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## The Contributions of Executive Functioning to Handwritten and Keyboarded Compositions in Year 2

Pino-Pasternak, Deborah; Valcan, Debora; Anabela, Malpique; Teo, Timothy; Asil, Mustafa

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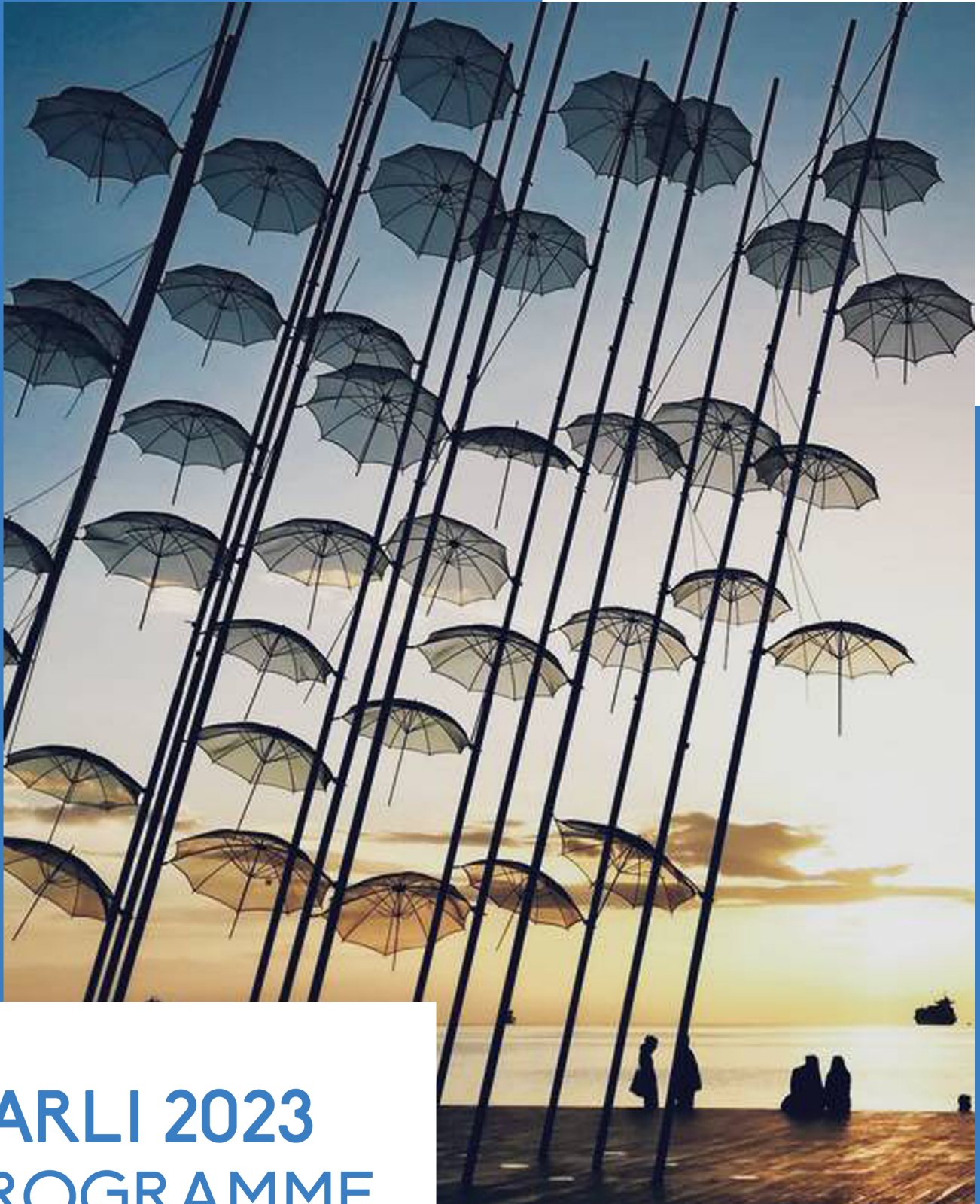
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# EARLI 2023 PROGRAMME BOOK

EARLI 2023  
The 20th Biennial EARLI Conference  
for Research on Learning and Instruction  
22 - 26 August 2023  
Thessaloniki, Greece

[EARLI.org/events/EARLI2023](https://EARLI.org/events/EARLI2023)

# PROGRAMME OVERVIEW

<b>TUESDAY</b> <b>22.08.23</b>	<b>WEDNESDAY</b> <b>23.08.23</b>	<b>THURSDAY</b> <b>24.08.23</b>	<b>FRIDAY</b> <b>25.08.23</b>	<b>SATURDAY</b> <b>26.08.23</b>
<b>08:00 – 09:30</b> Registrations (open all day)	<b>08:00 – 09:30</b> Session D	<b>08:00 – 09:30</b> Session H	<b>08:00 – 09:30</b> Session L	<b>08:00 – 09:30</b> Session Q
<b>9:30 – 10:30</b> Opening Ceremony	<b>09:45 – 11:15</b> Keynotes – PART 1	<b>09:45 – 11:15</b> Keynotes – PART 2	<b>09:45 – 11:15</b> Keynotes – PART 3	<b>09:45 – 11:15</b> Session R
<b>10:30 – 11:30</b> Policy Makers Session				
<b>11:30 – 12:00</b> Coffee Break	<b>11:15 – 11:45</b> Coffee Break	<b>11:15 – 11:45</b> Coffee Break	<b>11:15 – 11:45</b> Coffee Break	<b>11:15 – 11:45</b> Coffee Break
<b>12:15 – 13:45</b> Session A	<b>12:00 – 13:30</b> Session E	<b>12:00 – 13:30</b> Session I	<b>12:00 – 13:30</b> Session M	<b>12:00 – 13:30</b> Session S
<b>13:45 – 14:45</b> Lunch	<b>13:30 – 14:30</b> Lunch and Ancient Symposium for Early Career Researchers	<b>13:30 – 14:30</b> Lunch and Lunch with Professors	<b>13:30 – 14:30</b> Lunch	<b>13:30 – 14:30</b> Lunch
<b>15:00 – 16:30</b> Session B	<b>14:45 – 16:15</b> Session F	<b>14:45 – 16:15</b> Session J	<b>14:45 – 16:15</b> Session N	<b>14:45 – 16:15</b> Session T
<b>16:30 – 17:00</b> Coffee Break	<b>16:15 – 16:45</b> Coffee Break	<b>16:15 – 16:45</b> Coffee Break	<b>16:15 – 16:45</b> Coffee Break	<b>16:30 – 18:00</b> Session U
<b>17:15 – 18:45</b> Session C	<b>17:00 – 18:30</b> Session G	<b>17:00 – 18:30</b> Session K	<b>17:00 – 18:30</b> Session O	<b>18:15 – 19:00</b> Closing Ceremony
<b>19:00 – 20:30</b> Presidential Address and Awards	<b>18:30 – 20:30</b> SIG meetings	<b>18:45 – 20:00</b> Members Meeting	<b>18:45 – 20:15</b> Session P	<b>19:00 – ...</b> Farewell Reception
<b>20:30 – ...</b> Opening Reception			<b>20:30 – ...</b> Conference Dinner	

\*All times are local time (EEST).

# KEYNOTE SPEAKERS



**Prof. Dr. Daniel Ansari**  
University of Western  
Ontario (CA)

**Numbers, Brains,  
Development and  
Education: Progress,  
Challenges and Promise**

Daniel Ansari received his PhD from University College London in 2003. Presently, he is a Professor and Canada Research Chair in Developmental Cognitive Neuroscience and Learning in the Department of Psychology and the Brain & Mind Institute at the University of Western Ontario in London, Ontario, where he heads the Numerical Cognition Laboratory. Ansari and his team explore the developmental trajectory underlying both the typical and atypical development of numerical and mathematical skills, using both behavioral and neuroimaging methods.



**Prof. Dr. Pirjo Aunio**  
University of Helsinki (FI)

**Individual Differences in  
Early Numeracy, Executive  
Functions, Motor Skills and  
Physical Activity**

Since early 2000 Pirjo Aunio has conducted research in development and learning of mathematical skills, learning difficulties in mathematics, assessment of mathematical performance and development, and mathematical and related cognitive skills interventions. She has worked on developing evidence-based assessment and intervention tools to be used by teachers with funding from Ministry of Education and Culture. She has published more than 60 peer-review articles and books related to her research area. Pirjo Aunio works as a professor (Special Education, 2013->) at the University of Helsinki. Currently, she is also a visiting professor (Early Childhood Education) at the University of Johannesburg (South Africa).



**Prof. Dr. Sangeeta  
Bagga-Gupta**  
University of Jönköping (SE)

**On the Necessity of Major  
and Minor *Synvändor* in  
the Educational Sciences**

Sangeeta Bagga-Gupta is a professor of education with an interdisciplinary background. She is the scientific leader of the research environment CCD (Communication, Culture, Diversity), which she founded in the 1990s at Örebro University. Her research is characterised by a pronounced interdisciplinary/multidisciplinary perspective and has a strong international anchorage. Her research focuses on a number of themes in areas such as communication/language, identity, culture, digitalisation and learning based on ethnographic approaches at a micro-, meso- and macro-level, as well as socio-cultural and decolonial theories.



**Prof. Dr. Sarit Barzilai**  
University of Haifa (IL)

**Dr. Eva Thomm**  
University of Erfurt (DE)

**Dealing with  
Disagreement: Coming to  
Terms with the Social  
Nature of Knowledge**

Sarit Barzilai is a Senior Lecturer in the Department of Learning and Instructional Sciences in the Faculty of Education at the University of Haifa. Her primary research interests are understanding and fostering learners' digital literacy and epistemic thinking (i.e., thinking about knowledge and knowing) so that they can cope with the complexities of twenty-first century knowledge societies.

Eva Thomm obtained her PhD in 2013 at the Westfälische Wilhelms-Universität Münster in Germany. She currently works at the University of Erfurt and researches topics such as science reception, understanding and explaining expert controversy, understanding and evaluating scientific evidence and evaluating and using sources of information (sourcing).

# KEYNOTE SPEAKERS



**Assoc. Prof. Crina Damsa**  
University of Oslo (NO)

**Together for Learning:  
Understanding the  
Ecosystem of  
Collaborative Learning**

Crina Damsa is an associate professor and vice dean for innovation and digitalization at the Faculty of Educational Sciences at the University of Oslo in Norway. Her research focuses on social, cultural and technological aspects of learning across formal and informal settings, with an emphasis on dialogue, knowledge construction and pedagogical innovation.



**Prof. Dr. Nikos Makris**  
Democritus University of  
Thrace (GR)

**Consciousness as a  
Compass for Navigating  
Learning in Uncertain  
Times**

Nikolaos Makris currently holds a professorship in Cognitive Psychology at the Democritus University of Thrace in Greece. He is also the director of the Cognitive Development and Learning Lab. His research focuses on cognitive development in children and adolescents, as well as executive functioning, cognitive neuropsychology and neuroscience.



**Prof. Dr. Matthias Nückles**  
University of Freiburg (DE)

**Journal Writing as Medium  
for Thinking and Learning:  
Instructional Support to  
Foster Self-regulated  
Learning**

Matthias Nückles is an educational psychologist and professor of educational sciences at the University of Freiburg. In his research, he investigates how students' self-regulated learning can be effectively supported. He further seeks to improve understanding of successful teaching in order to create learning environments that support prospective teachers in the development of their teaching abilities. His research is interdisciplinary, as he tries to integrate ideas from educational, social and cognitive psychology as well as from the philosophy of science. Also, he fosters collaboration with researchers in mathematics, science, history and literature education.



**Prof. Dr. Thierry Olive**  
University of Poitiers (FR)

**Learning to Master  
Writing: Coping with  
Cognitive Demands of  
Writing Processes**

Thierry Olive is a psychology researcher at the University of Poitiers, specialising in language issues and, in particular, the cognitive mechanisms supporting writing skills in adults and learning to write in children with a learning or language disability. He also studies how writing tools, particularly digital tools, affect cognitive functioning.



**Prof. Dr. Gale Sinatra**  
University of Southern  
California (US)

**Why Deny? The  
Psychology of Public  
Misunderstanding of  
Science**

Gale Sinatra is a Professor of Psychology and the Stephen H. Crocker Professor of Education at Rossier. Her areas of expertise include climate science education, evolution education, learning theory, knowledge construction, conceptual change learning, literacy acquisition, assessment, and the public understanding of science. Her recent research focuses on understanding the cognitive and motivational processes that lead to successful learning in science. Specifically, she focuses on the role of motivation and emotion in teaching and learning about controversial topics, such as biological evolution and climate change.

# INVITED SYMPOSIA

ORGANISERS	SYMPOSIUM TITLE	SCHEDULING
<b>Jennie Grammer, Adi Korisky, Pawel Matusz, Tieme Janssen</b> Emerging Field Group	Attention Please! Real-world Neuroscience Investigations into Attention with Increasing Naturalism	Tuesday 22 August 12:15 – 13:45 AUTH_CH
<b>Julian Roelle</b> Emerging Field Group	Synthesizing Cognitive Load and Self-regulated Learning: Four Years of EFG MRE Research	Tuesday 22 August 15:00 – 16:30 AUTH_CH
<b>Karel Kreijns, Derya Orhan Göksün, Kamakshi Rajagopal, Maartje Peters, Joshua Weidlich</b> Emerging Field Group	Social Presence and Telepresence in Online Social Learning	Tuesday 22 August 15:00 – 16:30 UOM_CH
<b>Christian Tarchi</b> Italian Psychological Association (Section Developmental and Educational Psychology)	Raising Awareness About Online Readers' Awareness: Digital Competence in Multiple-Text Contexts	Tuesday 22 August 17:15 – 18:45 AUTH_CH
<b>Andreas Demetriou</b> The Cyprus Academy of Sciences, Letters and Arts	Educating the Developing Mind: An Overarching Theory for Development and Learning	Tuesday 22 August 17:15 – 18:45 UOM_CH
<b>Andreas Lachner, Vincent Hoogerheide, Salome Wagner</b> SIG 7	A Multi-disciplinary Perspective on Immersive Virtual Reality Learning and Instruction	Wednesday 23 August 08:00 – 09:30 AUTH_DC3
<b>Christa Asterhan</b> SIG 26	Teacher Learning About and Through Dialogue and Argumentation	Wednesday 23 August 08:00 – 09:30 AUTH_CH
<b>Dietsje Jolles, Stephan Vogel</b> SIG 22	How Learning and Education Shape the Brain	Wednesday 23 August 08:00 – 09:30 HELEXPO_CC
<b>Rolf Strietholt</b> International Association for the Evaluation of Educational Achievement (IAE)	Current Issues in Measuring and Modeling Motivational Outcomes International Large-scale Assessments	Wednesday 23 August 12:00 – 13:30 HELEXPO_CC
<b>Rui Alexandre Alves</b> EARLI Journal and Book Series	Meet the EARLI Editors	Wednesday 23 August 12:00 – 13:30 AUTH_CH

<b>ORGANISERS</b>	<b>SYMPOSIUM TITLE</b>	<b>SCHEDULING</b>
<b>Alberto Cattaneo</b> SIG 6	Investigating Technology Integration in Learning Activities Through the Lens of the ICAP Model	Wednesday 23 August 14:45 – 16:15 HELEXPO_CC
<b>Martin Ubani, Alexander Unser, Sarah Delling</b> SIG 19	Religions and Worldviews in Education Providing Hope of Social Sustainability	Wednesday 23 August 14:45 – 16:15 UOM_CH
<b>Koen Veermans, Valentina Nachtigall</b> SIG 20	Phases of Inquiry in Practice: Contexts and Variations	Wednesday 23 August 17:00 – 18:30 AUTH_CH
<b>Franziska Cohen</b> SIG 5	From Access to Impact: A Quality Perspective on Early Childhood Digital Education	Thursday 24 August 08:00 – 09:30 HELEXPO_CC
<b>Essi Ryymin, Emmy Vrieling</b> EAPRIL	Practice-based Research Exploring the Complexity Between Teaching, Wellbeing and Innovation	Thursday 24 August 08:00 – 09:30 UOM_CH
<b>Katariina Salmela-Aro, Barbara Schneider</b> AERA	The Effects of Social and Emotional Learning on Children's Cognitive and Psychological Wellbeing	Thursday 24 August 12:00 – 13:30 AUTH_CH
<b>Jose Carlos Ocampo, Morgane Senden</b> SIG 1	The Social Dimensions of Peer Assessment	Thursday 24 August 12:00 – 13:30 UOM_CH
<b>Laure Kloetzer</b> SIG 10	Aesthetic Experience as a Tool for Learning and Development	Thursday 24 August 14:45 – 16:15 UOM_A03
<b>Malamati Tsapoutzoglou</b>	Supporting Researchers at Risk: The Key Role of European Academia	Thursday 24 August 14:45 – 16:15 AUTH_CH
<b>Nikolaos Makris</b> Hellenic Psychological Society	Contributions of Greek Psychological Research in Education	Thursday 24 August 14:45 – 16:15 HELEXPO_CC
<b>Perry den Brok, Frans Prins</b> SIG 4	Improving University Teaching Through Teachers' Professional Learning and Development	Thursday 24 August 14:45 – 16:15 UOM_CH

<b>ORGANISER</b>	<b>SYMPOSIUM TITLE</b>	<b>SCHEDULING</b>
<b>Yves Karlen, Charlotte Dignath</b> SIG 16	A Look into the Crystal Ball: Which Directions Should Metacognition and SRL Research Take?	Thursday 24 August 17:00 – 18:30 HELEXPO_CC
<b>Erika Löfström</b> SIG 24	Transitions in Researcher Education and Careers	Thursday 24 August 17:00 – 18:30 AUTH_DC2
<b>Valeska Grau Cardenas</b> SIG 28	Creating Spaces for Children to Meet Uncertainty Through Play and Playful Learning	Friday 25 August 08:00 – 09:30 AUTH_DC3
<b>Ann-Sofie Jägerskog</b> SIG 9	To See the Yet Unseen – “Critical Aspects” as a Key to Developing Teaching and Students’ Learning	Friday 25 August 08:00 – 09:30 AUTH_CH
<b>Ricardo Böheim, Jennifer Symonds</b> Emerging Field Group	Different Perspectives on Momentary Situated Engagement in Classroom Contexts	Friday 25 August 12:00 – 13:30 UOM_CH
<b>Jasperina Brouwer</b> SIG 17	Social Network Tools: Advanced Methods to Contextualize Learning Research	Friday 25 August 12:00 – 13:30 AUTH_CH
<b>Robert Klassen, Sophie Thompson-Lee</b> EARLI Centre for Excellence in Research (E-CER)	Building a Better Understanding of Teachers’ Well-being	Friday 25 August 12:00 – 13:30 HELEXPO_CC
<b>Carolin Hahnel, Cornelia Schoor</b> SIG 2	Avenues to Improve Students’ Learning with Multiple Documents	Friday 25 August 14:45 – 16:15 UOM_CH
<b>Jake McMullen</b> EARLI Centre for Excellence in Research (E-CER)	Spontaneous Mathematical Focusing Tendencies in Early Childhood	Friday 25 August 14:45 – 16:15 AUTH_CH



<b>ORGANISER</b>	<b>SYMPOSIUM TITLE</b>	<b>SCHEDULING</b>
<b>Lihong Huang</b> SIG 13	Opportunities & Challenges of Learning and Assessment in Democratic Citizenship Education in Schools	Friday 25 August 14:45 – 16:15 HELEXPO_CC
<b>Michael Goller, Maaike Endedijk, Andreas Rausch</b> SIG 14	Intensive Longitudinal Methods – The Way Forward in Researching Professional Learning	Friday 25 August 17:00 – 18:30 HELEXPO_CC
<b>Pirjo Aunio</b> SIG 15	Fundamental Academic Learning in Students with Various Educational Needs – Longitudinal Evidence	Friday 25 August 17:00 – 18:30 UOM_CH
<b>Maria Bäcke</b> SIG 21	Social Sustainability Efforts and Learning Experiences in Diverse and Multicultural Practices	Friday 25 August 17:00 – 18:30 AUTH_CH
<b>Leen Catrysse</b> SIG 27	Process Measures in the Era of Artificial Intelligence	Friday 25 August 18:45 – 20:15 HELEXPO_CC
<b>Markku Hannula</b> Emerging Field Group	Recent Advances of Eye-tracking Methods Applied in Educational Research	Friday 25 August 18:45 – 20:15 UOM_CH
<b>Hanni Muukkonen</b> EARLI Centre for Excellence in Research (E-CER)	Multimodal Analytical Approaches in Researching Collaborative Problem Solving	Friday 25 August 18:45 – 20:15 AUTH_CH
<b>Tim Mainhard</b> Emerging Field Group	The Potential of Biophysiology for Understanding Motivation, Engagement, and Learning	Saturday 26 August 08:00 – 09:30 AUTH_CH
<b>Garvin Brod</b> SIG 3	Understanding and Alleviating Difficulties in Science Learning: An Intra-individual Perspective	Saturday 26 August 09:45 – 11:15 UOM_CH

<b>ORGANISER</b>	<b>SYMPOSIUM TITLE</b>	<b>SCHEDULING</b>
<b>Alexandra Nordström</b> SIG 25	Roles and Nuances of Theoretical Work in Different Domains of Educational Research	Saturday 26 August 09:45 – 11:15 AUTH_CH
<b>Hanna Järvenoja, Hanna Gaspard</b> SIG 8	Situation- and Context- specificity of Motivation and Emotions	Saturday 26 August 09:45 – 11:15 UOM_CR
<b>Charalambos Charalambous, Anna-Katharina Praetorius</b> SIG 18	Non-convincing Effects in Research on Teaching Quality: Reasons and Possible Solutions	Saturday 26 August 12:00 – 13:30 UOM_CH
<b>Eva Staffans</b> The Nordic Educational Research Association	Creative, Inclusive and Equitable Play and Learning Environments: Children's Participation in Focus	Saturday 26 August 12:00 – 13:30 AUTH_DC3
<b>Liana Konstantinidou</b> SIG 12	Instructional Practices for Enhancing Literacy Skills Across Educational Contexts	Saturday 26 August 14:45 – 16:15 AUTH_DC2
<b>Vivienne Baumfield</b> BERA	Education: Societal Change, Hope and the State of the Discipline	Saturday 26 August 14:45 – 16:15 AUTH_DC3
<b>Lisa Bardach</b> EFG	More Than Just Noise? New Insights on Heterogeneity in Students' Perceptions of Instruction	Saturday 26 August 16:30 – 18:00 UOM_CH

# CONFERENCE APP

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and receive push notifications for last-minute schedule changes. We strongly recommend all delegates to download the app, as it is the fastest and easiest way to consult the conference programme! Download the Guidebook app via the App or Play Store and enter the passphrase to download the EARLI 2023 app.

