Such aspects pointed to areas where practitioners can intervene to promote the development of the questioning skill and derived into recommendations covering each area concerned. It is argued that the ability to raise genuine and critical questions is a key element of the broader set of higher-order thinking skills, and that this work constitutes a novel contribution to educational science and engineering science education in practice.

S9b **Paper session: Reflections on teaching and learning in the time of COVID**

Chair: Giuseppe Ritella, University of Helsinki

TOGETHERNESS AND "NEW BEGINNING". ANALYSING TEACHERS' EXPERIENCE IN THE TIME OF COVID-19

Vasco d'Agnese
University of Campania Luigi Vanvitelli (Italy)

In this paper, I focus my attention on teachers' lived experience in the time of Covid-19. Specifically, the study I am presenting explores the emotional impact the abrupt shift to online teaching had on teachers' work throughout the various phases of the lockdown. I develop my argument by analysing teachers' everyday work, using a qualitative approach, and constructing a small-scale empirical study. The study involved 13 teachers from different disciplines in secondary school and is based on a combination of in-depth interviews and group dialogues. Methodologically, my attempt is lo-

cated in an emerging research horizon which combines educational philosophy with empirical research—scholars committed to such research horizon undertake field-based endeavor while engaging in philosophical inquiry. Theoretically, my attempt is phenomenologically developed, and is framed by Arendt's thought. More specifically, I will analyse the cases drawing from Arendt's thematization of togetherness, and new beginning. Based on findings, I argue that the lockdown interrupted the space-time of normal schooling, producing the conditions by which a different space-time, a "new beginning", in Arendt's words, was able to emerge. We may even say that what emerged was a new kind of learning and educational community, for connections themselves were caught in a new web of meanings. As opposite to sensations of distance, estrangement, and alienation, in those cases online teaching created an environment of intimacy, which deeply transformed students' learning and receptivity.

THE PEDAGOGICAL CONSTRUCTION OF AN ONLINE COMMUNITY MAPS DURING THE PANDEMIC: A CASE STUDY

Giuseppe Ritella[1] & Fedela Feldia Loperfido[2]
[1]University of Helsinki (Finland), [2]University of Bari (Italy)

Place-based education for several years has been considered as an educational approach helping students to develop stronger ties with the local community and encouraging active citizenship. At the start of the Covid-19 pandemic, when most of the social life and of educational practices moved online, the students' experience of the physical places around them and their interactions with the local community suddenly changed. We argue that in the post-covid context, place-based approaches acquire a renewed relevance for education. Based on this rationale, the present investigation is aimed at examining the collaborative construction of an online community map by small groups of primary and lower secondary students, considered as a place-based educational activity. The study involved about 300 students aged 9 to 12 attending two comprehensive schools in southern Italy. The study adopts a multimethod qualitative approach inspired by ethnography. It relies mainly on participant observation, collection and analysis of video data, interview data, survey data and of the artifacts create by the students during the learning process. The data analysis is still ongoing. The preliminary results show how in spite of the several challenges encountered because of the pandemic, the activity allowed the students to engage with abstract topics such as death penalty, environmental issues, human rights and individual freedom, and to address concrete themes strictly connected with the local community. The virtual environment was used mainly for discussions directly finalized at the construction of the map (44% of the total) and for socialization purposes (30%).

BACK TO THE FUTURE OF INTERACTIONS IN EDUCATIONAL SETTINGS

Gudrun Ziegler, Philippe Blanca & Natalia Durus
Luxembourg multi-LEARN institute (Luxembourg)

The 2020-2022 pandemic period has heavily influenced all interactions and the interactions in schooling contexts in particular: the need of physical distancing, the use of the mask, the recur to online interactions, to mention the most obvious ones. With the return to face-to-face interactions in late 2021 and early 2022, we experience a "return to the future" in terms of interactional practices: in other words we aim to understand in which way these present practices are from the past (pre-pandemic period) or from the future (post-pandemic). The data used for this research was collected within the project "Unplugged messages (Stay connected to yourself and others during and beyond the pandemic)", carried out in partnership with schools by Luxembourg multi-LEARN Institute. It is part of the initiative "Action Jeunes: Mieux Vivre la Pandemie" launched by the Oeuvre Nationale de Secours de Grande Duchesse Charlotte. The "Unplugged messages" project proposes workshops/interventions which take a creative approach to the messages disseminated in the media during the pandemic and invite youngsters to represent/express their experience of the pandemic period in drawings, illustrations, words, etc. The data collected includes observations, audio recordings, testimonials and visual materials. For the purposes of this paper, we use conversation analysis and discourse analysis methodologies for the analysis of the audio data collected. The analysis showcases patterns of interaction among the students and between the students and the workshop leaders and delivers recommendations for the teachers, students and other actors on the field.