# SIG MEETINGS

01

## ASSESSMENT AND EVALUATION

Wednesday 23.08  
18:30 – 19:30  
UOM\_A02

## COMPREHENSION OF TEXT AND GRAPHICS

Wednesday 23.08  
19:30 – 20:30  
UOM\_A11

02

03

## CONCEPTUAL CHANGE

Wednesday 23.08  
18:30 – 19:30  
UOM\_CR

## HIGHER EDUCATION

Wednesday 23.08  
19:30 – 20:30  
UOM\_CH

04

05

## LEARNING AND DEVELOPMENT IN EARLY CHILDHOOD

Wednesday 23.08  
18:30 – 19:30  
UOM\_R08 (joint meeting with SIG 28)

## INSTRUCTIONAL DESIGN

Wednesday 23.08  
18:30 – 19:30  
UOM\_CH (joint meeting with SIG 07)

06

07

## TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION

Wednesday 23.08  
18:30 – 19:30  
UOM\_CH (joint meeting with SIG 06)

# SIG MEETINGS

08

## MOTIVATION AND EMOTION

Wednesday 23.08  
19:30 – 20:30  
UOM\_A02

## PHENOMENOGRAPHY AND VARIATION THEORY

Wednesday 23.08  
18:30 – 19:30  
UOM\_A10

09

10

## SOCIAL INTERACTION IN LEARNING AND INSTRUCTION

Wednesday 23.08  
19:30 – 20:30  
UOM\_A03

## TEACHING AND TEACHER EDUCATION

Wednesday 23.08  
18:30 – 19:30  
UOM\_A03

11

12

## WRITING

Wednesday 23.08  
19:30 – 20:30  
UOM\_A13

## MORAL AND DEMOCRATIC EDUCATION

Wednesday 23.08  
18:30 – 19:30  
UOM\_A11

13

14

## LEARNING AND PROFESSIONAL DEVELOPMENT

Wednesday 23.08  
19:30 – 20:30  
UOM\_R08

# SIG MEETINGS

15

## SPECIAL EDUCATIONAL NEEDS

Wednesday 23.08  
18:30 – 19:30  
UOM\_R09

## METACOGNITION AND SELF-REGULATED LEARNING

Wednesday 23.08  
19:30 – 20:30  
UOM\_CR

16

17

## METHODS IN LEARNING RESEARCH

Wednesday 23.08  
18:30 – 19:30  
UOM\_A07

## EDUCATIONAL EFFECTIVENESS AND IMPROVEMENT

Wednesday 23.08  
19:30 – 20:30  
UOM\_R05

18

19

## RELIGIONS AND WORLDVIEWS IN EDUCATION

Wednesday 23.08  
18:30 – 19:30  
UOM\_A06

## INQUIRY LEARNING

Wednesday 23.08  
19:30 – 20:30  
UOM\_A06

20

21

## LEARNING AND TEACHING IN CULTURALLY DIVERSE SETTINGS

Wednesday 23.08  
18:30 – 19:30  
UOM\_R05

# SIG MEETINGS

**22**

## **NEUROSCIENCE AND EDUCATION**

Wednesday 23.08  
19:30 – 20:30  
UOM\_A04

**24**

## **RESEARCHER EDUCATION AND CAREERS**

Wednesday 23.08  
19:30 – 20:30  
UOM\_A10

## **EDUCATIONAL THEORY**

Wednesday 23.08  
18:30 – 19:30  
UOM\_A04

**25**

**26**

## **ARGUMENTATION, DIALOGUE AND REASONING**

Wednesday 23.08  
19:30 – 20:30  
UOM\_A07

## **ONLINE MEASURES OF LEARNING PROCESSES**

Wednesday 23.08  
18:30 – 19:30  
UOM\_A13

**27**

## **PLAY, LEARNING AND DEVELOPMENT**

Wednesday 23.08  
18:30 – 19:30  
UOM\_R08 (joint meeting with SIG 5)

**28**

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**LifBi** provides longitudinal data for empirical educational research. This includes the National Educational Panel Study (NEPS), the largest long-term educational study in Germany. Our own research focuses on competence development, structures and conditions of education, social inequalities over the life course, educational outcomes and survey methodology.

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# EARLI 2023 ORGANISERS

## EARLI EXECUTIVE COMMITTEE and EARLI OFFICE

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<b>PRESIDENT-ELECT</b>	<b>Prof. Lucia Mason</b> University of Padova
<b>SECRETARY-TREASURER</b>	<b>Dr. Tijs Rotsaert</b> Ghent University
<b>ORDINARY MEMBERS</b>	<b>Assoc. Prof. Rui A. Alves</b> University of Porto <b>Prof. Raija Hämäläinen</b> University of Jyväskylä <b>Prof. Jo Van Herwegen</b> University College London <b>Prof. Armin Weinberger</b> Saarland University
<b>EX-OFFICIO MEMBERS</b>	<b>Prof. Eleftheria N. Gonida</b> Aristotle University of Thessaloniki <b>Prof. Gert Rijlaarsdam</b> University of Amsterdam <b>Prof. Hans Gruber</b> University of Regensburg <b>Prof. Nina Bonderup Dohn</b> University of Southern Denmark <b>Prof. Mien Segers</b> Maastricht University <b>Patrick Belpaire</b> EARLI Office
<b>EARLI OFFICE</b>	<b>Havva Akcaoglu</b> <b>Ruben Hendrickx</b> <b>Lisa Vanhaeren</b> <b>Lore Verschakelen</b>

# EARLI 2023 ORGANISERS

## INTERNATIONAL AND LOCAL ORGANISING COMMITTEE

<b>EARLI 2023 President</b>	<b>Prof. Eleftheria N. Gonida</b> Aristotle University of Thessaloniki
<b>EARLI 2023 Vice-President</b>	<b>Maria Platsidou</b> University of Macedonia
<b>EARLI 2023 Conference Management Team</b>	SYMVOLI Conference & Cultural Management <b>Vicky Papadimitriou</b> , Project Coordination <b>Annetta Pavloudi</b> , Project Management <b>Maria Stoimenou</b> , Project Management
<b>EARLI 2021 Conference Manager</b>	<b>Prof. Roger Säljö</b> University of Gothenburg
<b>EARLI 2019 Conference Managers</b>	<b>Dr. Kerstin Helker</b> Eindhoven University of Technology <b>Dr. Judith Fränken</b> Alfred Toepfer Stiftung
<b>EARLI 2023 Local Organising Committee</b>	<b>Anastasia Alevriadou</b> , Professor, School of Psychology, Aristotle University of Thessaloniki <b>Elisavet Chrysochoou</b> , Assistant Professor, School of Psychology, Aristotle University of Thessaloniki <b>Vassiliki Giannouli</b> , Assistant Professor, Department of Educational and Social Policy, University of Macedonia <b>Zoe Kantaridou</b> , Ph.D, University of Macedonia <b>Lefkothea Kartasidou</b> , Associate Professor, Department of Educational and Social Policy, University of Macedonia <b>Panayiota Metallidou</b> , Professor, School of Psychology, Aristotle University of Thessaloniki <b>Lito Michalopoulou</b> , Ph.D, School of Psychology, Aristotle University of Thessaloniki <b>Julie Vaiopoulou</b> , Ph.D, School of Psychology, Aristotle University of Thessaloniki

Conference Annotations:

Conference Annotations:

NEW SESSIONS:

SESSION D:28 - INVITED WORKSHOP: "ACADEMIC PUBLISHING" LED BY H. GRUBER AND N. BONDERUP DOHN IN ROOM: AUTH\_TE1.

SESSION I:26 - INVITED WORKSHOP: "PUBLISHING IN LEARNING & INSTRUCTION: BECOMING A PRODUCTIVE RESEARCHER AND PUBLISHING AUTHOR" LED BY G. RIJLAARSDAM ET AL. IN ROOM: UOM\_A07.

SESSION K: 26 - INVITED PANEL: "SUPPORTING TEACHING IN HIGHER EDUCATION: THE ROLE OF TEACHING AND LEARNING CENTERS AT TIMES OF CHANGE" LED BY D. S. KOVEOS ET AL IN ROOM: UOM\_CH.

WEDNESDAY, 23 AUGUST 2023

Session D: 28

Time: 08:00-09:30

Location: AUTH\_TE1

**INVITED WORKSHOP: ACADEMIC PUBLISHING**

**Academic Publishing**

Hans Gruber, University of Regensburg, Germany; Nina Bonderup Dohn, University of Southern Denmark, Denmark

THURSDAY, 24 AUGUST 2023

Session I: 26

Time: 12:00-13:30

Location: UOM\_A07

**INVITED WORKSHOP: PUBLISHING IN LEARNING & INSTRUCTION: BECOMING A PRODUCTIVE RESEARCHER AND PUBLISHING AUTHOR**

**Chair**

Gert Rijlaarsdam, University of Amsterdam, The Netherlands

**Publishing in Learning & instruction: Becoming a Productive Researcher and Publishing Author**

Alexandra List, The Pennsylvania State University, United States; Wilfried Admiraal, Oslo Metropolitan University, Norway; Sven De Maeyer, Antwerp University, Belgium; Minna Hannula-Sormunen, University of Turku, Finland

Session K: 26

Time: 17:00-18:30

Location: UOM\_CH

**INVITED PANEL: SUPPORTING TEACHING IN HIGHER EDUCATION: THE ROLE OF TEACHING AND LEARNING CENTERS AT TIMES OF CHANGE**

**Chair**

Dimitrios Koveos, Aristotle University of Thessaloniki, Greece

**Organisers**

Domna Kakana, Aristotle University of Thessaloniki, Greece;  
Thrasyvoulos Tsiatsos, Aristotle University of Thessaloniki, Greece

**Reflections on 20 years of a Teaching and Learning Centre at University College Dublin: Building a Community and Supporting the Institution**  
David Jennings, University College Dublin, Ireland

**Teaching and Learning Centers in Greece: From Vision to Practice**  
Maya Satratzemi, University of Macedonia, Thessaloniki

**TLCs at the University of Amsterdam: towards local and international faculty development**  
Tom Broens, University of Amsterdam, The Netherlands

**Disability and Higher Education: The Quest for Authentic Inclusivity**  
Susana Padeliadu, Aristotle University of Thessaloniki, Greece

**The Opportunities and Challenges of Technology for Teaching and Learning in Higher Education**  
Thrasyvoulos Tsiatsos, Aristotle University of Thessaloniki, Greece

Policy Makers Session: 1

Time: 10:30-11:30

Location: HELEXPO\_CC

**POLICY MAKERS PANEL: LEARNING AND INSTRUCTION IN THE DIGITAL AGE: CHALLENGES AND HOPES FOR EDUCATION AND DEMOCRACY****Chair**

Eleni Kyza, Cyprus University of Technology, Cyprus

**Organisers**

Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Eleni Kyza, Cyprus University of Technology, Cyprus

**Learning and Instruction in the Digital Age: Challenges and Hopes for Education and Democracy**

ANDREAS DEMETRIOU, University of Nicosia and Cyprus Academy of Sciences, Letters, and Arts, Cyprus; Anantha Duraiappah, UNESCO MGIEP, India; Sanna Järvelä, University of Oulu, Finland; Roger Saljo, University of Gothenburg, Sweden

Session A: 1

Time: 12:15-13:45

Location: AUTH\_CH

**INVITED SYMPOSIUM: ATTENTION PLEASE! REAL-WORLD NEUROSCIENCE INVESTIGATIONS INTO ATTENTION WITH INCREASING NATURALISM.****Chair**

Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands

**Organisers**

Jennie Grammer, UCLA, United States; Adi Korisky, Bar-Ilan University, Israel; Pawel Matusz, University of Applied Sciences Western Switzerland (HES-SO Valais-Wallis), Switzerland; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands

**Discussant**

Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

**The context-dependence of neurocognitive attentional control functions**

Pawel Matusz, University of Applied Sciences Western Switzerland (HES-SO Valais-Wallis), Switzerland

**Examining elementary school children's attention while learning online**

Jennie Grammer, UCLA, United States

**Are you listening to me? Attention in real-life classrooms**

Elana Zion Golumbic, Bar Ilan University, Israel; Adi Korisky, Bar-Ilan University, Israel

**Mobile EEG neurofeedback to convince high school students of the controllable nature of their brain**

Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands

**ANNOTATIONS:**

EFG INVITED SYMPOSIUM

Session A: 2

Time: 12:15-13:45

Location: UOM\_CH

**INVITED SYMPOSIUM: 'HOPE' FOR DISADVANTAGED STUDENTS: EXTENDED EDUCATION IN A GLOBAL PERSPECTIVE****Chair**

Nanine Lilla, Freie Universität Berlin, Germany

**Organisers**

Nanine Lilla, Freie Universität Berlin, Germany; Marianne Schuepbach, Freie Universität Berlin, Germany; Ingrid Gogolin, University of Hamburg, Germany; Liesel Ebersöhn, Unit for Education Research in AIDS, South Africa

**Discussants**

David Thore Gravesen, VIA University College, Denmark; Ioulia Televantou, European University Cyprus, Cyprus

**Educational quality of extended education in Germany with a focus on disadvantaged students**

Jule Schmidt, Freie Universität Berlin, Germany; Haiqin Ning, Freie Universität Berlin, Germany; Nanine Lilla, Freie Universität Berlin, Germany; Marianne Schuepbach, Freie Universität Berlin, Germany

**The role of background characteristics for participation in all-day schooling in Germany**

Luise Krejciak, Universität Hamburg, Germany; Ingrid Gogolin, University of Hamburg, Germany

**The Conundrum of OSHC services in Australia**

Jennifer Cartmel, Griffith University, Australia; Bruce Hurst, University of Melbourne, Australia

**Why young people in high-poverty contexts choose not to participate in Out-of-School Time provision**

Kirstin Kerr, University of Manchester, United Kingdom; Claire Forbes, University of Manchester, United Kingdom

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE WORLD EDUCATION RESEARCH ASSOCIATION (WERA)



Session A: 3

Time: 12:15-13:45

Location: UOM\_A03

**SYMPOSIUM: NEW PROCEDURE TO ASSESS EXECUTIVE FUNCTION AND PREDICT LEARNING OUTCOME IN SPECIAL EDUCATIONAL NEEDS****Chair**

Chiara Pecini, University of Florence, Italy

**Discussant**

Pirjo Aunio, University of Helsinki, Finland

**The development of Executive Functions with early term toddlers from families with social burdens**

Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland, Switzerland; Simone Schaub, University of Teacher Education in Special Needs, Switzerland; Erich Ramseier, PH Bern, University of Teacher Education, Berne, Switzerland; Christina Koch, University of Teacher Education in Special Needs, Zurich, Switzerland; Alex Neuhauser, University of Applied Sciences of Special Needs Education, Switzerland; Isabelle Kalkusch, University of Teacher Education in Special Needs, Zurich, Switzerland; Patsawee Rodcharoen, University of Teacher Education in Special Needs, Zurich, Switzerland & University of Bern, Switzerland; Andrea Lanfranchi, University of Applied Sciences of Special Needs Education, Switzerland

**Executive functions in blind and deaf children: a Tablet-based assessment**

Camila Martínez, Pontificia Universidad Católica de Chile, CIE 160007, Chile; María Victoria Espinoza, Centre for Educational Justice at the Pontifical Catholic University of Chile., Chile; Catalina Santa Cruz, Centre for Educational Justice at the Pontifical Catholic University of Chile., Chile; Ricardo Rosas Diaz, CEDEti-UC, Chile

**Assessing inattentive children's executive functioning in quiet and noise**

Barbara Arfé, University of Padova, Italy; Gaia Spacciarelli, Human Inspired Technology Centre, University of Padova, Italy; Chiara Montuori, Human Inspired Technology Centre, University of Padova, Italy; Flavia gheller, School of Psychology, University of Padova, Italy, Italy

**Paper and digital learnings in low and high performers: the involvement of Executive Functions**

Costanza Ruffini, University of Florence, Italy; Christian Tarchi, University of Florence, Italy; Chiara Pecini, University of Florence, Italy

Session A: 4

Time: 12:15-13:45

Location: AUTH\_DC3

**SYMPOSIUM: THEORETICAL OR METHODOLOGICAL PERSPECTIVE ON PROCESS-ORIENTED RESEARCH OF MOTIVATION AND EMOTION****Chair**

Tiina Susanna Törmänen, University of Oulu, Finland

**Organiser**

Hanna Jarvenoja, University of Oulu, Finland

**Discussant**

Roger Azevedo, University of Central Florida, United States

**Theoretical Challenges for Motivational Regulation revisited: Data Granularity and Time Frame**

Thomas Martens, Medical School Hamburg, Germany; Moritz Niemann, MSH Medical School Hamburg, Germany; Diana Pistoll, Medical School Hamburg, Germany

**Paradigmatic shifts in theory and methods regarding short-term motivational & emotional processes**

Julia Moeller, Universität Leipzig, Germany; Julia Dietrich, Friedrich-Schiller-University Jena, Germany; Jessica Baars, Leipzig University, Germany; Miriam Jähne, Friedrich-Schiller-University Jena, Germany; Lennart Nörenberg, Universität Leipzig, Germany

**Multilayered perspective on Motivation and Emotion Regulation in Collaborative Learning**

Hanna Jarvenoja, University of Oulu, Finland; Tiina Susanna Törmänen, University of Oulu, Finland; Tatiana Shubina, University of Oulu, Finland, Finland; Kristiina Mänty, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

**Examining Medical Residents' Physiological Synchrony During Crisis Simulation Training**

Jason Harley, McGill University, Canada; Lucia Patino, McGill University, Canada; Matthew Moreno, McGill University, Canada; Keerat Grewal, McGill University, Canada; Sayed Azher, McGill University, Canada; Negar Matin, McGill University, Canada

Session A: 5

Time: 12:15-13:45

Location: AUTH\_DC1

**SYMPOSIUM: GOALS, REASONS, AND COMPLEXES: CURRENT ADVANCES IN ACHIEVEMENT GOAL RESEARCH****Chairs**

Martin Daumiller, University of Augsburg, Germany; Marc Philipp Janson, University of Mannheim, Germany

**Discussant**

Ruth Butler, Hebrew University of Jerusalem, Israel

**Beyond Approach-Avoidance: Achievement Goals, Regulatory Foci, and Self-Guides**

Sophie Bossert, University of Mannheim, Germany; Marc Philipp Janson, University of Mannheim, Germany

**Do Perfectionistic Tendencies Moderate the Effect of Goals and Goal Reasons on Academic Well-being?**

Markku Niemivirta, University of Eastern Finland, Finland; Antti Pulkka, National Defence University, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Eastern Finland, Finland

**Autonomous Reasons Underlying Achievement Goals and Challenge-seeking, Procrastination, and Grades**

Athanasios Mouratidis, National and Kapodistrian University of Athens, Greece; Aikaterini Michou, University of Ioannina, Greece; Aysenur Alp, University of Zurich, Switzerland; Aylin Kocak, Izmir University of Economics, Turkey; Şule Selçuk, University of Kastamonu, Turkey

**You did well! Does Feedback Independently or Interactively with Goal Complexes Affect Outcomes?**

Aikaterini Michou, University of Ioannina, Greece; Servet Altan, MEF University, Turkey; Athanasios Mouratidis, National and Kapodistrian University of Athens, Greece; Maarten Vansteenkiste, Ghent University, Belgium; Caroline Pulfrey, Swiss Federal Institute of Technology, Switzerland

Session A: 6

Time: 12:15-13:45

Location: UOM\_A06

**SYMPOSIUM: DETERMINANTS OF SCHOOL SUCCESS FOR IMMIGRANT CHILDREN****Chair**

Sebastian Nicolas Thomas Vogel, TU Dortmund University, Germany

**Organisers**

Justine Stang-Rabrig, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Discussant**

FROSSO MOTTI, National and Kapodistrian University of Athens, Greece

**Primary school enrollment of refugee children in Germany**

Melanie Olczyk, Martin-Luther Universität Halle-Wittenberg, Germany; Julian Seuring, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Gisela Will, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**English language and reading development of migrant children in Ireland**

Merike Darmody, The Economic and Social Research Institute, Ireland; Helen Russell, The Economic and Social Research Institute, Ireland; Frances McGinnity, The Economic and Social Research Institute, Ireland

**What helps immigrant and refugee children succeed at the end of German primary school?**

Sebastian Nicolas Thomas Vogel, TU Dortmund University, Germany; Justine Stang-Rabrig, TU Dortmund University, Germany; Philipp Jugert, Institute for Psychology of Duisburg-Essen University, Germany; Birgit Leyendecker, Faculty of Psychology, Child and Family Research, Ruhr-University Bochum, Germany; Nele McElvany, TU Dortmund University, Germany

**Determinants of school success for immigrant children - the case of newly arrived students in Sweden**

Nihad Bunar, Department of Special Education, Stockholm University, Sweden

Session A: 7

Time: 12:15-13:45

Location: UOM\_A02

**SYMPOSIUM: THE DEVELOPMENT OF FEEDBACK LITERACY: FROM INTERVENTION PROGRAMS TO PROGRAMME INTERVENTIONS****Chair**

Martijn Leenknecht, HZ University of Applied Sciences, Netherlands

**Organiser**

Martijn Leenknecht, HZ University of Applied Sciences, Netherlands

**Discussant**

Rachelle Esterhazy, University of Oslo, Norway

**Can Students' Feedback Literacy be Improved? A Scoping Review of Interventions**

David Boud, Deakin University/University of Technology Sydney, Australia; Joanna Tai, Deakin University, Australia; Tegan Miller, Deakin University, Australia; Phillip Dawson, Deakin University, Australia

**The Development of Feedback Literacies and Identities of First Year Education Students**

Juuso Henrik Nieminen, The University of Hong Kong, Finland

**Feedback Seeking of Undergraduate Nursing Students: From Whom and Why?**

Martijn Leenknecht, HZ University of Applied Sciences, Netherlands; Hanneke Wiltjer, HZ University of Applied Sciences, Netherlands

**Student and Teacher Feedback Literacy in the Context of Programmatic Assessment**

Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands; Natalie Liebrechts, Utrecht University, Netherlands

Session A: 8

Time: 12:15-13:45

Location: UOM\_CR

**SYMPOSIUM: EMOTIONAL DESIGN AND THE NECESSARY BUT NOT SUFFICIENT INFLUENCE OF TRIGGERING MOTIVATION****Chair**

Tino Endres, University of Freiburg, Germany

**Organiser**

Tino Endres, University of Freiburg, Germany

**Discussant**

K. Ann Renninger, Swarthmore College, United States

**Contextual animation in multimedia learning materials for children: saga of null results continues**

Cyril Brom, Charles University, Czech Republic; Karolína Schubertová, Czech Television, Faculty of Arts, Czech Republic; Anna Drobná, Faculty of Education, Faculty of Mathematics and Physics, Czech Republic; Kristina Volná, Czech Television, Czech Republic

**How emotionally designed scaffolds affect learning and motivational outcomes in game-based learning?**

Antti Koskinen, University of Tampere, Finland, Finland; Jake McMullen, University of Turku, Finland; Manuel Ninaus, University of Graz, Austria; Kristian Kiili, Tampere University, Finland

**Narratives as feature of emotional designed whiteboard animations – learning effects and moderators**

Sascha Schneider, University of Zurich, Switzerland

**Can emotional design be an aid to overcome the hurdle of high opportunity-costs in learning?**

Charlotte Vössing, University of Freiburg, Germany; Tino Endres, University of Freiburg, Germany; Alexander Eitel, University of Giessen, Germany; Alexander Renkl, University of Freiburg, Germany

Session A: 9

Time: 12:15-13:45

Location: AUTH\_DC2

**SYMPOSIUM: IMPLICATIONS OF DIFFERENT RESPONSES TO ERRORS. PERSPECTIVES FROM SEVERAL EDUCATIONAL CONTEXTS****Chair**

Annalisa Soncini, University of Bologna, Italy

**Discussant**

Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

**Error climate and alienation from teachers: A longitudinal analysis in primary school**

Gabriele Steuer, University of Bielefeld, Germany; Alyssa Laureen Greco, Center for Research on Education and School Development, Germany; Julia Morinaj, University of Bern, Switzerland

**Supportive error feedback fosters students' positive emotions and motivation**

Annalisa Soncini, University of Bologna, Italy; Maria Cristina Matteucci, University of Bologna, Italy

**How you talk to your kids about setbacks and failures matters**

Elizabeth Peterson, University of Auckland, New Zealand; Sharma Tanvi, The University of Auckland, New Zealand; Amy Bird, The University of Auckland, New Zealand; Elaine Reese, The University of Auckland, New Zealand; Annette Henderson, The University of Auckland, New Zealand; Varun Ramgopal, Madras Institute of Development Studies, India; Susan M B Morton, The University of Auckland, New Zealand

**The value of (learning from) mistakes in teacher education in Finland and Germany**

Annika Breternitz, Technische Hochschule Ostwestfalen-Lippe, Germany; Maria Tulis, University of Salzburg, Austria

Session A: 10

Time: 12:15-13:45

Location: AUTH\_TE2

**SINGLE PAPER: ONLINE LEARNING IN HIGHER EDUCATION****Chair**

Daniel Dinsmore, University of North Florida, United States

**The Role of Attitudes, Peer and Lecturer Norms in Predicting How Students Use Lecture Recordings.**

Kasia Banas, University of Edinburgh, United Kingdom; Thomas Thejll-Madsen, University of Glasgow, United Kingdom; Anita Tobar-Henríquez, University of Edinburgh, United Kingdom; Eva Murzyn, University of Edinburgh, United Kingdom

**Measurement and Promotion of Critical Online Reasoning Skills among Young Professionals**

Lisa Martin de los Santos, Johannes Gutenberg University of Mainz, Germany; Olga Zlatkin-Troitschanskaia, Johannes Gutenberg University of Mainz, Germany; Marie-Theres Nagel, Johannes Gutenberg University Mainz, Germany; Denis Federiak, Johannes Gutenberg University of Mainz, Germany

**Keep Some Distance: Seductive Details Are Only Harmful When Closely Related to the Learning Content**

Lisa Bender, University of Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany; Kim Brosemer, University of Education Freiburg, Germany; Alexander Eitel, University of Giessen, Germany

**How Social Cues Influence Students' Non-Cognitive Experiences In Online Feedback Processes**

Theresa Ruwe, Humboldt-Universität zu Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany

Session A: 11

Time: 12:15-13:45

Location: AUTH\_TE1

**SINGLE PAPER: MOTIVATION AND RESILIENCE DURING COVID-19****Chair**

Rolf Strietholt, IEA Hamburg, Germany

**Motivation and self-regulated learning during the COVID-19 pandemic - a systematic review**

Tamara Van Gog, Utrecht University, Netherlands; Ewa Miedzobrodzka, Utrecht University, Netherlands; Willeke Kitselaar, Leiden University, Netherlands; George Burchell, Vrije Universiteit Amsterdam, Netherlands; Julia Henrich, Leiden University, Netherlands; Chris Hoeboer, Amsterdam University Medical Centers Location AMC, Netherlands; Lydia Krabbendam, Vrije Universiteit Amsterdam, Netherlands; Milene Bonte, Maastricht University, Netherlands; Wouter van den Bos, University of Amsterdam, Netherlands; Peter Verkoeijen, Erasmus University Rotterdam, Netherlands

**Perception of academic success among face-to-face and distance students during the covid period**

Jean-Marc Meunier, Université Paris 8, France; Elisabetta Zibetti, Université Paris 8, France

**Perceptions of elementary school students regarding remote learning due to COVID-19**

Edit Tóth, SZTE Institute of Education, Hungary; Benő Csapó, University of Szeged, Hungary

**Understanding E-resilience in Education: Reviewing Public Policy Education during and after COVID-19**

Mindel van de Laar, Maastricht University, Netherlands; Julieta Marotta, UNU-MERIT / Maastricht University, Netherlands

Session A: 12

Time: 12:15-13:45

Location: AUTH\_T202

**SINGLE PAPER: VIRTUAL REALITY LEARNING ENVIRONMENTS****Chair**

Elaine Munthe, University of Stavanger, Norway

**What and how to learn with Virtual Reality Learning Environments?**

Felix Kapp, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Pia Spangenberg, Universität Potsdam, Germany

**Desktop virtual reality learning environments: Can cues reduce search time and support learning?**

Daniela Decker, Deutsches Institut für Erwachsenenbildung, Germany; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

**Primary teachers didactical design for students' learning in VR environments**

Emma Edstrand, Halmstad University, Sweden; Sylvana Sofkova Hashemi, University of Gothenburg, Sweden; Jeanette Sjöberg, Halmstad university, Sweden

**The use of virtual reality scenarios in science: Results of a design-based research experiment**

Bruno Poellhuber, University of Montreal, Canada; Sebastien Wall-Lacelle, University of Montreal, Canada; Christine Marquis, Cégep de Saint-Jérôme, Canada; Normand Roy, University of Montreal, Canada

Session A: 13

Time: 12:15-13:45

Location: AUTH\_T002

**SINGLE PAPER: CITIZENSHIP EDUCATION, SUSTAINABILITY AND POLITICAL ENGAGEMENT****Chair**

Robin Nagy, UNSW, Australia

**Civic education and social interactions at school as drivers of intended electoral participation**

Daniel Deimel, University of Duisburg-Essen, Germany; Katrin Hahn-Laudenberg, University of Leipzig, Germany; Johanna Fee Ziemer, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany

**Online political engagement of upper secondary students: Does media education have an impact?**

Tessa Consoli, University of Zurich, Institute of Education, Switzerland

**Evaluating Education for Sustainability: Survey creation based on a Systematic Literature Review**

Alessio Surian, Università degli Studi di Padova, Italy; Diego Posada, University of Padova, Italy; Diego Di Masi, University of Turin, Italy

**Sustainable citizenship in South America**

Antonia Larrain, Universidad Alberto Hurtado, Chile; Paulina Freire, Pontificia Universidad Católica de Chile, Chile; Ana Andaur, Pontificia Universidad Católica de Chile, Chile; María Teresa Rojas, Universidad Alberto Hurtado, Chile; Hernán Cofré, Pontificia Universidad Católica de Valparaíso, Chile; Claudia Vergara, Universidad Alberto Hurtado, Chile; Joaquín Grez Mansilla, Pontificia Universidad Católica de Chile, Chile

Session A: 14

Time: 12:15-13:45

Location: UOM\_A13

**SINGLE PAPER: RESEARCH-BASED TEACHER EDUCATION****Chair**

David Purpura, Purdue University, United States

**Research-based teacher education: preparing students to be research active teachers.**

Aimie Brennan, Marino Institute of Education, Ireland

**Legitimising undergraduate educational research methodology courses**

Athanasios Verdis, National and Kapodistrian University of Athens, Greece; Liza Dorli, National &amp; Kapodestrian University of Athens, Greece

**Pre-service teachers' beliefs shape their views of the value of scientific evidence for teaching**

Timo Reuter, Rheinland-Pfälzische Technische Universität Kaiserslautern - Landau, Germany; Miriam Leuchter, RPTU Landau, Germany

**Student teachers' research competences after writing a Master thesis in the Master of Teaching**

Stefanie De Jonge, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium; Evelien Opdecam, Ghent University, Belgium; Leen Haerens, Ghent University, Belgium

Session A: 15

Time: 12:15-13:45

Location: UOM\_A04

**SINGLE PAPER: CRITICAL THINKING IN DIFFERENT LEVELS OF EDUCATION****Chair**

Silke Vanparys, Ghent University, Belgium

**A multi-country comparison of lower secondary students' critical thinking under different curricula**

Samantha-Kaye Johnston, The University of Oxford, United Kingdom; Joshua McGrane, The University of Melbourne, Australia; Therese N. Hopfenbeck, The University of Melbourne, Australia; Mireia Vendrell Morancho, Universidad Complutense de Madrid, Spain

**The effects of reading and writing instruction on writing about historical significance**

Johan van Driel, University of Amsterdam, Netherlands; J.P. van Drie, University of Amsterdam, Netherlands; Carla Van Boxel, University of Amsterdam, Netherlands

**The filter bubble app: how can secondary school students become aware of algorithmic filtering?**

Tjitske de Groot, Utrecht University, Netherlands; Maria De Haan, Utrecht University, Netherlands

**Critical Thinking in Primary School – a Large Scale Design-Based Research Project**

Emilia Andersson-Bakken, Oslo Metropolitan University, Norway; Kirsti Marie Jegstad, Oslo Metropolitan University, Norway; Tuva Bjørkvold, Oslo Metropolitan University, Norway

Session A: 16

Time: 12:15-13:45

Location: UOM\_A10

**SINGLE PAPER: WELL-BEING IN GRADUATE STUDENTS****Chair**

Anki Strom, University of South-Eastern Norway, Norway

**Justice and metacognitive awareness as predictors of master students' wellbeing in supervision**

Anne Haarala-Muhonen, University of Helsinki, Finland; Liisa Myyry, University of Helsinki, Finland

**How Does Supervision Influence Doctoral Supervisor's Occupational Wellbeing?**

Lotta Tikkanen, University of Helsinki, Finland; Henrika Anttila, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland

**PhD holder transitions outside academia: The role of social support in (dis)engaging experiences**

Sara Rönkkönen, University of Helsinki, Finland; Viivi Virtanen, Häme University of Applied Sciences, Finland; Lynn McAlpine, University of Oxford / McGill University, Canada; Montserrat Castelló, Ramon Llull University, Spain; Kirsi Pyhältö, University of Helsinki, Finland; Marina García-Morante, Blanquerna, Universitat Ramon Llull, Spain

**Precarious careers: postdoctoral researchers and wellbeing at work**

Inge Van der weijden, Leiden University, Netherlands; Christine Teelken, VU University Amsterdam, Netherlands

Session A: 17

Time: 12:15-13:45

Location: AUTH\_T102

**SINGLE PAPER: ART EDUCATION****Chair**

Suzanne Hiller, Blue Swallow Farm Foundation, Center for Research and Instruction in the Natural World, United States

**Variation theory as teaching theory. In hope for a sustainable classroom concerning assessment**  
Pernilla Ahlstrand, Department of Pedagogical, Curricular and Professional Studies,, Sweden

**Performative arts training for Nursery teachers. Shared learning and impacts**

Anna Ciraso, Universitat Autònoma de Barcelona, Spain; Silvia Blanch, Universitat Autònoma de Barcelona, Spain; Gemma Paris, Universitat Autònoma de Barcelona, Spain

**Art and Design teachers' Personal Rules of Thumb while Designing Design Based Education Studios**

Migchiël Riemer van Diggelen, NHL University of Applied Sciences, Netherlands; Marjanne van Gameren, Open University of the Netherlands, Netherlands; Arnoud Evers, Open University of the Netherlands, Netherlands

Session A: 18

Time: 12:15-13:45

Location: UOM\_R05

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT, TEACHING QUALITY AND ACADEMIC ACHIEVEMENT****Chair**

Alexander Groeschner, Friedrich Schiller University Jena, Germany

**Effects of teacher professional development on student academic achievement: A meta-analysis**  
Natasha Dmoshinskaia, University of Twente, Netherlands; Adrie Visscher, Univ. of Twente, Netherlands; Marta Pellegrini, University of Cagliari, Italy

**The role of a data coach in supporting data use in school teams: voices of experts and practitioners**

Iris Decabooter, Hasselt University, Belgium; Ariadne Warmoes, Vrije Universiteit Brussel (VUB), Belgium; Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium; Els Consuegra, Vrije Universiteit Brussel, Belgium; Roos Van Gasse, University of Antwerp, Belgium

**Differentiating homework from the perspective of Swiss secondary teachers**

Christine Feiss, Universität Salzburg, Switzerland; Gerda Hagenauer, University of Salzburg, Austria; Sandra Moroni, University of teacher education Bern, Switzerland

**What competencies do teachers need to use students' perceptions of teaching quality?**

Lucas Silva, University of Groningen, Netherlands; Kim Schildkamp, University of Twente, Netherlands; Adrie Visscher, Univ. of Twente, Netherlands; Roel J. Bosker, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands

Session A: 19

Time: 12:15-13:45

Location: UOM\_R08

**SINGLE PAPER: SIMULATION-BASED LEARNING IN TEACHER EDUCATION****Chair**

Cris Castro, University of Birmingham, United Kingdom

**Pre-service teachers practicing the ways of scaffolding self-regulated learning with simulation**

Piia Naykki, University of Jyväskylä, Finland; Minna Silvennoinen, Jyväskylä University of Applied Sciences, Finland; Sirpa Laitinen-Väänänen, JAMK University of Applied Sciences, Finland; Saara Pyykkönen, University of Jyväskylä, Finland; Jenni Latva-aho, University of Jyväskylä, Finland; Heini Ikäheimo, JAMK University of Applied Sciences, Finland

**The differential effect of simulations on SEL among preservice, beginner, and experienced educators**

Ronen Kasperski, Gordon College of Education, Israel; Merav Hemi, Gordon Academic College, Israel

**Professional inquiry in teacher education: Positioning student teachers as co-developers**

Birgitte Lund Nielsen, VIA University College, Denmark; Anja Madsen Kvols, VIA University College, Denmark

**Analyzing the potential of interdisciplinary collaborative diagnosing in a school context**

Amadeus J. Pickal, University of Hildesheim, Germany; Katharina Engelmann, Universität Hildesheim, Germany; Birgit J. Neuhaus, LMU Munich, Germany; Raimund Girwidz, LMU Munich, Germany; Christof Wecker, Universität Hildesheim, Germany

Session A: 20

Time: 12:15-13:45

Location: UOM\_A05

**SINGLE PAPER: COLLABORATIVE KNOWLEDGE CONSTRUCTION WITH THE USE OF TECHNOLOGY****Chair**

Florentine Hicketier, Friedrich-Schiller-University Jena, Germany

**Socioemotional interaction and co-construction of knowledge in online synchronous teacher education**

Auli Lehtinen, Department of Teacher Education, University of Jyväskylä, Finland; Piia Naykki, University of Jyväskylä, Finland; Emma Kostiaainen, Department of Teacher Education, University of Jyväskylä, Finland

**Signs of self-organization in technology-mediated knowledge co-creation**

Niina Halonen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland

**Fostering computer-supported collaboration knowledge and interaction through scripting and awareness**

Isis Tunngigkeit, Ruhr University Bochum, Germany; Sebastian Strauß, Ruhr-University Bochum, Germany; Julia Eberle, Ruhr-Universität Bochum, Germany; Arlind Avdullahu, Ruhr-University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany

**Supporting student teachers' reflection through assessment: the case of reflective podcasts**

Laura Ketonen, University of Jyväskylä, Finland; Juuso Henrik Nieminen, The University of Hong Kong, Finland

Session A: 21

Time: 12:15-13:45

Location: UOM\_R09

**SINGLE PAPER: RESEARCHERS' EDUCATION, PERCEIVED COMPETENCE AND COMMUNICATION WITH PRACTITIONERS****Chair**

Angeliki Lithoxidou, University of Western Macedonia, Greece

**Validation of a Questionnaire for Measuring Perceived Research Competence**

Sarah Marrs, Virginia Commonwealth University, United States; Carla Quesada-Pallarès, Universitat Autònoma de Barcelona, Spain; Korinthia D. Nicolai, School of Education, Virginia Commonwealth University, United States; Elizabeth A. Severson-Irby, School of Education, Virginia Commonwealth University, United States; Jose Reinaldo Martinez-Fernandez, Universitat Autònoma de Barcelona, Spain

**Development and Evaluation of a Science Communication Training for Master Students in STEM**

Julian Fick, TU Braunschweig, Germany; Noemi Kumpmann, University of Muenster, Germany; Friederike Hendriks, TU Braunschweig, Germany

**PhD supervisors' and supervisees' perceptions on supervisory support**

Henrika Anttila, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Lotta Tikkanen, University of Helsinki, Finland

**From findings to impact: Implications of current research for researcher-practitioner communication**

Paul Howard-Jones, University of Bristol, United Kingdom; Bethany Woollacott, Loughborough University, United Kingdom; Samuel Sims, University College London, United Kingdom; Korbian Moeller, Loughborough University, United Kingdom; Hugo Lortie-Forgues, Loughborough University, United Kingdom; Matthew Inglis, Loughborough University, United Kingdom; Tim Jay, Loughborough University, United Kingdom; Camilla Gilmore, Loughborough University, United Kingdom; Colin Foster, Loughborough University, United Kingdom

**How does interdisciplinary doctoral experience matter?**

Auli Toom, University of Helsinki, Finland; Lotta Tikkanen, University of Helsinki, Finland; Henrika Anttila, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland

Session A: 22

Time: 12:15-13:45

Location: UOM\_R04

## POSTER PRESENTATION: WRITING AND LITERACY DEVELOPMENT

## Chair

Torhild Høydalsvik, Volda University College, Norway

**Teaching writing in primary schools: the impact of curricula and orthographies. A systematic review**

GIULIA VETTORI, University of Florence, Italy; Julie Dockrell, Institute of Education, United Kingdom

**A genre-based interconnected reading and writing instruction: effects on writing skills**

Moniek Vis, Rijksuniversiteit Groningen, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands; Kees de Gloppe, University of Groningen, Netherlands; Jacqueline van Kruiningen, Rotterdam University of Applied Sciences, Netherlands

**Bilingual adults learning written words in English: orthographic influences of the first language.**

Alexia Antzaka, Universidad Internacional de la Rioja-UNIR, Spain; Tianjiao Li, University of Bangor, United Kingdom; Mina Jevtović, Basque Center on Cognition, Brain and Language-University of the Basque Country, Spain; Clara Martin, Basque Center on Cognition, Brain, and Language- Basque Foundation for Science (Ikerbasque), Spain

**Executive Functions in School Achievement: The Mediational Role of Learning-Related Behavior**

carlotta rivella, Unige, Disfor, Italy; Paola Viterbori, UNIGE, Disfor, Italy

**Assessing writing motivation: A systematic review of K-5 students' self-reports**

Aline Alves-Wold, University of Stavanger, Norway; Bente Walgermo, University of Stavanger, Norway; Erin McTigue, University of Stavanger, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway

**Moroccan EFL University Instructors' Perceptions and Self-Reported Practices on Teaching Writing**

Abderrahim Mamad, University of Szeged, Doctoral School of Education, Hungary; Tibor Vigh, University of Szeged, Hungary

Session A: 23

Time: 12:15-13:45

Location: UOM\_R02

## POSTER PRESENTATION: COGNITIVE DEVELOPMENT IN MATHEMATICS

## Chair

Ka Lok Cheng, The University of Hong Kong, Hong Kong

**Development of Creative Thinking via Fractions and Rhythm**

Libby Azaryahu, The Academic College Levinsky Wingate, Israel; Orit Broza, Levinsky College of Education, Israel; Shai Cohen, Bar-Ilan University, Israel; Sara Hershkovitz, Levinsky College of Education, Israel; Esther Adi-Japha, Bar-Ilan University, Israel

**Children's mathematical anxiety in primary school: The role of sex, age, and spatial ability**

Wenke Möhring, University of Basel, Switzerland; Leonie Moll, University of Basel, Switzerland; Marta Szewczyk, The John Paul II Catholic University of Lublin, Poland; Magdalena Szubielska, The John Paul II Catholic University of Lublin, Poland

**Eye-tracking for investigating students' local vs. global view of data**

Saskia Schreiter, University of Education Heidelberg, Germany; Markus Vogel, University of Education Heidelberg, Germany

**Individual strategies when comparing data sets with boxplots and their corresponding answer patterns**

Martin Abt, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany; Frank Reinhold, University of Education Freiburg, Germany

**Evidence that retrieval of multiplication facts requires inhibitory control**

Joanne Eaves, Nottingham University, United Kingdom; Camilla Gilmore, Loughborough University, United Kingdom; Lucy Cragg, University of Nottingham, United Kingdom

**Investigation of the Number Sense and Cognitive Flexibility Levels of Preschool Children Aged 5-6**

Gürsu Asik, Bahcesehir University, Turkiye; Asli Gokdag, Ministry of Education - Turkey, Turkiye



Session A: 24

Time: 12:15-13:45

Location: UOM\_R03

## POSTER PRESENTATION: CRITICAL THINKING AND PROBLEM SOLVING

## Chair

Christopher Neil Prilop, Aarhus University, Denmark

**Metacognition, creativity, and critical thinking reflect in PBL-based teaching performances**

Rotem Maor, David Yellin College of Education, Israel; Nurit Paz-Baruch, Bar Ilan University, Israel; Niv Grunspan, Bar Ilan University, Israel; Alex Milman, Bar-Ilan University, Israel; Zemira Mevarech, Bar-Ilan University, Israel; Rotem Levi, Bar Ilan University, Israel; Sarit Shlomo, Bar Ilan University, Israel; Michal Zion, Bar-Ilan University, Israel

**Personal Data Literacy Empowerment: A theoretical framework**

Eleni Kyza, Cyprus University of Technology, Cyprus; Andria Agesilaou, Cyprus University of Technology, Cyprus

**Effects and experiences from playing a game against disinformation in different classroom settings**

Thomas Nygren, Uppsala University, Sweden; Carl-Anton Werner Axelsson, Uppsala University, Sweden; Jon Roozenbeek, University of Cambridge, United Kingdom; Sander van der Linden, University of Cambridge, United Kingdom

**Using reflection to analyse student insights of critical & creative thinking skill development**

Kelly Benati, Monash University, Australia; Jacqueline O'Toole, Monash University, Australia; Francesco Interrigi, Monash University, Australia; paul murphy, Monash University, Australia

**Learning of working life competencies through collaborative problem-solving in higher education**

Niina Impiö, University of Oulu, Finland; Signe Siklander, University of Oulu, Finland; Bhavna Rawat, University of Oulu, Finland

**Do students in different courses of study think the same way in complex problem solving?**

Gyöngyvér Molnár, University of Szeged, MTA-SZTE Digital Learning Technologies Research Group, Hungary; Hao Wu, University of Saint Joseph, Macao

Session A: 25

Time: 12:15-13:45

Location: UOM\_R01

## POSTER PRESENTATION: ACHIEVEMENT AND COGNITIVE SKILLS AND PROCESSES

## Chair

Catherine Gabelica, IESEG School of Management, France

**Social, Dimensional, and Temporal Comparison Effects on Students' Self-Concepts: A Meta-Analysis**

Fabian Wolff, Universität of Koblenz, Germany; Jens Möller, Kiel University, Germany

**Academic Buoyancy and Coping: Are Buoyant Students Using More Effective Coping Strategies?**

Tahrim Hussain, Liverpool John Moores University, United Kingdom; Dave Putwain, Liverpool John Moores University, United Kingdom; Martin Daumiller, University of Augsburg, Germany; Reinhard Pekrun, University of Essex, United Kingdom

**Effects of Executive Function Training in Children and Adolescents: a Meta-Analysis**

Sophie McMullin, Université du Québec à Montréal (UQAM), Canada; Steve Masson, Université du Québec à Montréal (UQAM), Canada

**A preliminary study of the brain activation during science problem solving using MEG method**

Fang-Ying Yang, National Taiwan Normal University, Taiwan

**The Impact of Executive Functions on Physics Learning in Secondary School Students.**

Konstantinos G Tsigaridis, University of Cambridge, Greece; Rui WANG, University of Cambridge, China; Jiayin Zheng, University of Cambridge, UK, United Kingdom; Michelle Ellefson, University of Cambridge, United Kingdom

**Biology Education Levels and General Cognitive Ability Influence Conceptual Learning of Biology**

Rui WANG, University of Cambridge, China; Konstantinos G Tsigaridis, University of Cambridge, Greece; Aidan Feeney, Queen's University Belfast, United Kingdom; Michelle Ellefson, University of Cambridge, United Kingdom

Session A: 26

Time: 12:15-13:45

Location: UOM\_GYM

**ROUNDTABLE: TEACHER PROFESSIONAL DEVELOPMENT****Chair**

Sorja Hahn, Darmstadt University of Applied Sciences, Germany

**Longitudinal changes in teachers' attitudes towards innovations in implementation processes**

Mareike Ehler, University of Muenster, Germany; Elmar Souvignier, University of Muenster, Germany

**Experiential learning as a means for personal development and wellbeing in Slovak teachers**

Lenka Janik Blaskova, University of Exeter, United Kingdom

**Mapping the quality of teacher learning during lesson study: a digital ethnographic perspective**

Katelijne Barbier, University of Antwerp, Belgium; Elke Struyf, University of Antwerp, Belgium; Ellen Vandervieren, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium

**'Stories to live by' in early career teachers' professional identity development**

Gonny Schellings, Eindhoven University of Technology, Netherlands; Douwe Beijaard, Eindhoven University of Technology, Netherlands

Session A: 27

Time: 12:15-13:45

Location: UOM\_A07

**WORKSHOP: INSTRUMENTAL ENRICHMENT THINKING SKILLS PROGRAM****Instrumental Enrichment thinking skills program**

Alex Kozulin, Achva College and Feuerstein Institute, Israel

Session A: 28

Time: 12:15-13:45

Location: UOM\_A11

**ICT DEMONSTRATION: CALIBRATION OF AN ACADEMIC ANALYTICS TOOL FOR AT-RISK STUDENTS POLICY IN HIGHER EDUCATION****Calibration of an Academic Analytics Tool for At-Risk Students Policy in Higher Education**

David Corradi, University of Antwerp, Belgium

Session B: 1

Time: 15:00-16:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: SYNTHESIZING COGNITIVE LOAD AND SELF-REGULATED LEARNING: FOUR YEARS OF EFG MRE RESEARCH****Chair**

Anique de Bruin, Maastricht University, Netherlands

**Organiser**

Julian Roelle, Ruhr University Bochum, Germany

**Discussant**

Matthias Nückles, University of Freiburg, Germany

**The interplay between Cognitive Load, learners' resources and self-regulation**

Tina Seufert, Ulm University, Germany; Verena Hamm, Ulm University, Germany

**Focusing Learners on Comprehension- or Performance-Based Cues in Fostering Monitoring Accuracy**

Julia Waldeyer, Ruhr-University Bochum, Germany; Tino Endres, University of Freiburg, Germany; Martine Baars, Erasmus University Rotterdam, Netherlands; Julian Roelle, Ruhr University Bochum, Germany; Alexander Renkl, University of Freiburg, Germany

**Self-regulating Effort towards Desirable Difficulties: A Conceptual Framework**

Anique de Bruin, Maastricht University, Netherlands; Felicitas Biber, Maastricht University, Netherlands; Luotong Hui, Imperial College London, United Kingdom; Erdem Onan, Maastricht University, Netherlands; Louise David, Maastricht University, Netherlands; Wisnu Wiradhany, Bina Nusantara University, Indonesia

**Opting out leveraging strategic effort regulation**

Yael Sidi, the Open University of Israel, Israel; Rakefet Ackerman, Technion - Israel Institute of Technology, Israel