S9c Symposium: The University of Students: A place for joint self-education

Chair: Olga Shugurova, University of Manitoba
Discussant: Eugene Matusov, University of Delaware

In this symposium, we engage our audience in dialogic research about the University of Students (UniS), a democratic international university and a new post-scarcity, post-credential, post-institutional socio-educational media that is led by students, for students, and with students for their diverse purposes, desires, interests, and inquiries. Everyone can become a student at any time without any credits, fees, bureaucracy, tests, or any other form of human suffering. But what is UniS? Why? Why now? And how? What if...? What is long- and short-term history of UniS? Can one visualize UniS, which is "so vague, so bizarre, so unnecessary to me!" What are its philosophical principles? Who are we? What does UniS look like? In the spirit of UniS, we invite our audience to become a part of UniS

for a moment of being by engaging in a democratic decision-making about this symposium itself. The open-ended invitation lets the participants choose a topic for our discussion from the Presentation Map. In doing so, everyone can freely form their own interpretations, research interests, and conclusions about UniS and its infinite, unknown becoming.

WHAT IS THE UNIVERSITY OF STUDENTS?
INTRODUCTION IN A FORM OF DIALOGUE

Eugene Matusov
University of Delaware (United States)

The University of Students (UniS) is a democratic, international university in the world that is run by students, for students, and with students for their diverse purposes, wants, interests, and needs. A student is anyone who freely chooses to study something for whatever reason. Everyone can become a student at any time without any high school credits, fees, bureaucracy, tests, or any other form of human suffering. The concept of "student" is very broad, creative, fluent, and self-determined without a specific presupposed label; it is personal and powerful. UniS is its students in the dialogic encounter. UniS promotes students' encounters and dialogues through edu-clubs, one-time events, and other educational forms, organized by the students, where students are the leaders of their own learning. UniS is an educational Wonderland; it is a different worldview through a looking glass of freedom, curiosity, wonder, socialization in the desired communities of practice (Lave, 1992; Wenger, 1998), critical examination of the self, life, world, and society (cf. Socrates, Apology[1]), or need. At UniS, everything is possible to imagine and, therefore, to learn. Everyone is welcome, all the time, without any hierarchical gatekeepers (unless a student requires this hierarchy from the authority of the student's own choice). There are infinite possibilities of becoming a student at UniS. Basically, it is up to each person how to define themselves as students and how to design their learning. At UniS, students are the leaders and authors of their learning.
[1]"The unexamined life is not worth living."

UNIS PHILOSOPHY OF SELF-EDUCATION AND
NEGATIVE FREEDOM

Ana Marjanović-Shane
Independent Scholar (United States)

UniS is based on the following philosophy: self-education (in contrast to Kantian educational paternalism of foisted education), negative freedom (in contrast to positive freedom), student-trusted guidance (in contrast to imposed guidance), dialogic encounter (in contrast to the monologic transmission of knowledge and skills), and Agora (in contrast to the sterile on-task educational environment). In this presentation, I elaborate on the first two principles: self-education and negative freedom. Contrasting them with their opposites, which prevail in the progressive education, as articulated by the Enlight-

enment philosophers (Kant, 1784; J.-J. Rousseau, 1979): educational paternalism and imposed curriculum, but also co-constructed guidance, and the freedom of students' reason (Matusov, 2021a). However, the UniS philosophy claims that genuine education cannot be foisted. For learning to be transformed into education, the learner must make an authorial appraising, a judgment about their learning or insight (Matusov, 2021b). In that sense, genuine education is always self-education. Education is always a unique personal authorial act. Although society – economy, governance, state, family, social supports, etc., can benefit from a person's self-education, society cannot legitimately define, impose, and control a person's education. Society can legitimately dictate its needs to a person, but it is up to the person how to respond to these dictates through their own self-education. The philosophical principle of self-education is based on the notions of radical pluralism (Berlin, 2014, 2017), negative freedom, contextualism, and unique authorial agency, where human values and virtues cannot be fully known or always united harmoniously in one non-contradictory principle.

WHAT DOES THE UNIVERSITY OF STUDENTS LOOK LIKE?

Olga Shugurova
University of Manitoba (Canada)

UniS practices are diverse. Currently, we have two major forms of the University of Students operation: 1) educational clubs (edu-clubs) and 2) one-time educational events. We have seven acting edu-clubs in English and Russian languages meeting over Zoom: https://universityofstudents.org/clubs. So far, all acting edu-clubs were organized and have been maintained by organizers of the UniS. However, we have already had occurrences when one-time educational events were organized by rank-and-file members of the UniS. We are waiting for a moment when an edu-club will be started by a student who is not an organizer of the UniS. Anyone can enroll in the UniS or subscribe to the UniS Facebook group, create or join a UniS edu-club or organize a UniS one-time event, or support the UniS via a donation. In this article, I explore the personal and pedagogical significance of Educationalist club at UniS.

13 30 - 14 30

Plenary lecture SIG21:
When disability enters the classroom

Geert Van Hove, Ghent Univeristy

Schools around the world rely on a 'grammar of schooling' that tends towards conservatism and is full of ableism. To accommodate children and young people who do not meet ableist expectations, many countries have therefore turned to special schools that have

often become a parallel circuit. Since 1994 with the Salamanca Statement and certainly since 2006 with the UNCRPD, many countries have tried to switch to inclusive education. In many countries, this transition has not been without its struggles. In some countries, after inclusion experiments, people even turn back the clock and plead for a 'return to special schools'. So what exactly happens when disability enters the classroom? And is a 'human rights' approach sufficient to influence the 'grammar of schooling'? I want to bring you an analysis in which concepts such as 'the deep structure of exclusion' (Slee, 2019) and 'social capital -trust and confidence' (Allan, 2020) will be deployed in an attempt to question the dominance of the special education framework over inclusive education.

14 45 - 16 15

S10a **SIG25 Invited symposium: Tensions and movements: multiple perspectives on interdisciplinary research and education**

Chair: Giuseppe Ritella, University of Helsink
Discussant: Larike Bronkhorst, Utrecht University

Interdisciplinarity entails integrating different disciplines. Practically, it is researchers doing the integrating, bringing to it their (disciplinary) habits. When researchers hold incommensurable worldviews, successful integration of their disciplinary contributions can seem magical, involving flashes of insight and creative outbursts. The tension between the explained and the enigmatic, between procedure and improvisation underlies all research insofar as research is both systematic and creative. However, interdisciplinarity brings this tension to the fore when such "magic" transforms fundamental assumptions about knowledge and the world. While interdisciplinary programs are surging faster than our understanding of the matter, this symposium takes a step back to address the complexity of interdisciplinary processes from different angles: The first presentation argues for the interdisciplinary nature of computer science, suggesting that an interdisciplinary approach could overcome limitations of computational thinking frameworks. The second presentation discusses the current discourse on inter-, multi-, and transdisciplinary education, proposing boundary crossing as an alternative way for conceptualising them. It also addresses organisational problems associated with this approach. The third presentation compares disciplinary traditions with game structures and interdisciplinary magic with play to explore how we could conceptualise and teach interdisciplinarity that retains transformational freedom without losing grounding. The last presentation reflects on the role of structures and patterns in interdisciplinarity from an ecological standpoint. It points to existential barriers and psychological resistances detected in interdisciplinary work and asks what kind of knowing is needed to evaluate the dynamics emerging when new ways of seeing are embraced or resisted from different disciplinary perspectives.