**ANNOTATIONS:**

EFG INVITED SYMPOSIUM

Session B: 2

Time: 15:00-16:30

Location: UOM\_CH

**INVITED SYMPOSIUM: SOCIAL PRESENCE AND TELEPRESENCE IN ONLINE SOCIAL LEARNING****Chair**

Emmy Vrieling, Open University of the Netherlands, Netherlands

**Organisers**

Karel Kreijns, Open University of the Netherlands, Netherlands; Derya Orhan Göksün, Adiyaman University, Türkiye; Kamakshi Rajagopal, AE - Adapt &amp; Enable, Belgium; Maartje Peters, Open University of the Netherlands, Netherlands; Joshua Weidlich, German Institute for International Educational Research (DIPF), Germany

**Discussant**

Armin Weinberger, Saarland University, Germany

**Human interaction**

Karel Kreijns, Open University of the Netherlands, Netherlands

**Data driven regulation**

Derya Orhan Göksün, Adiyaman University, Türkiye

**Supporting technology**

Kamakshi Rajagopal, AE - Adapt &amp; Enable, Belgium; Maartje Peters, Open University of the Netherlands, Netherlands

**Modes of communication**

Joshua Weidlich, German Institute for International Educational Research (DIPF), Germany

ANNOTATIONS:  
EFG INVITED SYMPOSIUM

Session B: 3

Time: 15:00-16:30

Location: AUTH\_T002

**SYMPOSIUM: APPLYING THE THEORY OF PLANNED BEHAVIOR IN INCLUSIVE EDUCATION****Chair**

Olli-Pekka Malinen, University of Helsinki, Finland

**Organiser**

Olli-Pekka Malinen, University of Helsinki, Finland

**Discussant**

Tuomo Virtanen, University of Jyväskylä, Finland

**Differentiated teacher practices in secondary education: Planned or improvised behavior?**

Elisa Kupers, University of Groningen, Netherlands; Anke de Boer, University of Groningen, Netherlands; Lisette de Jonge-Hoekstra, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands

**Sources of teacher self-efficacy in inclusive education within the framework of the TPB**

Akie Yada, University of Jyväskylä, Finland; Olli-Pekka Malinen, University of Helsinki, Finland; İpek Gülsün, University of Jyväskylä, Finland; Hannu Savolainen, University of Eastern Finland, Finland

**Finnish teachers' intentions and inclusive behaviours via the theory of planned behaviour**

İpek Gülsün, University of Jyväskylä, Finland; Hannu Savolainen, University of Eastern Finland, Finland; Olli-Pekka Malinen, University of Helsinki, Finland; Akie Yada, University of Jyväskylä, Finland

**Prerequisites for primary school teachers' practices in the inclusive classroom**

Marwin Felix Loeper, Paderborn University, Germany; Gamze Görel, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

Session B: 4

Time: 15:00-16:30

Location: UOM\_CR

**SYMPOSIUM: DESIGNING EFFECTIVE DIGITAL LEARNING ENVIRONMENTS – REVIEWING THE EVIDENCE****Chair**

Ingo Kollar, University of Augsburg, Germany

**Organisers**

Andreas Gegenfurtner, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

**Discussant**

James Slotta, OISE, University of Toronto, Canada

**Assessing Web-based Inquiry Learning Environments Using Knowledge Integration Pedagogy**

Sarah Bichler, Ludwig-Maximilians-Universität (LMU), Germany; Marcia Linn, University of California-Berkeley, United States; Libby Gerard, University of Berkeley, United States

**Six evidence-informed tips on how to optimize learning from instructional videos**

Vincent Hoogerheide, Utrecht University, Netherlands; Stoo Sepp, University of New England, Australia, Australia

**Designing Effective Immersive Virtual Learning Environments**

Guido Makransky, University of Copenhagen, Denmark; Gustav Petersen, University of Copenhagen, Denmark

**Effectiveness of Flipped Classrooms**

Marlene Wagner, University for Continuing Education Krems (Danube University Krems), Austria; Andreas Gegenfurtner, University of Augsburg, Germany; Detlef Urhahne, University of Passau, Germany

Session B: 5

Time: 15:00-16:30

Location: UOM\_A02

**SYMPOSIUM: NEW INSIGHTS ON THE RELATION BETWEEN CHILDREN'S MATHEMATICS ATTITUDES AND THEIR PERFORMANCE****Chair**

Jo Van Hoof, University of Turku, Finland

**Organisers**

Jo Van Hoof, University of Turku, Finland; Hilma Halme, University of Turku, Department of Teacher Education, Finland

**Discussant**

Reinhard Pekrun, University of Essex, United Kingdom

**Doing Well and Thinking Positively: The Unbalanced Relation Between Math Attitudes and Achievement**

Michael Slipenky, Georgetown University, United States; Tsz Tan Lau, The University of Western Ontario, Canada; Ian Lyons, Georgetown University, United States; Daniel Ansari, University of Western Ontario, Canada

**Developmental relations between mathematics anxiety, number processing and arithmetic fluency**

Johan Korhonen, Åbo Akademi University, Finland; Anna Widlund, Åbo Akademi University, Finland

**The association between parents' math anxiety and children's math anxiety and achievement**

Elien Bellon, KU Leuven, Belgium; Kiran Vanbinst, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium; Ann Dowker, University of Oxford, United Kingdom

**Trait and state mathematics anxiety relate to performance across tasks in primary school**

Hilma Halme, University of Turku, Department of Teacher Education, Finland; Kelly Trezise, University of Chicago, United States; Minna Hannula-Sormunen, University of Turku, Finland; Jo Van Hoof, University of Turku, Finland; Jake McMullen, University of Turku, Finland

Session B: 6

Time: 15:00-16:30

Location: AUTH\_T102

**SYMPOSIUM: KNOWLEDGE ABOUT LANGUAGE AND THE TEACHING OF L1 WRITING: INTERNATIONAL PERSPECTIVES****Chair**

Debra Myhill, University of Exeter, United Kingdom

**Organiser**

Annabel Watson, University of Exeter, United Kingdom

**Discussant**

Xavier Fontich, Autonomous University of Barcelona, Spain

**Young pupils' knowledge about language expressed through writing and in dialogues**

Mari Nygård, NTNU, Norway; Randi Solheim, Faculty of Social and Educational Sciences, Norway

**What transfers and how? Examining how contextualised grammar teaching influences students' writing.**

Annabel Watson, University of Exeter, United Kingdom

**Metalinguistic modelling in writing instruction: bridging learning about text and individual writing**

Ruth Newman, University of Exeter, United Kingdom

**L1 student teachers' processing of different linguistic arguments in grammatical discussions**

Jimmy van Rijt, Tilburg University, Netherlands

Session B: 7

Time: 15:00-16:30

Location: UOM\_A13

**SYMPOSIUM: POWERFUL LEARNING ENVIRONMENTS FOR 4-7-YEAR-OLDS: INTERACTIVE PICTURE BOOK READING****Chair**

Joke Torbeyns, KU Leuven, Belgium

**Organisers**

Joke Torbeyns, KU Leuven, Belgium; Hilde Van Keer, Ghent University, Belgium

**Discussant**

Maria T. Sikkema-de Jong, Leiden University, Netherlands

**Enhancing problem-solving skills in preschool through interactive picture book reading**

Joris Van Elsen, University of Antwerp, Belgium; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Sven De Maeyer, Antwerp University, Belgium

**The Effects of a Quantitative Mathematical Language Intervention on Number Line Skills and SFON**

David Purpura, Purdue University, United States; Connor D. O'Rear, Purdue University, United States; Alexa Ellis, Purdue University, United States; Lauren Westerberg, Purdue University, United States; Mackenna Vander Tuin, The University of Texas, United States; Patrick Ehrman, Purdue University, United States; Yemimah A. King, Spelman College, United States

**What's in a word: impact of interactive book reading on 1st-graders' expressive target vocabulary**

Silke Vanparys, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**The effect of interactive picture book reading on language competence in early childhood education**

Chiel van der Veen, Vrije Universiteit Amsterdam, Netherlands; Shariisse van Driel, Vrije Universiteit Amsterdam, Netherlands; Femke van der Wilt, VU Amsterdam, Netherlands

Session B: 8

Time: 15:00-16:30

Location: AUTH\_TE2

**SYMPOSIUM: STUDYING PROFESSIONAL LEARNING COMMUNITIES OF PRE-SERVICE TEACHERS, PRINCIPALS & UNIVERSITY FACULTY****Chair**

Peter Theurl, University of Teacher Education Vorarlberg, Austria

**Organiser**

Loucas Louca, European University Cyprus, Cyprus

**Discussant**

SOFIA AVGITIDOU, Aristotle University of Thessaloniki, Greece

**An Investigation of the Introduction Faculty Professional Learning Communities in Higher Education**

Loucas Louca, European University Cyprus, Cyprus; Theopisti Skoulia, European University - Cyprus, Cyprus; Marios Vryonides, European University - Cyprus, Cyprus

**Professional learning communities extended as a method for leadership development**

Katja Kansteiner, Pädagogische Hochschule Weingarten, Germany

**Professional Learning Communities of Pre-Service Teachers in Internship**

Peter Theurl, University of Teacher Education Vorarlberg, Austria; Eva Frick, University of Education Vorarlberg, Austria; Elvira Barrios, Universidad de Málaga, Spain; Carmen Sanchidrián, Universidad de Malaga, Spain

**The importance of structure and action plans in a professional learning community for principals**

Anne Berit Emstad, Norwegian University of Science and Technology (NTNU), Norway; Bård Knutsen, NTNU - Norwegian University of Science and Technology, Norway; Morten Krogstad Strand, Kattem skole, Trondheim, Norway

Session B: 9

Time: 15:00-16:30

Location: AUTH\_DC2

**SYMPOSIUM: EFFECTS OF THE COVID-19 PANDEMIC ON STUDENT ACHIEVEMENT****Chair**

Natalie Foerster, University of Münster, Germany

**Organiser**

Natalie Foerster, University of Münster, Germany

**Discussant**

Andreas Frey, Goethe-Universität Frankfurt, Germany

**Effects of the COVID-19 Pandemic on Reading Performance of Second Grade Children in Germany**

Natalie Foerster, University of Münster, Germany; Boris Forthmann, University of Münster, Germany; Mitja D. Back, University of Münster, Germany; Elmar Souvignier, University of Muenster, Germany

**Third Graders Mathematic Growth amid the Second Corona School Year in Austria**

Christoph Helm, Johannes Kepler University Linz, Austria; Christoph Weber, University of Education Upper Austria, Austria; David Kemethofer, University of Education Upper Austria, Austria

**Effects of the Covid-19 pandemic on the school performance of Swiss students**

Valentin Unger, St.Gallen University of Teacher Education, Switzerland; Fabian Grünig, St.Gallen University of Teacher Education, Switzerland; Michael Kickmeier-Rust, University of Teacher Education, Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Nicolas Hübner, University of Tübingen, Germany; Christoph Helm, Johannes Kepler University Linz, Austria

**Students' learning loss over the course of the COVID-19 pandemic – A Meta-Analysis**

Andrea Wisenöcker, Johannes Kepler University Linz, Austria; Christoph Helm, Johannes Kepler University Linz, Austria; Cornelia S. Große, Johannes Kepler University Linz, Austria, Austria

Session B: 10

Time: 15:00-16:30

Location: AUTH\_DC1

**SINGLE PAPER: LEARNING AND DEVELOPMENTAL DIFFICULTIES: SCREENING AND ASSESSMENT****Chair**

Honghong Bai, Tsinghua University, China

**Through the student's eyes: Perspective taking in student problem behavior**

Hinke Endedijk, Leiden University, Netherlands; Tim Mainhard, Leiden University, Netherlands

**Arithmetic development from Grade 1 to 3 – The role of domain-specific and domain-general predictors**

Riikka Mononen, University of Oulu, Finland; Johan Korhonen, Åbo Akademi University, Finland; Markku Niemivirta, University of Eastern Finland, Finland

**Diagnostic assessment of special educational needs in the field of learning disorders**

Ann-Kathrin Hennes, University of Cologne, Germany; Lisa Dortants, Universität zu Köln/ University of Cologne, Germany; Julie Philippek, Universität zu Köln/ University of Cologne, Germany; Alfred Schabmann, University of Cologne, Germany; Barbara Schmidt, University of Cologne, Germany

**A meta-analysis of teacher screening and progress monitoring assessments: Preliminary findings**

Serap Keles, Knowledge Centre for Education, University of Stavanger, Norway; Dieuwert ten Braak, University of Stavanger, Norway; Åste Marie Mjelve Hagen, University of Oslo, Norway; Monica Melby-Lervåg, University of Oslo, Norway

Session B: 11

Time: 15:00-16:30

Location: UOM\_A04

**SINGLE PAPER: ACHIEVEMENT IN MATHEMATICS: MOTIVATIONAL BELIEFS, EMOTIONS AND EFFORT****Chair**

Despoina Georgiou, Utrecht University, Netherlands

**Beliefs and mathematics achievements : association with attitudes and motivation**

Achmad Hidayatullah, University of Szeged, Doctoral School of Education, Indonesia; Csaba Csikos, University of Szeged, MTA-SZTE Metacognition Research Group, Hungary

**Profiles of control, value and achievement emotions in primary school mathematics lessons.**

Dave Putwain, Liverpool John Moores University, United Kingdom; Wendy Symes, University of Potsdam, Germany; Stephanie Lichtenfeld, Universität Hamburg, Germany

**State-Trait Analyses of STEM Students' Math-Related Motivations In Low-Stakes Achievement Settings**

Daria Katharina Benden, University of Bonn, Germany; Fani Lauermann, University of Bonn, Germany

**The Role of Effort in Students' Mathematics Development: Investigating its Predictors and Outcomes**

Robin Nagy, UNSW, Australia; Andrew Martin, University of New South Wales, Australia; Rebecca Collie, University of New South Wales, Australia

Session B: 12

Time: 15:00-16:30

Location: AUTH\_TE1

**SINGLE PAPER: EDUCATIONAL EFFECTIVENESS AND SCHOOL IMPROVEMENT****Chair**

Inmaculada Fajardo, Department of Developmental and Educational Psychology/Reading Research Unit, Spain

**School improvement capacity in average-performing schools**

Beat Rechsteiner, University of Zurich, Switzerland; Lisa Maria Schaefer, Johannes Gutenberg University of Mainz, Germany; Claudia Marusic-Würscher, Zurich University of Teacher Education, Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Andrea Wullschlegel, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland

**A Model of Complex Data Analysis for Improving Student Achievements**

Pavels Pestovs, University of Latvia, Latvia; Dace Namsone, University of Latvia, Latvia

**Research as an Institutional Practice: Problems and Suggested Improvements**

Mark White, University of Oslo, Norway

**Navigating the invisible boundary, factors that support the transition to secondary school.**

Emma Cunningham, University of Waikato, New Zealand

Session B: 13

Time: 15:00-16:30

Location: UOM\_A03

**SINGLE PAPER: VIDEO-BASED LEARNING AND TEACHER PROFESSIONAL VISION****Chair**

Jean-Luc Patry, Paris-Lodron University Salzburg, Austria

**Signaling, self-explanations, and situational interest in preservice professional vision training**

Meg Farrell, Technische Universität München, Germany; Monika Martin, University of Education Freiburg, Germany; Ricardo Böheim, Technical University of Munich, Germany; Alexander Renkl, University of Freiburg, Germany; Werner Rieß, PH Freiburg, Germany; Karen Könings, Maastricht University, Netherlands; Jeroen Van Merriënboer, Maastricht University, Netherlands; Tina Seidel, Technische Universität München, Germany

**Video-based intervention to foster pre-service teachers' professional vision of feedback**

Anna Holstein, Leuphana University Lüneburg, Germany; Christopher Neil Prilop, Aarhus University, Denmark; Kira Elena Weber, Kiel University, Christian Albrecht Universität zu Kiel, Leibniz Institute for Science and Mathematics Education, Germany; Marc Kleinknecht, Leuphana University Lüneburg, Germany

**Potentials of different perspectives of classroom videos for fostering teachers' professional vision**

Sara Mahler, PH FHNW Switzerland, Switzerland; Kerstin Baeuerlein, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Corinne Wyss, FHNW School of Education, Switzerland

**Which explainer video is "the one to choose"? Insights into how teachers select explainer videos**

Felicitas Licht, University of Giessen, Germany; Marie-Christin Krebs, University of Giessen, Germany; Alexander Eitel, University of Giessen, Germany

Session B: 14

Time: 15:00-16:30

Location: UOM\_R08

**SINGLE PAPER: DIFFERENT ASPECTS OF INCLUSIVE EDUCATION****Chair**

Kim van Broekhoven, Erasmus University Rotterdam, Netherlands

**The effect on achievement of an orientation track for first-year students: a longitudinal study**

Dorien Jansen, Hogeschool PXL, Belgium; Philippe Haldermans, Hogeschool PXL, Belgium; Heidi Croes, Hogeschool PXL, Belgium

**Promoting Access through Affordability: A Systematic Review of Open Educational Resources**

Amber Mullens, University of Central Florida, United States; BOBBY HOFFMAN, University of Central Florida, United States

**How do students with the diagnosis autism specter disorder master higher education**

Liv Håberg, Volda University College, Norway; Kari Rygg, Inviro, Norway

**Examination experiences of university students with disabilities before and during the pandemic**

Margaret Bearman, Deakin University, Australia; Joanna Tai, Deakin University, Australia; Paige Mahoney, Deakin University, Australia; Rola Ajjawi, Deakin University, Australia; Jo Dargusch, Central Queensland University, Australia; Mary Dracup, Deakin University, Australia; Lois Harris, Central Queensland University, Australia

Session B: 15

Time: 15:00-16:30

Location: AUTH\_DC3

**SINGLE PAPER: FOSTERING SELF-REGULATED LEARNING: INDIVIDUAL AND INSTRUCTIONAL FACTORS****Chair**

Jose Hanham, Western Sydney University, Australia

**Examining the psychometric power of the SRL Profile and Self-diagnostic scale**

Allyson Hadwin, University of Victoria, Canada; Ramin Rostampour, University of Victoria, Canada; Michelle Bahena-Olivares, University of Victoria, Canada; Phillip Winne, Simon Fraser University, Canada

**Fostering Self-Regulated Learning with a Learning Diary: Success Factors**

Thomas Martens, Medical School Hamburg, Germany; Diana Pistoll, Medical School Hamburg, Germany

**The impact of SRL instruction in task understanding, academic challenges, and performance**

Michelle Bahena, University of Victoria, Canada; Allyson Hadwin, University of Victoria, Canada; Ramin Rostampour, University of Victoria, Canada; Muqing Nie, University of Victoria, Canada

**Self-regulated learning of teachers and its connections to the competencies of their students**

Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany; Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Carmen Nadja Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland

Session B: 16

Time: 15:00-16:30

Location: AUTH\_T202

**SINGLE PAPER: ASSESSMENT METHODS IN VOCATIONAL EDUCATION****Chair**

Cheuk Ming Ho, The Education University of Hong Kong, Hong Kong

**Entrepreneurship Competence in VET: results from Italy**

Daniele Morselli, Free University of Bolzano, Italy

**Exploring VET student, workplace and school tutor viewing and evaluation of work practice**

Sietse Brands, University of Twente, Netherlands; Bas Kollöffel, University of Twente, Netherlands; Elwin Savelsbergh, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Maaïke Endedijk, University of Twente, Netherlands

**Digital measurement of hands-on skills? Validation of a computer-based automotive repair test**

Stefan Hartmann, Ludwigsburg University of Education, Germany; Emre Güzel, Ludwigsburg University of Education, Germany; Tobias Gschwendtner, Ludwigsburg University of Education, Germany

**Same, but different? Digital Transformation of Vocational Schools in Germany and Switzerland**

Andreas Harder, University of Konstanz, Germany; Stephan Schumann, University of Constance, Germany; Serge Imboden, HES-SO Valais-Wallis, Switzerland

Session B: 17

Time: 15:00-16:30

Location: UOM\_R09

**SINGLE PAPER: STUDENT SELF-BELIEFS AND SELF-REGULATED LEARNING****Chair**

Dorit Bosse, University of Kassel, Institute of Educational Science, Germany

**How do Variables Relate to K12-Students Self-Beliefs? A Second-Order Meta-Analysis**

Thorben Jansen, Leibniz-Institut für die Pädagogik der Naturwissenschaften und Mathematik, Germany; Jennifer Meyer, Leibniz Institute for Science and Mathematics Education (IPN), Germany; John Hattie, The University of Melbourne, Australia; Jens Möller, Institute of Psychology of Learning and Instruction, Kiel University, Germany

**Influencing procrastination – results from a course**

Henna Asikainen, University of Helsinki, Finland; Telle Hailikari, Häme University of Applied Sciences, Finland; Nina Katajavuori, University of Helsinki, Finland

**“I have a sense of accomplishment”: An Investigation into Chinese International Student Engagement**

Dangeni Dangeni, Newcastle University, United Kingdom

Session B: 18

Time: 15:00-16:30

Location: UOM\_R02

**POSTER PRESENTATION: MULTIMEDIA LEARNING****Chair**

Adriaan Vervoort, UHasselt, Belgium

**Can Video Testimonials Augment the Refutation Effect in Climate Change Misconceptions?**

Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Marcel 't Lam, Open Universiteit, Netherlands; Dorothy Duchatelet, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Evidence-based design guidelines for multimedia testing**

Andrienne Kerckhoffs, Open Universiteit, Department of Online Learning and Instruction, Netherlands; José Janssen, Open University of the Netherlands, Netherlands; Ron Pat-El, Open University, Netherlands; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Investigating Content-Relevant Background Color as Retrieval Cue in Multimedia Learning**

Felix Krieglstein, Chemnitz University of Technology, Germany; Felicia Meusel, Chemnitz University of Technology, Germany; Nadine Scheller, Chemnitz University of Technology, Germany

Session B: 19

Time: 15:00-16:30

Location: UOM\_R03

**POSTER PRESENTATION: GOAL ORIENTATIONS IN MOTIVATION AND EMOTION RESEARCH****Chair**

Mikko Tiilikainen, University of Turku, Finland

**The Role of Emotions in Goal Revision and Performance: A Computational Modeling Approach**

Wy Ming Lin, University of Tübingen, Germany; Lily FitzGibbon, University of Stirling, United Kingdom; Maria Theobald, DIPF | Leibniz Institute for Research and Information in Education, Germany; Jasmin Breitwieser, DIPF | Leibniz Institute for Research and Information in Education, Germany; Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany; Kou Murayama, University of Tübingen, Germany; Michiko Sakaki, University of Tübingen, Germany

**Effects of Performance Goals and Self-Efficacy on Cheating in an Academic Test**

Melissa Özsoy, University of Augsburg, Germany; Tanja Fritz, Augsburg University, Germany; Martin Daumiller, Augsburg University, Germany

**Intentions to study secondary science: A latent profile analysis from a multiple goals perspective**

Nathan Berger, Western Sydney University, Australia; Erin Mackenzie, Western Sydney University, Australia; Kathryn Holmes, Western Sydney University, Australia; Jennifer Archer, The University of Newcastle, Australia

**Motivation During the PhD: Development of Achievement Goals Depending on Contextual Factors**

Raven Rinas, Augsburg University, Germany; Martin Daumiller, University of Augsburg, Germany; Stefan Janke, University of Mannheim, Germany; Oliver Dickhaeuser, University of Mannheim, Germany; Markus Dresel, University of Augsburg, Germany

**Thought patterns of students with a positive or negative self-evaluation bias of competence**

Anne-Laure de Place, Université Paris 8 - Vincennes - Saint Denis, France; Laurent Lima, Université Grenoble Alpes, France; Fanny Verkamp, Université Toulouse - Jean Jaurès, France; Pascal Pansu, Université Grenoble Alpes, France

**Conceptualizing Prosocial Motivation: Contributing to benefit others in Collaborative Group Contexts**

Toni Rogat, Purdue University, United States



Session B: 20

Time: 15:00-16:30

Location: UOM\_R01

## POSTER PRESENTATION: WELL-BEING AND RESILIENCE

## Chair

Fotini Bonoti, University of Thessaly, Greece

**Looking for talent: discover and stimulate talent-awareness in preschool with a digital portfolio**

Saar Steverlinck, Hogeschool PXL, Belgium; Hanne Rosius, Hogeschool PXL, Belgium; Dorien Jansen, Hogeschool PXL, Belgium

**Measuring School's Contribution to Students' Mental Health: Validation of a New Scale**

Christian Brandmo, University of Oslo, Norway; Hanne Nissen Bjørnsen, Norwegian University of Science and Technology (NTNU), Norway; Gunnar Bjørnebekk, Department of Special Needs Education, Norway

**Testing the effectiveness of a physical activity program on adolescent resiliency**

yuhan hu, Erasmus University Rotterdam, Netherlands; Brian Godor, Avans University of Applied Sciences, Netherlands; Guus Smeets, Erasmus University Rotterdam, Netherlands; Ruth Van der Hallen, Erasmus University Rotterdam, Netherlands

**Meet Them Where They Are: An Investigation of Social Media and Stress in College Students**

Suzanne Lindt, Midwestern State University, United States; Stacia Miller, Midwestern State University, United States; Christina Janise McIntyre, Midwestern State University, United States

**What works best? 3 years of designing & piloting a stress management and resilience intervention**

Natalie Peters, TU Dresden, Faculty of Business and Economics, Chair of Business Education and Management Training, Germany

**Relationships between School-related outcomes and general variables: A tentative comprehensive model**

Clément PERRIN, Université Grenoble Alpes, France; Pascal Bressoux, Université Grenoble Alpes, France; Pierre De Oliveira, Laboratoire Psy-DREPI, Université de Bourgogne-Franche-Comté, France

Session B: 21

Time: 15:00-16:30

Location: UOM\_R04

## POSTER PRESENTATION: ACHIEVEMENT AND MATHEMATICS IN EDUCATIONAL SETTINGS

## Chair

Sara Caviola, University of Padova, Italy

**Can early childhood education in Kosovo contribute to the reduction of educational inequality?**

Saranda Shabanhaxhaj, University of Graz, Institute of Education Research and Teacher Education, Austria; Heike Wendt, University of Graz, Austria

**Electrophysiological correlates of processing numerical order and their association to arithmetic**

Stephan Vogel, University of Graz, Austria; Clemens Brunner, University of Graz, Austria; Roland Grabner, University of Graz, Austria

**Reading Metacognition and Mathematical Literacy: A Cross-Country Comparison of Taiwan and Germany**

Su-Wei Lin, National University of Tainan, Taiwan; Anselm Strohmaier, Technical University of Munich, Germany; Pei-Ming Chiang, National University of Tainan, Taiwan

**Numerical Competencies in Preschoolers with Language Difficulties**

Kirsten Schuchardt, University Hildesheim, Germany; Claudia Maehler, University of Hildesheim, Germany

**Mapping across different types of representations in preschool**

Josetxu Orrantia, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain; Verónica Carretón Jareño, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore

**Finger numeral recognition predicts arithmetic performance in primary school**

Josetxu Orrantia, University of Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain; Verónica Carretón Jareño, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore

Session B: 22

Time: 15:00-16:30

Location: UOM\_GYM

## ROUNDTABLE: ENVIRONMENTAL EDUCATION

## Chair

Jordi Casteleyn, Antwerp University, Belgium

**Words Matter: Public Perceptions of Climate Change Terminology**

Laurel Kruke, University of Southern California, United States; Gale Sinatra, University of Southern California, United States; Wandí Bruine de Bruin, University of Southern California, United States; Norbert Schwarz, University of Southern California, United States

**There is no planet B, so what now? Measuring climate literacy in teenagers**

Monika Martin, University of Education Freiburg, Germany; Magdalena Stadler, University of Education Freiburg, Germany; Josef Künstling, University of Education Freiburg, Germany; Werner Rieß, PH Freiburg, Germany

Session B: 23

Time: 15:00-16:30

Location: UOM\_A10

**WORKSHOP: CONTRIBUTING TO THE INNOVATIVE CULTURE: CREATING A PROGRESSION-GAME GAMIFIED INSTRUCTIONAL DESIGN****Contributing to the innovative culture: Creating a progression-game gamified instructional design**

Emese Boksay-Pap, Pázmány Péter Catholic University, The Institute of International Studies &amp; Political Science, Hungary

Session B: 24

Time: 15:00-16:30

Location: UOM\_R05

**WORKSHOP: CREATING OPPORTUNITIES FOR SELF-REGULATED LEARNING:SETTING UP PARTICIPATORY DESIGN-RESEARCH STUDIES.****Creating opportunities for self-regulated learning:setting up participatory design-research studies.**

H.J.M. Stokhof, HAN University of Applied Sciences, Netherlands; Jeroen van der Linden, HAN University of Applied Sciences / Maastricht University, Netherlands

**ANNOTATIONS:**

THIS SESSION WILL TAKE PLACE IN UOM\_W INSTEAD OF UOM\_R05.

Session B: 25

Time: 15:00-16:30

Location: UOM\_A11

**ICT DEMONSTRATION: CLOSING THE FEEDBACK LOOP - A MOODLE PLUGIN FOR (SEMI-)AUTOMATED FEEDBACK****Closing the Feedback Loop - A Moodle Plugin for (Semi-)automated Feedback**

Ioana Jivet, Goethe University Frankfurt &amp; DIPF, Germany; Tornike Giorgashvili, Goethe-Universität Frankfurt am Main, Germany; Hendrik Drachler, Goethe University Frankfurt, Germany

Session B: 26

Time: 15:00-16:30

Location: UOM\_A07

**ICT DEMONSTRATION: MICROSOFTS' IMMERSIVE READER AS TRANSLANGUAGE-ENABLING TECHNOLOGY IN SECOND LANGUAGE ACQUISITION.****Microsofts' Immersive Reader as translanguange-enabling technology in second language acquisition.**

Sonja Nygaard-Joki, Oestfold University College, Norway; Stine Brynildsen, Østfold University College, Norway

Session C: 1

Time: 17:15-18:45

Location: AUTH\_CH

**INVITED SYMPOSIUM: RAISING AWARENESS ABOUT ONLINE READERS' AWARENESS: DIGITAL COMPETENCE IN MULTIPLE-TEXT CONTEXTS****Chair**

Christian Tarchi, University of Florence, Italy

**Discussant**

Elena Florit, University of Verona, Italy

**Eight-year-olds seeking information with Ipad: dimensions of reading competence**

Eva Brante, Malmö University, Germany; Robert Wallden, Malmö University, Sweden; Kim Ridell, Malmö University, Sweden

**Successful Evaluation of Online Texts Requires Skills to Confirm and Question the Credibility**

Carita Kiili, Tampere University, Finland; Eija Räikkönen, University of Jyväskylä, Finland; Ivar Braten, University of Oslo, Norway; Helge Stromso, University of Oslo, Norway; Michelle Schira Hagerman, University of Ottawa, Canada

**Readers' awareness in the use of intertextual strategies when reading multiple texts**

Lidia Casado Ledesma, University of Florence, Italy; Christian Tarchi, University of Florence, Italy

**Teachers' Perceptions of Multiple-Text Integration: Instructional Challenges and Practices**

Liron Primor Grunfeld, Hemdat Academic College, Israel; Sarit Barzilai, University of Haifa, Faculty of Education, Israel

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE ITALIAN PSYCHOLOGICAL ASSOCIATION (SECTION DEVELOPMENTAL AND EDUCATIONAL PSYCHOLOGY)

Session C: 2

Time: 17:15-18:45

Location: UOM\_CH

**INVITED SYMPOSIUM: EDUCATING THE DEVELOPING MIND: AN OVERARCHING THEORY FOR DEVELOPMENT AND LEARNING****Chair**

ANDREAS DEMETRIOU, University of Nicosia and Cyprus Academy of Sciences, Letters, and Arts, Cyprus

**Organiser**

ANDREAS DEMETRIOU, University of Nicosia and Cyprus Academy of Sciences, Letters, and Arts, Cyprus

**Discussant**

Roger Saljo, University of Gothenburg, Sweden

**A comprehensive theory of intellectual development and its application to education**

ANDREAS DEMETRIOU, University of Nicosia and Cyprus Academy of Sciences, Letters, and Arts, Cyprus

**A developmental approach to problem solving**

Samuel Greiff, University of Luxembourg, Luxembourg

**Contextual frames for development and learning**

Mari-Paullina Vainikainen, Tampere University, Finland

**A new framework of understanding and educating individuals with developmental disorders**

George Spanoudis, University of Cyprus, Cyprus

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE CYPRUS ACADEMY OF SCIENCES, LETTERS, AND ARTS

Session C: 3

Time: 17:15-18:45

Location: UOM\_A13

**SYMPOSIUM: SUSTAINABLE LEARNING IN DIGITAL FUTURES: ETHICS AND VALUES IN DATA-DRIVEN EDUCATIONAL PRACTICES****Chair**

Giulia Messina Dahlberg, University of Gothenburg, Sweden

**Organisers**

Ylva Lindberg, Jönköping University, Sweden; Teresa Cerratto-Pargman, Stockholm University, Sweden

**Discussant**

Anders Buch, VIA University College, Denmark

**Visualizing data packets to reveal data infrastructures and data assets: The InfraReveal Tool**

Marie Utterberg Modén, Department of Applied IT, University of Gothenburg, Sweden; Svea Kiesewetter, University of Gothenburg, Sweden; Annika Bergviken-Rensfeldt, Department of Applied Information Technology, University of Gothenburg, Sweden, Sweden; Thomas Hillman, Department of Applied Information Technology, University of Gothenburg, Sweden, Sweden

**Ethics of AI-driven automated systems for assessment**

Alexandra Farazouli, Stockholm University, Sweden

**Focusing Bias Analyses: Responsible Learning Analytics in the Context of STEM Identity Development**

Adrian Grimm, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Anneke Steegh, IPN-Leibniz Institute for Science and Mathematics Education, Olshausenstraße 62, D-24118 Kiel, Germany, Germany; Marcus Kubsch, IPN-Leibniz Institute for Science and Mathematics Education, Olshausenstraße 62, D-24118 Kiel, Germany, Germany; Knut Neumann, IPN-Leibniz Institute for Science and Mathematics Education, Olshausenstraße 62, D-24118 Kiel, Germany, Germany

**CANCELLED: Data-imaginaries Tacit Ethics in AI-Research (...)**

Joakim Juhl, TU Munich, Germany

Session C: 4

Time: 17:15-18:45

Location: UOM\_A02

**SYMPOSIUM: WHAT DO WE GET IF WE MEASURE TEACHING QUALITY? VALIDITY AND STABILITY OF DIFFERENT APPROACHES****Chair**

Sebastian Röhl, University of Tübingen, Germany

**Organiser**

Sebastian Röhl, University of Tübingen, Germany

**Discussant**

Mark White, University of Oslo, Norway

**Teaching quality: What has changed in the last twenty years?**

Wida Wemmer-Rogh, University of Zurich, Switzerland; Leonie Gossner, University of Zurich, Switzerland; Patrick Schreyer, University of Kassel, Germany; Urs W. Grob, University of Zurich, Switzerland; Eckhard Klieme, German Institute for International Educational Research (DIPF), Germany; Anna-Katharina Praetorius, University of Zurich, Switzerland

**Effects of Student Ratings of Teaching Quality on Learning Achievement – A Meta-analysis**

Sebastian Röhl, University of Tübingen, Germany; Ann-Kathrin Jaekel, University of Tübingen, Germany

**Changing Teaching or Changing Perspectives? Response Shifts in Student Ratings of Teaching Quality**

Jonathan Schweig, RAND Corporation, United States; Jose Felipe Martinez, University of California, United States

**Teaching Quality in Dutch Schools from the Perspectives of School Inspectors, Students, and Teachers**

Hannah Bijlsma, University of Twente, Netherlands; Adrie Visscher, Univ. of Twente, Netherlands; Cees Glas, University of Twente, Netherlands

Session C: 5

Time: 17:15-18:45

Location: UOM\_A03

**SYMPOSIUM: FACTORS SUPPORTING SUCCESSFUL TRANSITION FROM HIGHER EDUCATION TO WORKING LIFE****Chair**

Heidi Hyytinen, University of Helsinki, Finland

**Discussant**

Maaïke Endedijk, University of Twente, Netherlands

**Transition to working life - which employability factors contribute graduates' early career success?**

Tarja Tuononen, University of Helsinki, Finland; Heidi Hyytinen, University of Helsinki, Finland

**Discipline-specific Profiles for Learning Opportunities of Generic Skills in Higher Education**

Katharina Lohberger, Justus Liebig University Giessen, Germany; Edith Braun, Justus-Liebig-University Giessen, Germany

**How does coaching facilitate students' education-to-work transition?**

Niels van der Baan, Maastricht University School of Business and Economics, Netherlands; Simon Beusaert, Maastricht University, Netherlands; Wim Gijsselaers, Maastricht University School of Business and Economics, Netherlands; Inken Gast, Maastricht University, Netherlands

**Graduates navigating on the labour market: A social network perspective**

Ayla De Schepper, University of Antwerp, Belgium; Noel Clycq, University of Antwerp, Belgium; Eva Kyndt, Swinburne University of Technology, Australia

Session C: 6

Time: 17:15-18:45

Location: UOM\_A11

**SYMPOSIUM: PREDICTORS AND OUTCOMES OF HETEROGENEITY IN MOTIVATIONAL DEVELOPMENT IN EARLY SECONDARY SCHOOL****Chairs**

Wendy Symes, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany

**Discussant**

Barbara Flunger, Utrecht University, Netherlands

**Comparison Effects of Students' Achievements on Self-Concepts and Task Values in Secondary School**

Hanna Gaspard, TU Dortmund University, Germany; Ann-Kathrin Jaekel, University of Tuebingen, Germany; Richard Goellner, University of Tuebingen, Germany

**Stability and Change in Students' Motivation Profiles: The Role of the Instructional Design**

Tanja Held, University of Bern, Switzerland; Julia Morinaj, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Motivational Profiles in Mathematics - Stability and Links with Educational and Emotional outcomes**

Anna Widlund, Åbo Akademi University, Finland; Heta Tuominen, University of Eastern Finland, Finland; Johan Korhonen, Åbo Akademi University, Finland

**Interindividual differences in the development of reading self-concept and value in secondary school**

Wendy Symes, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany; Jan Retelsdorf, University of Hamburg, Germany

Session C: 7

Time: 17:15-18:45

Location: AUTH\_DC2

**SYMPOSIUM: HOW TO DESIGN EFFECTIVE EDUCATIONAL VIDEO?****Chair**

Kevin Ackermans, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Organiser**

Kevin Ackermans, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Discussant**

Mireille Bétrancourt, University of Geneva, Switzerland

**A narrative frame is essential in emotional design: The role of value in evoking situational interest**

Tino Endres, University of Freiburg, Germany; Alexander Eitel, University of Giessen, Germany; Alexander Renkl, Universität Freiburg, Germany

**Distracted by a Talking Head? Effects of Instructor Presence in Educational Videos**

Christina Sondermann, German Institute for Adult Education, Germany; Markus Huff, Eberhard Karls Universität Tübingen, Germany; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

**Learning from video with captions vs. subtitles: when second language proficiency matters**

Maria Pannatier, University of Geneva, Switzerland; Mireille Bétrancourt, University of Geneva, Switzerland

**Let me think about it for a moment: Do prompts support learning with explainer videos?**

Marie-Christin Krebs, University of Giessen, Germany; Katharina Braschoß, University of Giessen, Germany; danielle pelzer, University of Giessen, Germany; Alexander Eitel, University of Giessen, Germany

Session C: 8

Time: 17:15-18:45

Location: UOM\_A05

**SINGLE PAPER: CREATING SUPPORTIVE LEARNING SETTINGS FOR REFUGEE AND MIGRANT STUDENTS****Chair**

Emilia Andersson-Bakken, Oslo Metropolitan University, Norway

**The challenges of using co-creation in schools: The case of the Empowering Young Translators Club**

Sarah Crafter, The Open University, United Kingdom; Guida de Abreu, Oxford Brookes University, United Kingdom; Nelli Stavropoulou, The Open University, United Kingdom; Eleni Stamou, Oxford Brookes University, United Kingdom

**Helping Italian school teachers design multilingual activities through a co-participative approach**

Paolo Della Putta, University of Turin, Italy; Cecilia Andorno, Università di Torino, Italy; Rosa Pugliese, Alma Mater Studiorum Università di Bologna, Italy; Silvia Sordella, Università di Torino, Italy; Greta Zannoni, University of Bologna, Italy

**Co-construction in learning settings: Unaccompanied migrant youth of 'errant' mobility**

Charlotte Menin, COMBO, France

**Spanish and English Proficiency of Latino Children of Immigrants to Predict Behavioral Adaptations**

brian collins, Hunter College, City University of New York, United States; Claudio Toppelberg, Harvard University, United States

Session C: 9

Time: 17:15-18:45

Location: UOM\_R05

**SINGLE PAPER: COLLABORATIVE LEARNING IN ONLINE SETTINGS****Chair**

Gillian Peiser, Liverpool John Moores University, United Kingdom

**Students' collaboration dispositions across diverse online collaborative problem solving skills**

Päivi Häkkinen, University of Jyväskylä, Finland; Shupin Li, University of Jyväskylä, Finland; Johanna Pöysä-Tarhonen, University of Jyväskylä, Finland

**Effects of Strategy Training & Advance Organizer in a Cooperative Online Format using Video Analysis**

Agnes Eckart, Justus-Liebig-University Giessen, Germany; Vanessa A. Völlinger, Justus-Liebig-Universität Giessen, Germany

**A group concept mapping study on perceptions of synchronous distance education**

Iwan Wopereis, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Uncertainty Markers as Cues to Form Group Uncertainty Awareness in Online Discussions**

Lenka Schnaubert, University of Nottingham, United Kingdom; Anna Radtke, Ruhr-University Bochum &amp; CAIS, Germany

Session C: 10

Time: 17:15-18:45

Location: UOM\_A10

**SINGLE PAPER: COMPUTER-SUPPORTED COLLABORATIVE LEARNING****Chair**

Ariadne Warmoes, Vrije Universiteit Brussel (VUB), Belgium

**Effects of stimulated reflection on collaboration in an agent-based medical simulation**

Constanze Richters, Ludwig-Maximilians-Universität (LMU), Germany; Laura Brandl, Ludwig-Maximilians-Universität (LMU), Germany; Matthias Stadler, Ludwig-Maximilians-Universität (LMU), Germany; Martin Fischer, LMU University Hospital, Institute of Medical Education, Germany; Ralf Schmidmaier, LMU University Hospital Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Effects of a collaboration script and a reflection prompt on the evaluation of Internet sources.**

Carolin Baumgarten, Ruhr-Universität Bochum, Germany; Heiko Krabbe, Ruhr-University Bochum, Germany; Ingo Kollar, University of Augsburg, Germany; Marc Stadler, Ruhr-University Bochum, Institute of Educational Science, Germany

**Analysing educational dialogue around shared artefacts in technology-mediated contexts**

Sara Hennessy, University of Cambridge, United Kingdom

**A Framework for Success of Virtual and Hybrid Collaboration: A Systematic Review**

Ascha Ahmed, University of Mannheim, Germany; Viola Deutscher, University of Mannheim, Germany

Session C: 11

Time: 17:15-18:45

Location: UOM\_A12

## SINGLE PAPER: DEMOCRATIC CITIZENSHIP EDUCATION

## Chair

Blanka Rósa, Stockholm University, Sweden

**What is colored in and what is colored out? Democracy training in vocational programs**

Linda Ekström, Political science, school of social sciences, Sweden

**Rehearsing Teacher-in-Role: a Door Opener for Intercultural Learning and Democratic Citizenship?**

Michel Cabot, Western Norway University of Applied Sciences, Norway; Gunn Tone Iversen, Western University of Applied Sciences, Norway

**Economics as elective subject – How do students with the subject economics differ from others?**

Lucy Haag, University of Tübingen, Germany; Luis Oberrauch, University Tuebingen, Germany

**Do I Need to Know the Unemployment Rate? Connecting Knowledge to Welfare Attitudes via Deservingness**

Jakub Sowula, University of Teacher Education Berne, CH// University of Tuebingen, GER, Switzerland

Session C: 12

Time: 17:15-18:45

Location: AUTH\_DC1

## SINGLE PAPER: MATHEMATICS TEACHERS: INSTRUCTIONAL STRATEGIES AND COMPETENCIES

## Chair

Gemma O'Sullivan, Eindhoven University of Technology (TU/e), Netherlands

**Conceptions of functional thinking of mathematics educators: an international interview study**

Kerstin Frey, Ludwigsburg University of Education, Germany; Ute Sproesser, PH Ludwigsburg, Germany; Martina Geisen, University of Koblenz - Landau, Germany; Veronika Hubeňáková, Pavol Jozef Šafárik University in Košice, Slovakia; Monika Krišáková, Pavol Jozef Šafárik University in Košice, Slovakia; Nowińska Edyta, Universität Osnabrück, Germany; Marios Pittalis, University of Cyprus, Cyprus; Mirosława Sajka, Pedagogical University of Krakow, Poland; Michiel Veldhuis, Hogeschool IPABO Amsterdam/Alkmaar, Netherlands

**Examining the effect of a deep lecture notetaking intervention on mathematics deeper understanding**

Mengsi Liu, The University of Tokyo, Japan; Yuri Uesaka, The University of Tokyo, Japan

**Early childhood education: Understanding mathematics teachers' diagnostic competence**

Maike Hagena, University of Hamburg, Germany; Michael Besser, Leuphana University of Lüneburg, Germany

**Mathematics teacher educators as a role model: What do preservice teachers learn about it?**

Helena Montenegro, Universidad de Chile, Chile; Salomé Martínez, Universidad de Chile, Chile; Flavio Gúñez, Universidad de Chile, Chile

**Assessing Conceptual Change around Reform-Based Math Practices in Ghanaian Pre-Service Teachers**

Dionne Cross Francis, University of North Carolina at Chapel Hill, United States; Pavneet Kaur Bharaj, University of North Carolina, United States; Kathryn Habib, University of North Carolina at Chapel Hill, United States; Anna Hinden, University of North Carolina, United States; Anna Gustavson, University of North Carolina at Chapel Hill, United States

Session C: 13

Time: 17:15-18:45

Location: UOM\_A07

## SINGLE PAPER: ACHIEVEMENT GOAL THEORY: CLASSROOM GOAL STRUCTURES AND STUDENT GOALS

## Chair

Inge Van der Weijden, Leiden University, Netherlands

**Exploring Classroom Goal Structures Based on Students' Own Words**

József Balázs Fejes, University of Szeged, Hungary

**Momentary Achievement Goal Profiles: Associations with Learning Activities, Interest, and Anxiety**

Junlin Yu, University of Helsinki, Finland; Jussi Järvinen, University of Helsinki, Finland; Veli-Matti Vesterinen, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

**Investigating Cheating in the Lab: Effects of Performance Goals and Evaluation Focus**

Tanja Fritz, University of Augsburg, Germany; Hernán González Cruz, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany; Martin Daumiller, University of Augsburg, Germany

**Relationships Between Students' Achievement Goals and Social Network Centrality in the Classroom**

Alla Hemi, Bar Ilan University, Israel; Nir Madjar, Bar-Ilan University, Israel; Yisrael Rich, Bar Ilan University, Israel; Martin Daumiller, University of Augsburg, Germany

Session C: 14

Time: 17:15-18:45

Location: AUTH\_TE2

## SINGLE PAPER: LEARNING MATHEMATICS IN PRIMARY EDUCATION

## Chair

Katja Scharenberg, University of Education Freiburg, Germany

**Learning spurious associations from mathematics textbooks: A replication and extension study**

Lennart Schalk, PH Schwyz, Switzerland; Parvaneh Babari, Pädagogische Hochschule Schwyz, Switzerland; Bruno Rütsche, Schwyz University of Teacher Education, Switzerland

**Learning through space: spatializing information as a determinant of academic skill development**

Jolien Moorkens, UGENT, Belgium; Jean-Philippe van Dijck, Thomas More University College, Belgium; Wim Fias, UGENT, Belgium

**Benefits of errors: Noticing young learners' mathematical thinking through confusions and mistakes**

Fanni Biró, University of Szeged, Doctoral School of Education; MTA-SZTE Metacognition Research Group, Hungary; Csaba Csikos, University of Szeged, MTA-SZTE Metacognition Research Group, Hungary; Judit Sziatányi, ELTE Eötvös Loránd University, Hungary

**Assessing second grader's proportional vocabulary and proportional reasoning abilities**

Karen De Keersmaeker, KU Leuven, Belgium; Elien Vanluydt, KU Leuven - University of Leuven, Belgium; Patrick Onghena, KU Leuven, Belgium; Wim Van Dooren, KU Leuven, Belgium

**6-year-olds' structural awareness and arithmetic skills**

Camilla Björklund, University of Gothenburg, Sweden; Angelika Kullberg, University of Gothenburg, Sweden