CT AND INTERDISCIPLINARY REQUIREMENTS IN A ROBOTIC ENGINEERING SETTING

Stig Børsen Hansen

University of Southern Denmark (Denmark)

The spread of computational thinking in K-12 and higher education is to a great extent premised on the idea that computational modes of thinking and skills are transferable to other disciplines, including disciplines beyond STEM. The paper sets with a brief analysis of the modes of computational thinking and techniques involved in solving the apparently simple task of getting a robot to respond to a verbal command by handing over a physical object. It then argues that interdisciplinarity is key to solving tasks that might otherwise, at first sight, not seem to call for interdisciplinarity. The presentation does this by analysing how different aspects of understanding language call for very different computational methods and techniques (such as constraint satisfaction), and inter alia, quite different understandings of language. Moveover, ethical and political forms of knowledge are needed to have a robot that performs the simple task successfully. In short, a well trained robotic engineer and programmer will need to know when to switch between and engage different disciplines. The presentation argues that running up against limits of a given approach, and exploring and experiencing limitations of any given approach or technique within computer science should be key to designs for learning CT. While educational scientists are keen to promote CT, relatively few have been willing to engage with the question of the possible limitations to the thinking framework. This limitation can be against other frameworks, such as creative thinking, or more specific disciplines.

'UNDISCIPLINING' HIGHER EDUCATION WITHOUT LOSING DISCIPLINES: TRANSFORMATIVE POTENTIAL FOR STUDENTS

Mayke Vereijken, Sanne Akkerman, Susan te Pas, Iris van der Tuin & Manon Kluijtmans

Utrecht University (Netherlands)

Over the recent years there has been a movement away from mono-disciplinary towards multi-, inter- and transdisciplinary higher education (MITHE), motivated by the idea that understanding complex societal issues calls for more than one single disciplinary perspective. These societal issues ask for flexibility within higher education programs in order for students to move within, across and beyond disciplines. Paradoxically, the notions of inter-, multi-, and transdisciplinary education appear in the current discourse as quite rigid aims in themselves, as were they distinctive types of education that one can or should adopt at the level of a course or a program. In contrast to such an approach, we propose boundary crossing as an alternative way of thinking about multi-, inter-, and transdisciplinary education. We argue that higher education should more flexibly utilise its free space, continuously questioning, also together with students, what sorts of perspectives and disciplinarity particular problems ask for. At universities this already

gained some traction. Still a major organisational issue of how to facilitate flexible multi-, inter- and transdisciplinary education remains. Namely, how to organise education so that it adequately responds to issues of today and tomorrow, which require, depending on the problem, very specific, multi-, inter- or transdisciplinary knowledge within large academic institutions structured by scientific disciplines? In this presentation, we explore the implications of the boundary crossing perspective for student choice within programs, interdisciplinary teacher collaboration and structures of programs. Furthermore, we present directions for future research into MITHE.

GAMIFYING PLAY AND DISCIPLINING INTERDISCIPLINARITY – (WHAT) ARE WE DODGING?

Elisabeth Angerer
Utrecht University (Netherlands)

This presentation discusses the possibility of formalising the research process that leads to an interdisciplinary perspective. This process entails on the one hand the application of disciplinary worldviews and on the other hand the transformation thereof as disciplinary contributions are integrated. Only this latter part renders the process interdisciplinary. However, while the literature on interdisciplinary methodology provides concrete guidance for the first part, it has remarkably little to say about how integration works when disciplinary worldviews are in conflict. It appears possible that the taken-for-granted rules of disciplinary sciences are overthrown and some kind of magic happens from which researchers emerge with a changed view. Many prominent authors seem eager to go on formalising the entire process, which is at par with the open-ended space where the magic occurs. To reflect on this, we can consider the dialectic between the systematic and the improvised from an angle that is deeply familiar to us: game and play. In most educational literature, it is assumed that game entails play. This ignores the underlying dialectic between applying structures (game) and transforming structures (play). The same dialectic underlies interdisciplinary work. Maybe then, a discomfort with that dialectic accounts for both the trends to "gamify play" and to "discipline interdisciplinarity". This raises the question whether there is room for magic in our conception of science at all, and if so, whether making room for play could help to approach interdisciplinary methodology. Can students be taught to transform the structures they have learned to apply?

ECOLOGICAL AND EXISTENTIAL BARRIERS TO INTERDISCIPLINARITY

Ramsey Affifi
The University of Edinburgh (United Kingdom)

Interdisciplinarity is often promoted for the benefits new knowledges can play in addressing social, economic or ecological problems. One concern is that siloed knowledge

leads to actions and attitudes based on partial premises, and dialogue between silos can achieve a more holistic picture of phenomena. Undoubtedly the interdisciplinary conversation between, say, coral reef biologists and atmospheric scientists helps understand the causes of, and steps forward in addressing, mass bleaching of these wondrous systems. But does it follow that interdisciplinarity is always good 'ecologically'? This paper takes an ecological approach towards understanding interdisciplinarity, opening new questions about the purpose and consequences of different ways of keeping disciplines separated or intermingling. By extension, it explores how an ecological approach might inform the kind of interdisciplinary thinking we might need to conceive, evaluate and respond to the inter/disciplinary challenges currently faced. In particular, it is interested in the intersection between different ecological and existential effects of disciplinarity and interdisciplinarity. I suggest that epistemological and existential 'systems', like other ecologies, regulate rates of being and becoming in the relationships they constitute. For instance, rushing into a new way of seeing the world may be either resisted or embraced, depending on how the existing discipline and/or its transformation interacts with the scientist's world. These interactions may be dangerous (dysecological), healthful, or either or both, at different temporal and spatial scales. A kind of (meta)discipline in its own right is needed to investigate, evaluate and participate in these dynamics, with implications for education.

S10b Paper session: : Joint construction of knowledge

Chair: Marloes Hendrickx, Eindhoven University of Technology

VOTING IN ONLINE COMMUNITIES, KNOWLEDGE SHARING PRACTICES IN TENSION

Alena Seredko & Thomas Hillman
University of Gothenburg (Sweden)

The study takes interest in voting as a socio-technical practice and its role in the functioning of online platforms as sites of knowledge-sharing communities. It aims to examine how the normative character of voting is articulated through user discourses about voting. This normativity is addressed by drawing on the Practices of the Community perspective that views communities as performed through as well as producing and sustaining practices. Therefore, the study asks how the practices of voting constitute knowledge-sharing communities on large scale online platforms. The study examines the case of Stack Overflow, a community question answering platform for computer programmers. The empirical material consists of discussion threads on Meta Stack Overflow, an accompanying site where users discuss workings of Stack Overflow. Ten threads were examined for 'rich

point' highlighting conflicting viewpoints on voting. The discourse analysis of these rich points unpacks tensions, through which a community is performed, and voting is normatively established as a practice of quality-driven content curation. At the same time, it surfaces conflicting perspectives associated with voting as a practice of engaging in feedback dialogues. While these tensions engender an antagonism in knowledge practices on Stack Overflow, it can be understood as necessary in a context of an online platform that relies on both the quality of curated knowledge and a constant influx of users.

USAGE OF COLLABORATIVE AND REFLEXIVE TECHNIQUE IN ECEC TEACHERS - HORIZONTAL LEARNING IN SERBIA

Ivana Đerić[1], Nada Ševa[1] & Dušica Čolaković[2]
[1]Institute for Educational Research (Serbia), [2]Preschool Institution "11th April", Belgrade (Serbia)

The Model of the professional learning community (MoPLC) is focused on supporting ECEC teachers in critical and reflective rethinking, changing, and developing their practice in cooperation with their colleagues. The MoPLC employs the following tools: communication techniques (active listening and feedback sandwich technique), question formation technique, and flipped learning method. These techniques should contribute to the development of reflexive-social practice. The aim of the study is to determine how ECEC practitioners perceive techniques of collaborative learning and critical reflection from the MoPLC to develop professional competencies related to reflexive-social practice? 103 ECEC teachers from 6 PIs estimated on 7-point scale the quality and effectiveness of the reflexive discussion and cooperation between participants and the usefulness and usage frequency of proposed techniques and methods from the MoPLC. The practitioners recognise the techniques proposed in the MoPLC as very useful for developing reflexive-social practice in the ECEC system. One of the possible explanations would be that the choice of techniques was based on the insights related to the previous usage in the ECEC professional context in Serbia, especially the one related to communication skills. The practitioners recognised that these techniques are highly related to one of the MoPLC 's goals. Finally, the MoPLC structure is organised to allow practitioners to use and practice these techniques continuously. Based on that, practitioners recognised that professional learning is happening in an experiential and participative manner, allowing for further development of high-quality discussions and critical analysis of their practice.