Session C: 15

Time: 17:15-18:45

Location: AUTH\_DC3

## SINGLE PAPER: USING IMMERSIVE TECHNOLOGIES FOR LEARNING AND ASSESSMENT

## Chair

Fatou-Maty Diouf, University of Geneva, Switzerland

**Instruction of Reception Goals as a Method to Direct the Processing of Uncertain Information**

Stefanie Aberle, Leibniz-Institut für Wissensmedien, Germany; Manuela Glaser, Leibniz-Institut für Wissensmedien, Germany; Stephan Schwan, Leibniz-Institut für Wissensmedien, Germany

**Detecting Self-regulated Learning Processes in VR: Causal Sequencing of Multimodal Data**

Márta Sobocinski, University of Oulu, Finland; Daryn Dever, University of Central Florida, United States; Megan Wiedbusch, University of Central Florida, United States; Foyosal Mubarak, University of Oulu, Finland; Roger Azevedo, University of Central Florida, United States; Sanna Järvelä, University of Oulu, Finland

**Using VR to Train Situation Awareness in Road Construction Operators: The Effect of Debriefing**

Ilona Friso-van den Bos, University of Twente, Netherlands; Bas Kollöffel, University of Twente, Netherlands

**Methodological challenges in evaluating the potential of Virtual Reality for classroom management**

Jolien Mouw, University of Groningen, Faculty of Behavioural and Social Sciences, GION Education/Research, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands

Session C: 16

Time: 17:15-18:45

Location: UOM\_CR

## SINGLE PAPER: SUPPORTING SELF-REGULATED LEARNING AND BEHAVIOUR WITH TECHNOLOGY

## Chair

Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany

**Predicting self-regulated learning support needs during learning**

Rick Dijkstra, Radboud University Nijmegen, Netherlands; Max Hinne, Radboud University, Netherlands; Eliane Segers, Radboud University, Netherlands; Inge Molenaar, Radboud University, Netherlands

**Monitoring in Multimedia Learning: Does Monitoring one's Learning Process Affect Learning?**

Emely Hoch, Leibniz-Institut für Wissensmedien, Germany; Katharina Fleig, Leibniz-Institut für Wissensmedien (IWM) | Knowledge Media Research Center, Germany; Katharina Scheiter, University of Potsdam, Germany

**The promotion of self-regulated Learning: A video-based classroom study**

Amina Rosenthal, University of Applied Sciences Northwestern Switzerland, Switzerland; Carmen Nadja Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Tabea Daria Eberli, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

**Promoting self-regulation during the COVID-mandated home-schooling period – Insights from interviews**

Rutmer Ebbes, University of Amsterdam, Netherlands; Jaap Schuitema, University of Amsterdam, Netherlands; Marjolein Zee, Erasmus University Rotterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands; Helma Koomen, Research Institute of Child Development and Education, Netherlands

Session C: 17

Time: 17:15-18:45

Location: AUTH\_TE1

**SINGLE PAPER: TEACHERS' SELF-EFFICACY: DIFFERENT ASPECTS, DIFFERENT CONTEXTS****Chair**

Ella AIT-ZAOUIT, Fontys University of Applied Sciences, Netherlands

**University teachers' self-efficacy beliefs**

Irene Douwes-van Ark, University of Groningen, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Jan Folkert Deinum, University of Groningen, Netherlands; Hanke Korpershoek, University of Groningen, Netherlands

**Teachers' teaching profiles and self-efficacy as measured through the HEAT inventory**

Liisa Postareff, HAMK University of Applied Sciences, Finland; Juulia Lahdenperä, Häme University of Applied Sciences, Finland; Telle Haikari, Häme University of Applied Sciences, Finland; Anna Parpala, University of Helsinki, Finland

**Teachers' social self-efficacy as a predictor of teacher-child relationships quality in Greek ECE**

Anastasia Vatou, International Hellenic University, Greece; Athanasios Gregoriadis, Aristotle University of Thessaloniki, Greece; Nikolaos Tsigilis, Aristotle University of Thessaloniki, Greece; Vasileios Grammatikopoulos, International Hellenic University, Greece

**Teachers' self-efficacy and intercultural classroom practices in diverse classroom contexts**

Pauline Slot, Utrecht University, Netherlands; Paul Leseman, Utrecht University, Netherlands; Bodine Romijn, Utrecht University, Netherlands; Valentina Pagani, Università di Milano Bicocca, Italy

Session C: 18

Time: 17:15-18:45

Location: UOM\_R08

**SINGLE PAPER: BELONGING, WELL-BEING AND MENTAL HEALTH IN EDUCATION****Chair**

David Thore Gravesen, VIA University College, Denmark

**Effects of Supplemental Instruction on Grades, Well-being and Belonging: a Field Experiment**

Izaak Dekker, Amsterdam University of Applied Sciences (AUAS), Netherlands; Jantien Stam, Faculty of Education, Amsterdam University of Applied Sciences, Netherlands

**Peer support in enhancing students' sense of belonging, study engagement and life satisfaction**

Sanna Ulmanen, University of Helsinki, Finland; Lotta Tikkanen, University of Helsinki, Finland

**What keeps first-year medical students mentally healthy? – A latent profile analysis**

Sabine Polujanski, University of Augsburg, Germany; Thomas Rothhoff, Augsburg University, Germany; Ulrike Nett, Augsburg University, Germany; Ann-Kathrin Schindler, Augsburg University, Germany

**Living better! Self-care for teachers – Effects of a prevention and health promotion intervention**

Ingmar Hosenfeld, University of Kaiserslautern- Landau (RPTU), Germany; Malte Cramer, University of Koblenz - Landau, Germany; Gabriele E. Dlugosch, University of Koblenz - Landau, Germany; Teresa Noichl, University of Koblenz - Landau, Germany; Inga Wagner, University of Koblenz-Landau, Germany

Session C: 19

Time: 17:15-18:45

Location: AUTH\_T002

**SINGLE PAPER: DIFFERENT ASPECTS OF PARENTAL INVOLVEMENT IN CHILDREN'S EDUCATION****Chair**

Katrine Nesje, University of Oslo, Norway

**Patterns of Partnership Practices: Digital Media vs. Face-to-Face Contact?**

Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany; Theresia Gabriele Hummel, Otto-Friedrich-University of Bamberg, Germany

**Math motivation and math achievement in primary school: Relationship with parents practices**

Francisco Peixoto, ISPA - Instituto Universitário | Center for Research in Education, Portugal; Lourdes Mata, ISPA - Instituto Universitário | Center for Research in Education, Portugal; Mafalda Campos, ISPA - Instituto Universitário | Center for Research in Education, Portugal; Jelena Radisic, University of Oslo, Norway

**Family involvement, student behavioural engagement and approach to homework: a longitudinal study**

Carolina Rodríguez Llorente, Universidad de La Coruña, Spain; Rocío González-Suárez, Camilo Jose Cela University, Spain; María Cabana-Bedoya, Universidad de La Coruña, Spain; Emmanuel Manalo, Kyoto University, Japan

**Homework Stress and Learning Disability: The Role of Parental Shame, Guilt, and Need Frustration**

Idit Katz, Ben-Gurion University of the Negev, Israel; Marianna Alesi, Ricercatore Università di Palermo, Italy; Angelica Moè, University of Padova, Italy



Session C: 20

Time: 17:15-18:45

Location: UOM\_A04

**SINGLE PAPER: PRE-SERVICE SCIENCE TEACHERS****Chair**

Marije Lesterhuis, UMC Utrecht, Netherlands

**Analyzing data in the physics laboratory by pre-service physics teachers'**

Ida Kukliansky, Ruppin Academic Center, Israel

**Characteristics of productive discourse in undergraduate courses for student science teachers**

Hadeel Edrees Dabbah, Ben Gurion University of the Negev, Israel, Israel; Orit Ben Zvi-Assaraf, Ben-Gurion University of the Negev, Israel

**Facilitating coherent science instruction for pre-service teachers by reflection**

Miikka Turkkila, University of Helsinki, Finland; Merike Kesler, University of Helsinki, Finland; Antti Laherto, University of Helsinki, Finland; Jari Lavonen, University of Helsinki, Finland; Kalle Juuti, University of Helsinki, Finland

**Prospective teachers' use of construal-based intuitive explanations in science instructions**

Sebastian Tempelmann, Institute for Research, &amp; Development, Germany; Jakub Sowula, University of Teacher Education Berne, CH// University of Tuebingen, GER, Switzerland; Trix Cacchione, University of Teachereducation FHNW (PH FHNW), Switzerland

Session C: 21

Time: 17:15-18:45

Location: AUTH\_T102

**SINGLE PAPER: TEACHERS' PROFESSIONAL LEARNING COMMUNITIES AND LIFELONG LEARNING COMPETENCIES****Chair**

Denis Francesconi, University of Vienna, Austria

**The Contributions of Unique Professional Learning Communities with Preservice and Tutor Teachers**

Orna Heaysman, Hemdat College of Education, Israel; ALISA AMIR, Achva College of Education, Israel; Orit Avidov-Ungar, Achva College of Education, Israel; Revital Amzaleg, Achva College of Education, Israel; Yousif.a.l.a3@gmail.com Alamour, Achva College of Education, Israel

**Regression Model of Lifelong Learning Competencies for the Teacher Trainers**

Win Phyu Thwe, University of Szeged, Doctoral School of Education, Hungary; Anikó Kálmán, University of Szeged, Doctoral School of Education, Hungary

**A socio-material framework to examine teachers' lifelong professional development trajectories**

Giuseppe Ritella, University of Campania Luigi Vanvitelli, Italy; Alessio Surian, Università degli Studi di Padova, Italy

**Exploring motivation to transfer in Early Childhood Education teachers in Mexico**

Carla Quesada-Pallarès, Universitat Autònoma de Barcelona, Spain; Karla Villaseñor, Benemérita Universidad Autónoma de Puebla, Mexico; Cristina Torrelles, Institut Nacional d'Educació Física de Catalunya, Spain; Carlos Enrique Silva, Benemérita Universidad Autónoma de Puebla, Mexico

Session C: 22

Time: 17:15-18:45

Location: AUTH\_T202

**SINGLE PAPER: INSTRUCTIONAL DESIGN****Chair**

Eveline Wuttke, Goethe-Universität Frankfurt, Germany

**The Flow-State of Teachers and the Learning Space: The Role of the Design Conditions**

Tamir Zausmer, Tel-Hai Academic College &amp; Golan Research Institute, Israel; Orly Dahan, Tel-Hai Academic College, Israel; Irit Sasson, Tel-Hai College, Israel

**The Effects of Age and Interactions with the Robots Dash and Dot on Students' Computational Thinking**

Yiota H. Diakou, University of Cyprus, Cyprus; Vaso Anastasiou, University of Cyprus, Cyprus; Charoula Angeli, University of Cyprus, Cyprus

**Interleaving Effects in Blindfolded Perceptual Learning Across Various Sensory Modalities**

Roman Abel, Ruhr University Bochum, Germany; Julian Roelle, Ruhr-University Bochum, Germany

**Integration of everyday life aspects in classroom learning**

Anne-Mai Näkk, Tallinn University, Estonia; Inge Timoštšuk, Tallinn University, Estonia

Session C: 23

Time: 17:15-18:45

Location: UOM\_R09

## SINGLE PAPER: WELL-BEING IN PRE-SERVICE AND EARLY CAREER TEACHERS

## Chair

Erika Schlatter, Leiden University, Netherlands

**Well-being while becoming a teacher? A latent profile analysis among pre-service teachers**

MANUELA HALDIMANN, University of Teacher Education St.Gallen, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Doreen Flick-Holtzsch, University of Zurich, Switzerland

**How do trainee teacher's relationship with their mentor explain how trainees experience their work?**

Michael Goller, University of Kassel, Germany; Elisabeth Maué, University of Konstanz, Germany; Caroline Bonnes, University of Konstanz, Germany; Tobias Kärner, University of Hohenheim, Germany

**Well-being Profiles of European Early Career Teachers**

Kirsi Pyhäntö, University of Helsinki, Finland; Lotta Tikkanen, University of Helsinki, Finland; Roosa Yli-Pietilä, Tampere University, Finland; Tiina Soini-Ikonen, Tampere University, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Auli Toom, University of Helsinki, Finland

**Adaptation and Validation of a Measure of Preservice Teachers' Positive Mental Health Literacy**

Ma. Jenina N. Nalipay, The Chinese University of Hong Kong, Hong Kong; Ching-Sing Chai, The Chinese University of Hong Kong, Hong Kong; Morris Siu-yung Jong, The Chinese University of Hong Kong, Hong Kong; Ronnel Bornasal King, The Chinese University of Hong Kong, Hong Kong; Imelu G. Mordeno, Mindanao State University-Iligan Institute of Technology, Philippines

Session C: 24

Time: 17:15-18:45

Location: UOM\_R02

## POSTER PRESENTATION: LEARNING AND INSTRUCTIONAL TECHNOLOGIES

## Chair

Kateryna Zabolotna, University of Oulu, Finland, Finland

**Immersive Virtual Reality as a pedagogical tool for climate change education**

Valdemar Stenberdt, University of Copenhagen, Denmark; Guido Makransky, University of Copenhagen, Denmark

**Meta-re-analyses of cross-cultural learning strategies in higher education**

Alex Shum, The University of Hong Kong, Hong Kong; Luke Fryer, University of Hong Kong, Hong Kong; Jan Vermunt, Eindhoven University of Technology, Netherlands; Clara Ajsuksmo, Atma Jaya Catholic University of Indonesia, Indonesia; Francisco Cano-Garcia, University of Granada, Spain; Vincent Donche, University of Antwerp, Belgium; Dennis Law, Caritas Institute of Higher Education, Hong Kong; Reinaldo J. Martínez-Fernández, Universitat Autònoma de Barcelona, Spain; Peter Van Petegem, University of Antwerp, Belgium; Ji Yu, Tsinghua University, China

**Effects of Augmented Reality on knowledge acquisition in learning eye diseases: A mixed-method study**

Juming Jiang, The University of Hong Kong, Hong Kong; Anakin Chu Kwan Lai, The University of Hong Kong, Hong Kong; Yau Kei Chan, The University of Hong Kong, Hong Kong

**Learning Factories as new Learning Environments in Vocational Education and Training**

Sebastian Anselmann, University of Education Schwäbisch Gmünd, Germany; Uwe Faßhauer, University of Education Schwäbisch Gmünd, Germany; Lars Windelband, Karlsruhe Institute of Technology (KIT), Germany

**A computerized linguistic analysis of sociomoral language in students' Flipgrid videos**

Ziye Wen, The Ohio State University, United States; Tzu-Jung Lin, The Ohio State University, United States; Michael Glassman, The Ohio State University, United States; Shantanu Tilak, The Ohio State University, United States; Wonjoon Cha, The Ohio State University, United States; Yue Sheng, The Ohio State University, United States; Saetbyul Kim, The Ohio State University, United States; Monica Lu, The Ohio State University, United States

**Learning from dialogues and video annotation: A design experiment in teacher education.**

Anki Strom, University of South-Eastern Norway, Norway

Session C: 25

Time: 17:15-18:45

Location: UOM\_R03

**POSTER PRESENTATION: INCLUSIVE AND SPECIAL EDUCATION AND LEARNING****Chair**

Tessa van Schijndel, University of Amsterdam, Netherlands

**The implementation of formative assessment in inclusive mathematics instruction**

Kyra Renftel, Leuphana University Lueneburg, Germany; Fynn Töllner, Leuphana University of Lueneburg, Germany; Michael Besser, University of Lueneburg, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany

**The 'ToPPERS' framework of effective teaching principles in prevocational education**

Charlotte Arnou, KU Leuven (BE), Belgium; Heline Van Peteghem, Vrije Universiteit Brussel, Belgium; Nadine Engels, Vrije Universiteit Brussel (VUB), Belgium; Ingeborg Placklé, Vrije Universiteit Brussel, Belgium; Machteld Vandecandelaere, KU Leuven, Belgium

**Whole Person Research Productivity: Towards a More Equitable Higher Education Research Environment**

Crishana Benton, University of North Florida, United States; Daniel Dinsmore, University of North Florida, United States

**An individual behavioral intervention in Finland and Greece: A single case experimental study**

Mika Paananen, University of Jyväskylä, Finland; Henrik Husberg, University of Helsinki / Niilo Mäki Institute, Finland; Anne Karhu, University of Eastern Finland, Finland; Athanasios Gregoriadis, Aristotle University of Thessaloniki, Greece; Sara Pöntinen, Niilo Mäki Institute, Finland; Hannu Savolainen, University of Eastern Finland, Finland

**School inclusion 2014 and 2022: How do teachers' behavioral intentions and attitudes change?**

Henrike Mentel, WWU Muenster, Germany; Natalie Foerster, University of Münster, Germany; Elmar Souvignier, University of Muenster, Germany

**Do you Belong at your University? Belongingness and Authenticity in Higher Education**

Anne-Roos Verbree, University Medical Center Utrecht, Netherlands; Gönül Dilaver, University Medical Centre Utrecht, Netherlands; Leoniek Wijngaards-de Meij, Utrecht University, Netherlands; Marieke van der Schaaf, University Medical Center Utrecht / Utrecht University, Netherlands

Session C: 26

Time: 17:15-18:45

Location: UOM\_GYM

**ROUNDTABLE: E-LEARNING AND ONLINE LEARNING****Chair**

Burcu Arslan, ETS Global, Netherlands

**Balancing educational theory and teacher's input in designing teacher dashboards.**

Susan Janssen, Radboud University Nijmegen, Netherlands; Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands; Anouschka van Leeuwen, Utrecht University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands

**Teaching information evaluation in self-paced e-learning mode: is distributed practice helpful?**

Mônica Macedo-Rouet, CY Cergy Paris Université, France; Jean-Marc Meunier, Université Paris 8, France; Anna Potocki, Université de Grenoble, France; Jean-Francois Rouet, University of Poitiers, France

**Supporting teachers' interpretation of multimodal learning analytics to assess student engagement**

Megan Wiedbusch, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

**Selecting Didactic Templates for Optimizing Online Education**

Emre Yilmazturk, Open University, Department of Online Learning and Instruction, Netherlands; Kevin Ackermans, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands; Gino Camp, Open Universiteit, Department of Online Learning and Instruction, Netherlands

Session C: 27

Time: 17:15-18:45

Location: UOM\_A06

**WORKSHOP: FORGETNOT – A DIGITAL TOOL FOR INFORMING TEACHING AND ENHANCING RETENTION****ForgetNot – a digital tool for informing teaching and enhancing retention**

Merike Saar, Tallinn University, Estonia

Session C: 28

Time: 17:15-18:45

Location: UOM\_A09

**ICT DEMONSTRATION: BUILDING BLOCKS: AN ADAPTIVE ONLINE PLATFORM FOR FOREIGN LANGUAGE LITERACY DEVELOPMENT****Building Blocks: An adaptive online platform for foreign language literacy development**

Quint Oga-Baldwin, Waseda University, Japan; Luke Fryer, The University of Hong Kong, Hong Kong; Alex Shum, The University of Hong Kong, Hong Kong; Kaori Nakao, Seinan Gakuin University, Japan; Lishi Liang, The University of Hong Kong, China

Session D: 1

Time: 08:00-09:30

Location: AUTH\_DC3

**INVITED SYMPOSIUM: A MULTI-DISCIPLINARY PERSPECTIVE ON IMMERSIVE VIRTUAL REALITY LEARNING AND INSTRUCTION****Chair**

Vincent Hoogerheide, Utrecht University, Netherlands

**Organisers**

Andreas Lachner, University of Tübingen, Germany; Vincent Hoogerheide, Utrecht University, Netherlands; Salome Wagner, University of Tübingen, Germany

**Discussant**

Tina Seufert, Ulm University, Germany

**Encouraging Learners in VR to be More Reflective and Metacognitive**

Mina Johnson, Arizona State University, United States; Shin-Phing Christine Yu, Department of Psychology, Arizona State University, United States; Anoosh Kapadia, School of Computing and Augmented Intelligence, Arizona State University, United States; Augustine Bennet, School of Speech and Hearing Sciences, Arizona State University, United States

**Impact of an Experience vs. Information-Based VR Educational Simulation on Green Behavior**

Adéla Plechatá, University of Copenhagen, Denmark; Marijke Hiltje Hielkema, Department of Food Science, University of Copenhagen, Denmark; Lisa Marie Merkl, Department of Marketing &amp; Consumer Behaviour, University of Bayreuth, Germany; Michael Bom Frøst, Department of Food Science, University of Copenhagen, Denmark; Guido Makransky, University of Copenhagen, Denmark

**Uncover Teachers' Movement Patterns in Immersive VR: Relevance for Visual Attention Performance**

Yizhen Huang, University of Potsdam, Germany; Eric Richter, University of Potsdam, Germany; Thilo Kleickmann, Kiel University, Germany; Dirk Richter, University of Potsdam, Germany; Katharina Scheiter, University of Potsdam, Germany

**Privacy in Educational Virtual Reality: Challenges for Educational Practices**

Efe Bozkir, University of Tuebingen, Germany; Enkelejda Kasneci, Technical University of Munich, Germany

ANNOTATIONS:  
SIG 7 INVITED SYMPOSIUM

Session D: 2

Time: 08:00-09:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: TEACHER LEARNING ABOUT AND THROUGH DIALOGUE AND ARGUMENTATION****Chair**

Christa Asterhan, Hebrew University of Jerusalem, Israel

**Discussant**

Fritz C. Staub, University of Zurich, Switzerland

**What's wrong with professional development for dialogic teaching?**

Adam Lefstein, The Hebrew University of Jerusalem, Israel

**Developing transformative tools for teacher and classroom dialogue for learning**

Riikka Hofmann, University of Cambridge, United Kingdom

**Arguments about Facilitating Argumentation: Teachers' Schemas about Dialogic Pedagogy**

Sherice Clarke, University of California, San Diego, United States; Sushil S, University of California San Diego, United States; Katherine Dennis, University of California San Diego, United States

**Promoting productive classroom talk in teacher interventions – A matter for pre-service teachers?**

Alexander Groeschner, Friedrich Schiller University Jena, Germany

ANNOTATIONS:  
SIG 26 INVITED SYMPOSIUM

Session D: 3

Time: 08:00-09:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: HOW LEARNING AND EDUCATION SHAPE THE BRAIN****Chairs**

Dietsje Jolles, Universiteit Leiden, Netherlands; Stephan Vogel, University of Graz, Austria

**Discussant**

Bert De Smedt, KU Leuven, Belgium

**How reading instruction shapes brain responses in individual children**

Alexander Enge, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Michael Artur Skeide, Max Planck Institute for Human Cognitive and Brain Sciences, Germany

**Synchronizing the brain: an executive functions-based reading program for children with dyslexia**

Tzipi Horowitz Kraus, Technion - Israel Institute of Technology, Israel

**Stop & Think: development and evaluation of a primary school-based maths and science intervention**

Lucy Palmer, Birkbeck College, University of London, United Kingdom; Iroise Dumontheil, Birkbeck, University of London, United Kingdom

**Cognitive, genetic and cerebral factors influencing learning to stop in childhood**

Grégoire Borst, Université Paris Cité - CNRS, France

ANNOTATIONS:  
SIG 22 INVITED SYMPOSIUM

Session D: 4

Time: 08:00-09:30

Location: UOM\_CR

**SYMPOSIUM: THE ROLE OF PRIOR KNOWLEDGE IN LEARNING****Chair**

Thomas Simacek, University of Trier, Germany

**Organiser**

Thomas Simacek, University of Trier, Germany

**Discussant**

Patricia Alexander, University of Maryland, United States

**Prior knowledge in inquiry learning**

Tessa Eysink, University of Twente, Netherlands; Xiulin Kuang, University of Twente, Netherlands; Ton de Jong, University of Twente, Netherlands

**Studies on Prior Knowledge in Learning: A Comprehensive Bibliometric Analysis**

Michael Schneider, University of Trier, Germany; André Bittermann, Leibniz-Institute for Psychology Information (ZPID), Germany; Danielle McNamara, Arizona State University, United States; Bianca Simonsmeier, University of Trier, Germany

**How Prior Knowledge and Other Individual Variables Interact with Scaffolds in Learning Fractions**

Sarah Hofer, Ludwig-Maximilians-Universität (LMU), Germany; Frank Reinhold, University of Education Freiburg, Germany; Sarah Bichler, Ludwig-Maximilians-University Munich, Germany

**Preparation for Future Learning in Physics: The Importance of Overlap in Prior Knowledge**

Christian Thurn, ETH Zurich, Switzerland; Peter Edelsbrunner, ETH Zurich, Switzerland; Ralph Schumacher, ETH Zurich, Switzerland; Elsbeth Stern, ETH Zurich, Switzerland

Session D: 5

Time: 08:00-09:30

Location: UOM\_CH

**SYMPOSIUM: MULTIPLE PERSPECTIVES ON STUDENT'S EMOTIONS EXPERIENCED IN CLASS****Chairs**

Lisa Stempfer, University of Vienna, Austria; Elisabeth Graf, University of Vienna, Austria

**Organisers**

Lisa Stempfer, University of Vienna, Austria; Elisabeth Graf, University of Vienna, Austria

**Discussant**

Reinhard Pekrun, University of Essex, United Kingdom

**Say it, Feel it: How Emotions in Civic Education Relate to Classroom Climate and Participation**

Elisabeth Graf, University of Vienna, Austria; Lisa Stempfer, University of Vienna, Austria; Krista Muis, McGill University, Canada; Thomas Goetz, Universität Wien, Austria

**Control, Task-Value, and Emotions Predict Emotion Regulation During Mathematics Problem-Solving**

Kelsey Losenno, McGill University, Canada; Krista Muis, McGill University, Canada

**Associations between Teacher Heart Rate Variability and Teacher and Student Emotions and Engagement**

Monika Donker, Utrecht University, Netherlands; Brianna Kennedy, Utrecht University, Netherlands; Sara Scrimin, University of Padova, Italy; Tim M. Mainhard, Leiden University, Netherlands

**Beyond the Mean Score: Inter-Individual Differences in Temporal Fluctuations of Student Boredom**

Lisa Stempfer, University of Vienna, Austria; Thomas Goetz, Universität Wien, Austria

Session D: 6

Time: 08:00-09:30

Location: UOM\_A03

**SYMPOSIUM: READING IN DIGITAL CONTEXTS: EFFECTS OF DISTRACTIONS AND MULTITASKING****Chair**

Lucia Mason, University of Padova, Italy

**Organisers**

Lucia Mason, University of Padova, Italy; Ladislao Salmerón, University of Valencia, Spain

**Discussant**

Ivar Bråten, University of Oslo, Norway

**Media Multitasking Habits While Reading: Effects on Students' Calibration and Comprehension**

Ladislao Salmerón, University of Valencia, Spain; Mario Romero, University of Valencia, Spain; Pablo Delgado, University of Sevilla, Spain; Lidia Altamura García, University of Valencia, Spain

**Metacognitive Scaffolding, Digital Reading, and Mind Wandering in Adults With and Without ADHD**

Adi Brann, Open University of Israel, Israel; Yael Sidi, the Open University of Israel, Israel

**Effects of Reading With On-Screen Digital Distractions**

Angelica Ronconi, University of Padova, Italy; Lucia Mason, University of Padova, Italy; Lucia Manzione, University of Padova, Italy; Anne Schueler, Leibniz-Institut für Wissensmedien, Germany

**The Impact of Attentional Disruption During Digital Reading: Tracking the Reading Eyes**

Véronique DRAI-ZERBIB, Université de Bourgogne, France; Guillaume Chevet, University of Burgundy, France; Marine Michelin, University of Burgundy, France; Annie Vinter, University of Burgundy, France; Thierry Baccino, University of Paris 8, Italy

Session D: 7

Time: 08:00-09:30

Location: AUTH\_T102

**SYMPOSIUM: RUBRICS: OLD AND NEW RESEARCH****Chair**

Ernesto Panadero, Universidad Deusto, Spain

**Organiser**

Ernesto Panadero, Universidad Deusto, Spain

**Discussant**

Jeff Greene, university of north carolina at chapel hill, United States

**A meta-analysis on the effects of rubrics on academic performance**

Anders Jönsson, Kristianstad University, Sweden; Ernesto Panadero, Universidad Deusto, Spain; Leire Pinedo, Universidad de Deusto, Spain; Belen Fernandez Castilla, Universidad Nacional de Educación a Distancia, Spain

**Agency in rubric co-design: a participatory action research approach**

Juuso Henrik Nieminen, The University of Hong Kong, Finland; Jani Hannula, University of Helsinki, Finland

**A new view on rubrics – an eye tracking study of formative rubric feedback**

Lieselotte Schmidt Postmes, UMC Utrecht, Netherlands; Renske de Kleijn, UMC Utrecht, Netherlands; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Marije Lesterhuis, UMC Utrecht, Netherlands; Marieke van der Schaaf, University Medical Center Utrecht / Utrecht University, Netherlands

**How students use rubrics: using process data from eye tracking**

Ernesto Panadero, Universidad Deusto, Spain; Pablo Delgado, University of Sevilla, Spain; David Zamorano, Universidad de Deusto, Spain; Leire Pinedo, Universidad de Deusto, Spain; Alazne Fernández Ortube, University of Deusto, Spain; Lucía Barrenetxea-Minguez, University of Deusto, Spain

Session D: 8

Time: 08:00-09:30

Location: AUTH\_DC2

**SYMPOSIUM: THE POTENTIAL OF PLAY FOR CHILDREN'S LEARNING IN UNCERTAIN TIMES****Chair**

Lena Hollenstein, University of Teacher Education St.Gallen, Switzerland

**Organiser**

Lena Hollenstein, University of Teacher Education St.Gallen, Switzerland

**Discussant**

Franziska Vogt, St.Gallen University of Teacher Education, Switzerland

**The relation of play and learning empirically studied and conceptualised**

Camilla Björklund, University of Gothenburg, Sweden; Ingrid Pramling-Samuelsson, University of Gothenburg, Sweden

**Early educators navigating a spectrum of play facilitation – exploring how practices weave and shift**

Hanne Jensen, The LEGO Foundation, Denmark; Kathrine Jørgensen, The LEGO Foundation, Denmark

**The role of kindergarten educators in pretend play for future skills and digital transformation**

Lena Hollenstein, University of Teacher Education St.Gallen, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland

**Play and technology enhanced toys in early childhood education: an evaluation instrument**

Maria Hatzigianni, University of West Attica, Greece; Anastasia Misirli, University of Patras, Greece; Vassilis Komis, University of Patras, Greece; Maria Dardanou, University of Tromsø, Norway; Iro Voulgari, National and Kapodistrian University of Athens, Department of Early Childhood Education, Greece; Dimitra Bourha, University of West Attica, Greece; Christoforos Karachristos, University of Patras, Greece

Session D: 9

Time: 08:00-09:30

Location: AUTH\_DC1

**SYMPOSIUM: TEACHER-CHILD INTERACTIONS IN EARLY CHILDCARE: CONDITIONS, ASSOCIATIONS AND MEASUREMENT APPROACHES****Chairs**

Franka Baron, University of Bern, Switzerland; Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal, Portugal

**Discussant**

Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

**Domains of teacher-toddler interactions and associations with conditions in early childcare settings**

Franka Baron, University of Bern, Switzerland; Anja Linberg, German Youth Institute, Germany; Simone Lehl, PH Weingarten, Germany; Dorothea Dornheim, University of Bamberg, Germany

**Associations between job satisfaction, professional development, and educator-child interactions**

Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal, Portugal; Joana Cadima, University of Porto, Portugal

**Longitudinal association between teacher-child interaction quality and children's literacy skills**

Jenni Salminen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Measuring Interaction Quality in ECEC: An Empirical Analyses of the CLASS Pre-K and the SSTEW**

Elisa Oppermann, University of Bamberg, Germany; Lars Burghardt, University of Bamberg, Germany; Julia Barenthien, University of Hamburg, Germany; Mirjam Steffensky, University of Hamburg, Germany; Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

Session D: 10

Time: 08:00-09:30

Location: AUTH\_T002

**SINGLE PAPER: TEACHERS' ASSESSMENT METHODS****Chair**

Estelle Desjarlais, Université du Québec à Montréal, Canada

**Design choices in programmatic assessment: balancing between formative and summative**

Bas Agricola, HU University of Applied Sciences, Netherlands; Marlies de Vos, Open University the Netherlands, Netherlands; Tamara van Schilt-Mol, HAN, Netherlands; Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands

**Acceptance of simulation-based assessment formats in teacher education**

Christoph Vogelsang, Paderborn University, Germany; Jana Meier, University of Paderborn, Germany; Thomas Janzen, PLAZ Professional School - Paderborn University, Germany; Philipp Wotschel, Paderborn Centre for Educational Research and Teacher Education - PLAZ-Professional School - University of Paderborn, Germany

**Assessing pre-service EFL teachers' feedback performance in role-play-based simulations**

Thomas Janzen, PLAZ Professional School - Paderborn University, Germany; Philipp Wotschel, Paderborn Centre for Educational Research and Teacher Education - PLAZ-Professional School - University of Paderborn, Germany; Jana Meier, University of Paderborn, Germany; Christoph Vogelsang, Paderborn University, Germany

**Are Preschool Teachers Willing to Engage in Learning Situations?**

Lukas Schmitt, RPTU Kaiserslautern-Landau, Germany; Miriam Leuchter, RPTU Landau, Germany; Laura Venitz, University of Koblenz-Landau, Germany

Session D: 11

Time: 08:00-09:30

Location: UOM\_A02

**SINGLE PAPER: MENTORING AND SUPERVISION IN WORKPLACE LEARNING****Chair**

Nele Bleuwx, KU LEUVEN, Belgium

**What do workplace educators value about student performance?**

Marlies de Vos, Open University the Netherlands, Netherlands; Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands; Cees van der Vleuten, Maastricht University, Netherlands; Ely de Bruijn, Hogeschool Utrecht / OU, Netherlands

**Is it the clinical supervisor's role to support medical students' emotional challenges – if so when?**

Linda Barman, KTH, Royal Institute of Technology, Sweden; Maria Weurlander, Stockholm University, Sweden; Henrik Lindqvist, Linköping University, Sweden; Robert Thornberg, Linköping University, Sweden; Annika Wernerson, Karolinska Institutet, Sweden

**Pedagogic strategies of supervisors in health care placements**

Lieve Ceelen, Open University of the Netherlands, Netherlands; Anne Khaled, HAN University of Applied Sciences, Netherlands; Loek Nieuwenhuis, Open University of the Netherlands, Netherlands; Ely de Bruijn, Open University of the Netherlands, Netherlands

**Uncovering hidden Professional Learning Needs and Learning Preferences of Mentors in Flanders**

Panayota Cotzaridis, KU LEUVEN, Belgium; Eline Vanassche, KU Leuven, Belgium; Ruben Vanderlinde, Ghent University, Belgium

Session D: 12

Time: 08:00-09:30

Location: AUTH\_TE2

**SINGLE PAPER: EMOTION REGULATION AND WELL-BEING****Chair**

Alejandro Ortega-Arranz, Universidad de Valladolid, Spain

**The decline of learning enjoyment and learning effort over primary and lower-secondary school**

Anna Hawrot, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Ilka Wolter, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**Help me if you can I'm feeling down: Supporting emotion regulation and well-being in the classroom**

Matt Somerville, IOE, UCL's Faculty of Education and Society, United Kingdom; Emily Midouhas, IOE, UCL's Faculty of Education and Society, United Kingdom; Marcos Delprato, University of Sussex, United Kingdom

**Science students' burnout profiles, social identity and trust for teachers' faith in their abilities**

Liisa Myyry, University of Helsinki, Finland; Veera Kallunki, University of Helsinki, Finland

**Utilisation of self-reflection-based feedback to support teaching and well-being in higher education**

Telle Haalikari, Häme University of Applied Sciences, Finland; Siru Myllykoski-Laine, University of Turku, Finland; Anna Parpala, University of Helsinki, Finland; Liisa Postareff, HAMK University of Applied Sciences, Finland

Session D: 13

Time: 08:00-09:30

Location: UOM\_R08

**SINGLE PAPER: TEACHER-STUDENT INTERACTIONS AND SOCIAL ASPECTS OF LEARNING****Chair**

Maria T. Sikkema-de Jong, Leiden University, Netherlands

**Development of an observation system for teacher-child interaction in lower primary school classes**

K.M. Starreveld, Vrije Universiteit Amsterdam, Netherlands; Mathilde Overbeek, VU University Amsterdam, Netherlands; Agnes Willemsen, VU University Amsterdam, Netherlands; Marian Bakermans-Kranenburg, ISPA - University Institute, Portugal

**Impacts of Tablet Computer Use on the Quality of Teacher-Child Interactions**

Ueli Thomas Studhalter, University of Teacher Education Lucerne (PH Luzern), Switzerland; Jossen Priska, University of Teacher Education Lucerne (PH Luzern), Switzerland; Marco Seeli, University of Teacher Education of Lucerne, Switzerland; Annette Tettenborn, University of Teacher Education of Lucerne, Switzerland

**Decoding Prosociality: Understanding Classroom Based Experiences**

Aneesa Pervez, IOE, UCL's Faculty of Education and Society, United Kingdom; Matt Somerville, IOE, UCL's Faculty of Education and Society, United Kingdom; Ed Baines, IOE, UCL's Faculty of Education and Society, United Kingdom

**Exploring student-staff's contribution to quality work in higher education**

Hannah Mülder, Faculty of Education, University of Oslo, NO, Norway; Carolina Borges Rau Steuernagel, Faculty of Medicine, University of Oslo, Norway; Rachele Esterhazy, University of Oslo, Norway; Tone Dyrdal Solbrekke, Faculty of Education, University of Oslo, Norway

Session D: 14

Time: 08:00-09:30

Location: AUTH\_T202

**SINGLE PAPER: GAME-BASED LEARNING****Chair**

Lucía Barrenetxea-Mínguez, University of Deusto, Spain

**Assessment of divergent thinking through game based robotics**

Margarida Margarida Romero, Université Côte d'Azur, France

**Gaming for environmental citizenship: A systematic literature review on behaviour change games**

Yiannis Georgiou, Cyprus University of Technology, Cyprus; Andreas Hadjichambis, Cyprus Center for Environmental Research &amp; Education, Cyprus; Demetra Hadjichambi, Cyprus Center for Environmental Research &amp; Education, Cyprus; Anastasia Adamou, Cyprus Center for Environmental Research &amp; Education, Cyprus

**Playing in the Museum. Influence of Students' Personal Epistemology on their Learning Experience.**

Simon Morard, University of Geneva, Switzerland

**Player types in digital learning systems - First results on the Gamification User Types Hexad Scale**

Simon Schultze, University of Teacher Education St. Gallen, Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland

Session D: 15

Time: 08:00-09:30

Location: UOM\_A10

**SINGLE PAPER: TEACHING AND ASSESSING MATHEMATICS****Chair**

Clark Chinn, Rutgers University, United States

**Focusing on Generic and Content-Specific Practices in Mathematics: A Meta-Analysis Spanning 50 Years**

Charalambos Charalambous, University of Cyprus, Cyprus; Thekla Iakovou, University of Cyprus, Cyprus; Peng Peng, The University of Texas at Austin, United States

**Mathematics teacher educators' perspective on teaching and collaboration in Chile**

Paula Guerra, Universidad católica Silva henriquez, Chile; Helena Montenegro, Universidad de Chile, Chile; Flavio Guíñez, Universidad de Chile, Chile; Salome Martinez, Universidad de Chile, Chile; Constanza Ledermann, Universidad de Chile, Chile

**Multi-criterion noticing in mathematics education - A vignette-based study**

Sebastian Kuntze, Ludwigsburg University of Education, Germany; Marita Friesen, University of Education Heidelberg, Germany; Jens Kruppenauer, University of Education Ludwigsburg, Germany

**Student teachers' attitudes predict self-efficacy for teaching low-achieving students in mathematics**

Freya Winterle, University of Vienna, Germany; Nele Kampa, University of Vienna, Austria



Session D: 16

Time: 08:00-09:30

Location: UOM\_A11

**SINGLE PAPER: PARENTS, CHILDREN AND DIGITAL TECHNOLOGIES****Chair**

Evanna Ratner, Gordon Academic College, Israel

**The digital home learning environment of toddlers**

Sarah K Schröter, Otto-Friedrich University of Bamberg, Germany; Elisa Oppermann, University of Bamberg, Germany; Franziska Cohen, University of Education Freiburg, Germany; Luisa Prokupek, Otto-Friedrich-University of Bamberg, Germany; Sabine Blaurock, Otto-Friedrich-University of Bamberg, Germany; Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

**Supporting children's numeracy development in families: A digital intervention study**

Anna Mues, Ludwig-Maximilians-Universität (LMU), Germany; Efsun Birtwistle, Ludwig-Maximilians-Universität (LMU), Germany; Astrid Wirth, Ludwig-Maximilians-Universität München, Germany; Tina Schiele, Ludwig-Maximilians-Universität München, Germany; Frank Niklas, Ludwig-Maximilians-Universität (LMU), Germany

**Framework of parental restrictive mediation for using digital technologies at home**

Marit Puusepp, University of Tartu, Estonia; Margus Pedaste, University of Tartu, Estonia

**App-based Support for Parental Self-Efficacy in the First 1,000 Days: A Randomised Control Trial**

Laura Outhwaite, University College London, IOE, United Kingdom

Session D: 17

Time: 08:00-09:30

Location: UOM\_A04

**SINGLE PAPER: SPECIAL EDUCATIONAL NEEDS: DEAF AND HARD OF HEARING CHILDREN, NUMERACY AND SRL DIFFICULTIES****Chair**

Mark Smith, Kean University, United States

**How adults with and without deafness process idioms: Direct retrieval or compositional analysis?**

Inmaculada Fajardo, Department of Developmental and Educational Psychology/Reading Research Unit, Spain; Nadina Gómez-Merino, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Marta Vergara, Department of Developmental and Educational Psychology/Reading Research Unit, Spain; Antonio Ferrer, Department of Developmental and Educational Psychology/Reading Research Unit, Spain

**Formative assessment in inclusive mathematics education in secondary schools: A systematic review**

Fynn Töllner, Leuphana University of Lüneburg, Germany; Kyra Renftel, Leuphana University Lüneburg, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany

**Interconnectedness between students' self-efficacy in self-regulation and strengths**

Minna Ikävalko, University of Eastern Finland, Finland; Erko Sointu, University of Eastern Finland, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Matthew Lambert, University of Nebraska-Lincoln, United States

Session D: 18

Time: 08:00-09:30

Location: UOM\_A05

**SINGLE PAPER: COMPUTATIONAL THINKING AND SCIENTIFIC DECISION-MAKING****Chair**

Maria Öhrstedt, Stockholm University, Sweden

**Effects of different learning environments on students' socio-scientific decision-making.**

Maria Tsapali, University of Bristol, United Kingdom; Michelle Ellefson, University of Cambridge, United Kingdom

**Robotics and programming in primary education: a teacher-led classroom intervention.**

Amy Hughes, Cardiff University, United Kingdom; Sarah Gerson, Cardiff University, United Kingdom; Johanna van Schaik, Radboud University Nijmegen, Netherlands

**Quality and equity in computational thinking education: the relationship with teachers' practices**

Sara Monteyne, KU Leuven - Centre for educational effectiveness and evaluation, Belgium; Charlotte Struyve, KU Leuven - Centre for educational effectiveness and evaluation, Belgium; Johan van Braak, Ghent University, Belgium; Koen Aesaert, K.U.Leuven, Belgium

**Associations between Creativity & Computational Thinking in Primary School: Computational Creativity**

Ann-Kathrin Jaggy, Hector Research Institute of Education Sciences and Psychology, Germany; Katerina Tsarava, Hector Research Institute of Education Sciences and Psychology, Germany; Manuel Ninaus, University of Graz, Institute of Psychology, Austria; Mathias Benedek, University of Graz, Institute of Psychology, Austria; Korbinian Moeller, Loughborough University, Mathematics Education Centre, United Kingdom

Session D: 19

Time: 08:00-09:30

Location: UOM\_R05

**SINGLE PAPER: CLASSROOM ASSESSMENT AND FEEDBACK****Chair**

Alex Kozulin, Achva College and Feuerstein Institute, Israel

**Student Self-Assessment and Feedback in Singapore Primary Schools: Engaging Teachers and Students**

Hwei Ming Wong, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Feedback in Singapore Classrooms: Findings on Assessment, Knowledge and Interactions Across 15 Years**

Dennis Kwek, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Differences between assessor and assessee outcomes in peer assessment: A systematic review.**

David Zamorano, Universidad de Deusto, Spain; Maryam Alqassab, Universidad de Las Palmas de Gran Canaria, Spain; Ernesto Panadero, Universidad Deusto, Spain

**Teachers stimulating self-regulated learning via co-regulated formative assessment practice**

Marijke Veugen, Wageningen University and Research Centre, Netherlands; Judith Gulikers, Wageningen University, Netherlands; Perry den Brok, Wageningen University &amp; Research, Netherlands

Session D: 20

Time: 08:00-09:30

Location: UOM\_A06

**SINGLE PAPER: MORAL, DEMOCRATIC AND CITIZENSHIP EDUCATION****Chair**

Auli Toom, University of Helsinki, Finland

**Impact of a Media Literacy Intervention on Primary School Pupils' Ability to Recognize Fake News**

Genevieve Allaire-Duquette, Université de Sherbrooke, Canada; Abdelkrim Hasni, Université de Sherbrooke, Canada; Josée Nadia Drouin, Agence Science-Pressé, Canada; Anne Gaignaire, Le Curieux, Canada; Audrey Groleau, Université du Québec à Trois-Rivières, Canada; Jean-Philippe Ayotte-Beaudet, Université de Sherbrooke, Canada

**Friendship as political virtue: a project of citizenship education with middle school children**

Luigina Mortari, University of Verona, Italy; Marco Ubbiali, University of Verona, Italy; Rosi Bombieri, University of Verona, Italy

**Implementing VaKE in Science Education in different age groups**

Panagiota Christodoulou, University of Western Macedonia, Greece; Dimitris Pnevmatikos, University of Western Macedonia, Greece; Georgios Malandrakis, Aristotle University of Thessaloniki, Greece; Evmorfia Garyfallogianni, University of Western Macedonia, Greece; Pantelis Kizos, University of Western Macedonia, Greece

**Covid-19 pandemic as an opportunity for shaping civic identity among youth.**

Lars Birger Davan, OsloMet, Norway

Session D: 21

Time: 08:00-09:30

Location: UOM\_R09

**SINGLE PAPER: READING: MOTIVATIONAL ASPECTS****Chair**

Justine Stang-Rabrig, TU Dortmund University, Germany

**Increasing task-oriented reading skills of lower comprehenders on inferential questions**

Ruth Villalon, University of Cantabria, Spain; Marian Serrano-Mendizábal, University of Valencia / Interdisciplinary Research Structure for Reading (ERI Lectura), Spain; Ángeles Melero, University of Cantabria, Spain; Belén Izquierdo-Magaldi, University of Cantabria, Spain

**Implementation of professional development trajectories for reading instruction.**

Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Marjolein Dobber, Vrije Universiteit Amsterdam, Netherlands; Jedidja Meima-den Breejen, Vrije Universiteit Amsterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands

**Development of self-regulation searching processes while answering text-based pre-questions**

Noemi Skrobiszewska, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Marian Serrano-Mendizábal, University of Valencia / Interdisciplinary Research Structure for Reading (ERI Lectura), Spain; Eduardo Vidal-Abarca, Universidad de Valencia, Spain; Paul van den Broek, Leiden University, Netherlands

**Effects of the reading self-concept in relation to multilingualism**

Daria Ferencik-Lehmkuhl, University of Cologne, Germany; Michael Schurig, TU Dortmund University, Germany; Nils Jaekel, University of Oulu, Finland; Sandra Schwinning, University of Wuppertal, Germany

Session D: 22

Time: 08:00-09:30

Location: UOM\_R01

**POSTER PRESENTATION: MOTIVATION, EDUCATIONAL TECHNOLOGIES AND TEACHING APPROACHES****Chair**

Lena Sofie Kegel, Educational Psychology, University of Münster, Germany

**The Perception and Effect of Autonomy Support from Artificial Intelligence**

Juming Jiang, The University of Hong Kong, Hong Kong; Ayumi Tanaka, Doshisha University, Japan

**Doctoral Students' Language Preference and Motivation for Publication in Japan**

Cheng Wenjuan, Hiroshima University, Japan

**Associations between perfectionistic profiles and motivational profiles**

Antti Pulkka, National Defence University, Finland; Heta Tuominen, University of Eastern Finland, Finland; Markku Niemivirta, University of Eastern Finland, Finland

**How digital mathematics curricula can affect performance: A focus on motivational features**

Margaret Bowman, Miami University, United States; Kui Xie, The Ohio State University, United States

**(De)motivating teaching styles in higher education – validation of the circumplex model**

Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Nina Pavlin-Bernardic, Faculty of Humanities and Social Sciences, Croatia; Vesna Vlahovic-Stetic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