UNFOLDING DEVELOPED CONCEPTS: GETTING CLOSER TO THE OBJECT OF TEACHING

Martín Vergara
University of Neuchatel (Switzerland)

It seems fairly obvious that to deliberately produce a specific result, we have to know how it is produced: desired outcomes, require particular processes. If the way of pro-
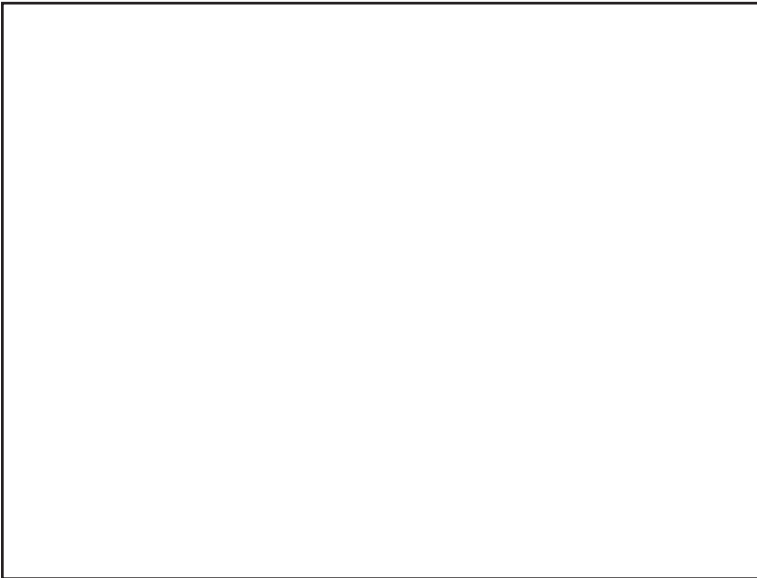
ducing the desired outcome is unknown, conducting research for unveiling that development is needed. As a metropolis hidden underground, what we can tell about a concept informs very little about its richness and complexity. While concepts have been developed over the course of years, in diverse domains, in the frame of specific practices, and oriented to certain ends, teaching aims to have them mastered in a short period of time and, often, in a way that does not resemble the way in which they were developed. Furthermore, in each use, concepts are oriented to a particular situation, a certain problem, a determined object, and a specific audience, all of which is lost in a formalized, textbook-like reproduction. How can we see beyond the external and current appearance of a concept, getting closer to its dynamism and its history? In this presentation, I will address the methodological challenges of studying the development of concepts in work activities from a cultural-historical perspective, paying special attention to the social and material relations where they initiate their development. Following some leads traced back in Vygotsky's experimental-genetic method, and in dialogue with the developmental methodology of cross self-confrontations developed by Activity Clinic, I will discuss some methodological challenges that a research approach to study the development of concepts in work activities must address.

DIALOGUING IN THE WILD: PRACTICES OF (ONLINE) INFORMATION SEEKING IN A MULTILINGUAL COUNTRY

Natalia Durus, Gudrun Ziegler & Jinyoung Choi
Luxembourg multi-LEARN institute (Luxembourg)

Immigrants encounter difficulty in communication and obtaining information in host countries (Benitez 2006), which has been observed before and continues to be an issue with the phenomena of migration-s expanding and diversifying. Sexsmith (2010) considers barriers to gaining online information that are systemic to any immigrant population, which include "issues of linguistic competency" and "issues of cultural competency". In bi-/multi-lingual countries, achieving access to information and furthermore to participation in the host country, is even more complex, because information is available in different languages and of different target groups. Trilingual Luxembourg having half the population with foreigners is an interesting setting to trace these issues, as they emerge when diverse profiles of work-/life-mobility engage with the country upon arrival. Governmental or public bodies of Luxembourg put in place various channels of dialogs and communication with immigrants to enhance their integration. Among them, online provision of information has gained much importance particularly since COVID19. However, it is not clear whether such online communication is reaching out effectively to target people. This talk presents results from an investigation into the current states of provision of online dialogues and information in Luxembourg. More specifically, the following research questions are addressed with regard to a sample of 40 individuals/profiles: (1) How residents deal with online platforms of Luxembourg in their everyday lives; (2) How online platforms of Luxembourg take into consideration multilingualism and diversified ways of "looking" for/into information; (3) Particular issues immi-

grants of Luxembourg encounter in accessing and using the online platforms of Luxembourg; (4) Recommendations which can be drawn from the practices observed.

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