**Using a Person-Centered Approach to Study Motivating and Demotivating Teaching Styles**

Lennia Matos, Pontifical Catholic University of Peru, Peru; Rafael Gargurevich, Pontifical Universidad Católica del Perú, Peru; Dora Herrera, Pontifical Universidad Católica del Perú, Peru; Mordechai Benita, Ben-Gurion University of the Negev, Israel; Johnmarshall Reeve, Australian Catholic University, Australia

Session D: 23

Time: 08:00-09:30

Location: UOM\_R02

**POSTER PRESENTATION: THE USE OF EYE TRACKING IN STUDYING COGNITION AND LEARNING****Chair**

Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece

**Finding the balance: Can generating predictions promote conceptual change in intuitive physics?**

Elfriede Diestel, DIPF Frankfurt, Germany; Maria Theobald, DIPF Frankfurt, Germany; Garvin Brod, DIPF Frankfurt, Germany

**Using eye-tracking measures to predict novice learners' Python program reading performance**

Meng-Jung Tsai, National Taiwan Normal University, Taiwan; Dai-Rung Li, National Taiwan Normal University, Taiwan; Po-Fen Hsu, National Taiwan Normal University, Taiwan; Chung-Yuan Hsu, National Pingtung University of Science and Technology, Taiwan; Guo-Li Chiou, National Taiwan Normal University, Taiwan

**Using gaze-cued think-aloud to elicit teachers' professional vision of classroom management**

Rebekka Stahnke, Leibniz Institute for Science and Mathematics Education, Germany; Sigrid Blomeke, University of Oslo, Norway

**The role of prior knowledge in playing a game incorporating self-explanation: An eye-tracking study**

Guo-Li Chiou, National Taiwan Normal University, Taiwan; Chung-Yuan Hsu, National Pingtung University of Science and Technology, Taiwan; Meng-Jung Tsai, National Taiwan Normal University, Taiwan

**How to signal animations for learners with different prior knowledge levels: an eye-tracking study**

Killyam Forge, University of Toulouse, CLLE, France; Julie Lemarié, University of Toulouse, CLLE, France; Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France; Pierre-Vincent Paubel, University of Toulouse, CLLE, France

**Using AI in educational apps to individually support students: Opportunities and challenges**

Maike Schindler, Universität zu Köln/ University of Cologne, Germany; Achim J. Lilienthal, TU Munich, Germany

Session D: 24

Time: 08:00-09:30

Location: UOM\_R03

## POSTER PRESENTATION: SUSTAINABLE DEVELOPMENT AND EDUCATION

## Chair

Lorenzo Miani, University of Bologna, Alma Mater Studiorum, Italy

**Quality Teacher Education in the context of the Sustainable Development Goals**

Sunet Grobler, University of Innsbruck - Institute for Teacher Education and School Research, Austria

**Development of young children in China: Comparing parent report and direct assessment longitudinally**

Zeyi Li, The University of Hong Kong, Hong Kong; Stephanie Wing Yan Chan, The University of Hong Kong, Hong Kong; Nirmala Rao, The University of Hong Kong, Hong Kong

**Local and Regional Influences When Developing K-12 Climate Change Education Policy**

Laurel Kruke, University of Southern California, United States; Gale Sinatra, University of Southern California, United States; Julie Marsh, University of Southern California, United States

**Curriculum, transfer, equity. What research can('t) tell us.**

Daniel Muijs, Queen's University Belfast, United Kingdom

**The cultural correlates of learning poverty: An ecological analysis across 45 countries Long-term**

Ronnell Bornasal King, The Chinese University of Hong Kong, Hong Kong; Jiaying Li, The University of Macau, Macao; Shing On Leung, The University of Macau, Macao

**How do all these big concepts of a sustainable planet have the power to change my practice?**

Torhild Høydalsvik, Volda University College, Norway; Jan Vikane, Volda University College, Norway

Session D: 25

Time: 08:00-09:30

Location: UOM\_GYM

## ROUNDTABLE: CITIZENSHIP EDUCATION AND ARGUMENTATION

## Chair

Bruno Poellhuber, University of Montreal, Canada

**Disagreement as a value in education for democracy: Patterns of classroom talk and teacher beliefs**

Andreas Reichelt Lind, OsloMet - Oslo Metropolitan University, Norway

**Culture of Democracy in the Changing Landscape of Higher Education in the USA**

Sandra Bass, UC Berkeley, United States; Thomas Schnaubelt, Stanford University, United States; Anna Mahoney, Tulane University, United States; Agnieszka Nance, Tulane University, United States; Ryan McBride, Tulane University, United States

**School at the museum: non formal education and teachers' professional development**

Laura Landi, Università di Modena e Reggio Emilia, Italy; Chiara Bertolini, Università degli studi di Modena e Reggio Emilia - Department of Education and Human Sciences, Italy; Lucia Scipione, University of Modena and Reggio Emilia, Italy; Chiara Pellicciari, Musei civici di Reggio Emilia, Italy; Riccardo Campanini, Musei civici di Reggio Emilia, Italy; Alessandra Landini, Istituto Comprensivo Manzoni, Italy; Agnese Vezzani, University of Modena and Reggio Emilia - Department of Education and Human Sciences, Italy; Mariangela Scarpini, Unimore (University of Modena and Reggio Emilia), Italy

**The interplay between task characteristics and quality of student dialogue in citizenship education**

Monika Waldis, University of Applied Sciences Northwestern Switzerland, Switzerland; Manuel Hubacher, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Liliane Wenger, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Acelya Aydin, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

Session D: 26

Time: 08:00-09:30

Location: UOM\_A13

## WORKSHOP: PORTRAIT METHODOLOGY: A VALUABLE TOOL TO STIMULATE TEACHER IDENTITY REFLECTION AND DEVELOPMENT

**Portrait methodology: a valuable tool to stimulate teacher identity reflection and development**

Ella AIT-ZAOUIT, Fontys University of Applied Sciences, Netherlands

Session D: 27

Time: 08:00-09:30

Location: UOM\_A07

## ICT DEMONSTRATION: A NEW TOOL FOR EXPLORING SCIENTIFIC WORK AND WRITING IN THE FACE OF DIGITIZATION

**A new tool for exploring scientific work and writing in the face of Digitization**

Jakob Ott, ZHAW Zurich University of Applied Sciences, Switzerland; Christian Rapp, ZHAW School of Management and Law, Switzerland; Otto Kruse, Zurich University of Applied Sciences (ZHAW), Switzerland; CURTIS GAUTSCHI, Zurich University of Applied Sciences (ZHAW), Switzerland

Keynotes: 1

Time: 09:45-11:15

Location: AUTH\_CH

**KEYNOTE: NUMBERS, BRAINS, DEVELOPMENT AND EDUCATION: PROGRESS, CHALLENGES AND PROMISE****Chair**

Eleni Kyza, Cyprus University of Technology, Cyprus

**Numbers, Brains, Development and Education: Progress, Challenges and Promise**

Daniel Ansari, University of Western Ontario, Canada

Keynotes: 2

Time: 09:45-11:15

Location: HELEXPO\_CC

**KEYNOTE: TOGETHER FOR LEARNING: UNDERSTANDING THE ECOSYSTEM OF COLLABORATIVE LEARNING****Chair**

Armin Weinberger, Saarland University, Germany

**Together for learning: Understanding the ecosystem of collaborative learning**

Crina Damsa, University of Oslo, Norway

Keynotes: 3

Time: 09:45-11:15

Location: UOM\_CH

**KEYNOTE: LEARNING TO MASTER WRITING: COPING WITH THE COGNITIVE DEMANDS OF WRITING PROCESSES****Chair**

Rui Alexandre Alves, University of Porto, Portugal

**Learning to Master Writing: Coping with the Cognitive Demands of Writing Processes**

Thierry Olive, CNRS &amp; Université de Poitiers, France

Session E: 1

Time: 12:00-13:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: CURRENT ISSUES IN MEASURING AND MODELING MOTIVATIONAL OUTCOMES INTERNATIONAL LARGE-SCALE ASSESSMENTS****Chair**

Ioulia Televantou, European University Cyprus, Cyprus

**Organiser**

Rolf Strietholt, IEA Hamburg, Germany

**Discussant**

Christoph Niepel, University of Luxembourg, Luxembourg

**Associations between motivation, engaging teaching and math performance in TIMSS 2015**

Michalis Michaelides, University of Cyprus, Cyprus; Militsa Ivanova, Department of Psychology, University of Cyprus, Cyprus

**Motivational Outcomes and Immigration Background: Studying the "Immigrant Paradox" using TIMSS**

Ioulia Televantou, European University Cyprus, Cyprus; Andrés Christiansen, International Association for the Evaluation of Educational Achievement (IEA), Netherlands; Ingrid Gogolin, University of Hamburg, Germany; Rolf Strietholt, IEA Hamburg, Germany

**Exploring the Paradoxical Relation Between Achievement and Self-beliefs: A Country-level Trend Study**

Rolf Strietholt, IEA Hamburg, Germany; Mojca Rozman, International Association for the Evaluation of Educational Achievement (IEA), Germany; Maximiliano Romero, International Association for the Evaluation of Educational Achievement (IEA), Germany

**The method factor in mixed-worded scales: Relationships between scales and with student performance**

Stefan Johansson, University of Gothenburg, Sweden; Rolf Strietholt, IEA Hamburg, Germany

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT (IAE)

Session E: 2

Time: 12:00-13:30

Location: AUTH\_CH

## INVITED SYMPOSIUM: MEET THE EARLI EDITORS

**Chair**

Rui Alexandre Alves, University of Porto, Portugal

**Discussant**

Rui Alexandre Alves, University of Porto, Portugal

**Learning and Instruction**

Gert Rijlaarsdam, University of Amsterdam, Netherlands

**Educational Research Review**

Hans Gruber, University of Regensburg, Germany

**Frontline Learning Research**

Nina Bonderup Dohn, University of Southern Denmark, Denmark

**New Perspectives on Learning and Instruction**

Isabel Raemdonck, Université Catholique de Louvain, Belgium

## ANNOTATIONS:

INVITED SYMPOSIUM EARLI JOURNALS AND BOOK SERIES

Session E: 3

Time: 12:00-13:30

Location: UOM\_R08

## SYMPOSIUM: TEACHERS' AND SCHOOL STAFF MEMBERS' AGENCY, EXPERTISE AND TIES TO COLLEAGUES

**Chair**

Tuire Palonen, University of Turku, Finland

**Organiser**

Tuire Palonen, University of Turku, Finland

**Discussant**

Michael Goller, University of Kassel, Germany

**School staff members' professional agency in Finland, Scotland, and Sweden – a comparative study**

Päivi Hökkä, University of Tampere, Finland; Katja Vähäsantanen, Häme University of Applied Sciences, Finland; Eija Räikkönen, University of Jyväskylä, Finland

**Teachers' relational agency within professional networks for supporting migrant students**

Natasa Pantic, University of Edinburgh, United Kingdom; Marc Sarazin, University of Edinburgh, United Kingdom; Thibault Coppe, University of Groningen, Netherlands; Didem Oral, University of Stockholm, Sweden; Eveliina Manninen, University of Jyväskylä, Finland

**Teacher agency and ties to colleagues. A Survey study from two Finnish schools.**

Tuire Palonen, University of Turku, Finland; Eveliina Manninen, University of Jyväskylä, Finland; Päivi Hökkä, University of Tampere, Finland

**Can mathematics teachers' pedagogical content knowledge predict their professional influence?**

Monika Grigaliuniene, Vytautas Magnus University, Lithuania; Erno Lehtinen, University of Turku, Finland

Session E: 4

Time: 12:00-13:30

Location: UOM\_CH

## SYMPOSIUM: TEACHING AND LEARNING ECONOMICS WITH VISUAL REPRESENTATIONS

**Chair**

Malte Ring, University of Tübingen, Germany

**Organiser**

Malte Ring, University of Tübingen, Germany

**Discussant**

Stefanie Findeisen, University of Konstanz, Germany

**What Makes Graph Tasks Difficult in Economics? Results from a Graph Competence Assessment Study**

Malte Ring, University of Tübingen, Germany; Luis Oberrauch, University of Tuebingen, Germany

**Effects of the representation of economic models with graphs on learners' ability to think in models**

Jana Doris Franke, University of Education Freiburg, Germany, Germany; Franziska Birke, Institute for vocational training and economic education, Germany

**Representing or affording? Visual representations in economics teaching as an agent in the classroom**

Ann-Sofie Jägerskog, Stockholm University, Sweden

**Visualising complexity and changeability - critical aspects of teaching visual models in economics**

Malin Tväråna, Uppsala University, Sweden, Sweden; Ann-Sofie Jägerskog, Stockholm University, Sweden; Mattias Björklund, Stockholm University, Sweden; Sara Carlberg, n/a, Sweden; Patrik Gottfridsson, n/a, Sweden; Therese Juthberg, n/a, Sweden; Robert Kennedal, n/a, Sweden; Marie Losciale, n/a, Sweden; Jenny Rosengren, n/a, Sweden; Per Sahlstrom, n/a, Sweden; max Strandberg, Stockholm University, Sweden

Session E: 5

Time: 12:00-13:30

Location: UOM\_A02

**SYMPOSIUM: TEAM TEACHING, A PROMISING STRATEGY? EMPIRICAL INSIGHTS FROM NORWAY, SOUTH-AFRICA, AND FLANDERS****Chairs**

Hanne Tack, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**Organisers**

Hanne Tack, Ghent University, Belgium; Mathea Simons, University of Antwerp, Belgium

**Discussant**

Elke Struyf, University of Antwerp, Belgium

**A state-of-the-art on team teaching practices in Flanders: Results of a large-scale survey study**

Aron Decuyper, Ghent University, Belgium; Dries De Weerd, University of Antwerp, Belgium; Dries Mariën, University of Antwerp, Belgium; Hanne Tack, Ghent University, Belgium; Mieke Meirsschaut, mieke.meirsschaut@arteveldehs.be, Belgium; Ruben Vanderlinde, Ghent University, Belgium; Mathea Simons, University of Antwerp, Belgium; Elke Struyf, University of Antwerp, Belgium

**Shared responsibility between team teachers predicts student achievement – A Norwegian study**

Aslaug Fodstad Gourvennec, University of Stavanger, Norway; Oddny Judith Solheim, The Norwegian Reading Centre, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway; Erin McTigue, Fakultet for utdanningsvitenskap og humaniora Nasjonalt senter for leseopplæring og leseforskning, Norway

**Measuring learners' perceptions of a team-taught learning environment: Development and validation**

Mathea Simons, University of Antwerp, Belgium; Stephen Coetzee, University of Pretoria, South Africa; Marlies Baeten, KU Leuven, Belgium; Astrid Schmulian, University of Pretoria, South Africa

**To Team or Not to Team: Undergraduate Students' Perspectives of Two Teachers Simultaneously in Class**

Stephen Coetzee, University of Pretoria, South Africa; Astrid Schmulian, University of Pretoria, South Africa

Session E: 6

Time: 12:00-13:30

Location: UOM\_A03

**SYMPOSIUM: INTERVENTIONS FOR MULTIPLICATIVE REASONING: ADVOCATING AN EARLY START AND ATTENTION TO TRANSFER****Chair**

Xenia Vamvakoussi, University of Ioannina, Greece

**Organisers**

Wim Van Dooren, KU Leuven, Belgium; Xenia Vamvakoussi, University of Ioannina, Greece

**Discussant**

Andreas Obersteiner, Technical University of Munich, Germany

**Early understanding of measurement division: the effects of a minimal intervention via game activity**

Konstantinos Christou, Aristotle University of Thessaloniki, Greece; Anastasia Kandyli, University of Western Macedonia, Greece

**Fostering early multiplicative reasoning: An ongoing design research study**

GEORGIA PITTA, University of Ioannina, Greece, Greece; Xenia Vamvakoussi, University of Ioannina, Greece

**Stimulating the early development of proportional reasoning: An intervention with second graders**

Wim Van Dooren, KU Leuven, Belgium; Elien Vanluydt, KU Leuven - University of Leuven, Belgium; Laure De Keyser, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**Adaptive or routine expertise in promoting spontaneous focusing on multiplicative relations**

Jake McMullen, University of Turku, Finland; Saku Määttä, University of Turku, Finland; Antti Koskinen, University of Tampere, Finland, Finland; Hilma Halme, University of Turku, Finland; Kristian Kiili, Tampere University, Finland; Minna Hannula-Sormunen, University of Turku, Finland

Session E: 7

Time: 12:00-13:30

Location: AUTH\_T002

**SYMPOSIUM: REIMAGINING EDUCATION: FROM RESEARCH TO POLICY AND PRACTICE****Chair**

Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

**Discussant**

Jo Van Herwegen, UCL Institute of Education, United Kingdom

**The International Science and Evidence based Education (ISEE) Assessment: aims and findings**

Nandini Chatterjee Singh, UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development, India; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

**A global research agenda for evidence-based education**

Grégoire Borst, Université Paris Cité - CNRS, France

**How to strengthen evidence-based policymaking in education**

Jonathan Kay, Education Endowment Foundation, United Kingdom

**Education in the mixed reality**

Anantha Duraipappah, UNESCOMGIEP, India

Session E: 8

Time: 12:00-13:30

Location: AUTH\_DC2

**SYMPOSIUM: HOW TO IMPROVE SOCIAL PRESENCE AND DECREASE ORCHESTRATION LOAD IN HYBRID LEARNING ENVIRONMENTS?****Chair**

Jan Elen, KU Leuven, Belgium

**Organiser**

Annelies Raes, KU Leuven, Belgium

**Discussant**

Gaëlle Molinari, TECFA, Université de Genève, Switzerland

**Optimal experience in a hybrid computer-supported collaborative learning setting**

Siem Buseyne, Faculty of Psychology and Educational Sciences, Centre for Instructional Psychology and Technology, KU Leuven Kulak, Belgium; Itec, imec research group at KU Leuven, Imec; CIREL, Centre Interuniversitaire de Recherche en Education de Lille, France; Celine Vens, KU LEUVEN, Belgium; Thierry Danquigny, Université de Lille, France; Fien Depaape, KU Leuven, Belgium; Jean Heutte, Université de Lille, France; Annelies Raes, KU Leuven, Belgium

**Supporting teachers in hybrid learning environments: The role of learning analytics**

Rogers Kaliisa, University of Oslo, Faculty of Education, Norway; Crina Damsa, University of Oslo, Norway

**Teacher's and Students' Perception of Hybrid Classrooms in Secondary School Education**

Alexander Groeschner, Friedrich Schiller University Jena, Germany; Dennis Hauk, Friedrich Schiller University Jena, Germany

**Teacher orchestration load while designing and implementing hybrid collaborative activities**

Alejandro Ortega-Arranz, Universidad de Valladolid, Spain; Alejandra Martínez Monés, Universidad de Valladolid, Spain; Ishari Amarsinghe, Universitat Pompeu Fabra, Spain; Yannis Dimitriadis, Universidad de Valladolid, Spain; Davinia Hernandez-Leo, Universitat Pompeu Fabra, Spain

Session E: 9

Time: 12:00-13:30

Location: UOM\_A04

**SINGLE PAPER: STUDENT ACADEMIC EMOTIONS AND INTEREST IN CLASSROOM AND IN COMPUTERISED LEARNING ENVIRONMENTS****Chair**

Maria Psyridou, University of Jyväskylä, Finland

**Do Individual and Contextual Determinants Affect the Development of Emotions? Growth Curve Models.**

Simon Meyer, University of Erlangen-Nuremberg, Germany; Juliane Schlesier, University of Oldenburg, Germany; Michaela Gläser-Zikuda, University of Erlangen-Nürnberg, Institute for Educational Science, Germany

**Individual Differences as Determinants of Boredom and Shame in Socio-Emotional Conflict Situations**

Lara Chehayeb, German Research Center for Artificial Intelligence (DFKI), Germany; Dimitra Tsovaltzi, DFKI (German Research Center for Artificial Intelligence) / Saarland University, Germany; Patrick Gebhard, German Research Center for Artificial Intelligence (DFKI), Germany

**Automatically Detecting Affect in Computerized Learning Environments: A Systematic Literature Review**

Maria Cutumisu, University of Alberta, Canada; Lydia González Esparza, The University of Alberta, Canada; Minghao Cai, University of Alberta, Canada; Iñaki Palestino Díaz, Tecnológico de Monterrey (ITESM), Mexico; Genaro Rebolledo Méndez, Tecnológico de Monterrey (ITESM), Mexico; Carrie Demmans Epp, University of Alberta, Canada

**Maintaining interest: Contrasting the effects of triggered situational and individual interest**

Thorben Jansen, Leibniz-Institut für die Pädagogik der Naturwissenschaften und Mathematik, Germany; Lars Höft, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Luca Bahr, Leibniz Institute for Science and Mathematics Education (IPN), Germany

Session E: 10

Time: 12:00-13:30

Location: UOM\_A10

**SINGLE PAPER: INSTRUCTIONAL DESIGN IN HIGHER EDUCATION****Chair**

Daria Khanolainen, University of Jyväskylä, Finland

**High-Stakes And High Goals: How Two Learning Goals can be Achieved When Studying Worked Examples**

Nina Udvardi-Lakos, University of Freiburg, Germany; Marlene Weirich, Pädagogische Hochschule Freiburg, Germany; Julia Asbrand, Humboldt-University Berlin, Germany; Alexander Renkl, University of Freiburg, Germany

**Designing professional education for adaptive expertise: case study results**

Loek Nieuwenhuis, HAN University of Applied Sciences, Netherlands; Lia Fluit, Radboud University Medical Center, Netherlands; Wietske Kuijer-Siebelink, HAN University of Applied Sciences, Netherlands; Carla Oonk, Wageningen University, Netherlands; Petra Swennenhuis, Fontys University of Applied Sciences, Netherlands; Anne Khaled, Hogeschool Utrecht (University of Applied Sciences Utrecht) and HAN UAS, Netherlands

**An analysis of instructional methods in higher education: Differences by course and discipline.**

Javier Fernández, Universidad de Leon, Spain; Ernesto Panadero, Universidad Deusto, Spain; Carlos Rodríguez-Hernández, Institute for the Future of Education, Tecnológico de Monterrey, Mexico; Juan Fraile, Universidad Francisco de Vitoria, Spain

**Students' disciplinary values navigation through troubled pasts and contemporary resistances**

Sugat Dabholkar, GSE-Rutgers University, United States; Julia Gouvea, Tufts University, United States; Lawrence Uricchio, Tufts University, United States



Session E: 11

Time: 12:00-13:30

Location: AUTH\_TE1

**SINGLE PAPER: DIFFERENTIATED INSTRUCTION****Chair**

Alyssa Lauren Grecu, Center for Research on Education and School Development, Germany

**Preparing teachers for differentiating their instruction: A meta-analysis and a multiple-case study**

Rebecca Kahmann, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Mienke Droop, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Ard Lazonder, Radboud University, Netherlands

**Teacher programs for differentiated instruction: a review study**

Berber Langelaan, Hogeschool van Amsterdam, Netherlands; Ron Oostdam, University of Amsterdam, Netherlands; Lisa Gaikhorst, University of Amsterdam, Netherlands; Wouter Smets, Karel de Grote University college, Belgium

**Differentiated students or differentiated instruction?**

Sérgio Gaitas, ISPA-Instituto Universitário / CIE - ISPA (Center for Research in Education), Portugal

**Can differentiated instruction support students' socio-emotional variables?**

Marcela Gerardina Pozas Guajardo, Profesional School of Education, Humboldt-Universität zu Berlin, Germany; Verena Letzel, University of Trier, Germany

Session E: 12

Time: 12:00-13:30

Location: AUTH\_DC1

**SINGLE PAPER: STUDENT AND TEACHER GROWTH MINDSETS****Chair**

Debra Myhill, University of Exeter, United Kingdom

**The rich gets richer: Growth mindsets matter more in affluent contexts**

Ronnel Bornasal King, The Chinese University of Hong Kong, Hong Kong; Faming Wang, The University of Hong Kong, Hong Kong; Shing On Leung, The University of Macau, Macao; Andrew Elliot, University of Rochester, United States

**The effects of growth mindset and emotions on L2 writing performance**

JIAHUAN ZHANG, The University of Hong Kong, China; Choo Mui Cheong, The University of Hong Kong, Hong Kong; Yuan Yao, The Hong Kong Polytechnic University, Hong Kong; Xinhua Zhu, The Hong Kong Polytechnic University, Hong Kong

**How growth mindsets induced by a pedagogical agent can foster learning in primary school**

Konstantinos Michos, University of Zurich, Institute of Education, Switzerland; Sascha Schneider, University of Zurich, Switzerland; Kate Xu, Open Universiteit Nederland, Netherlands

Session E: 13

Time: 12:00-13:30

Location: UOM\_A11

**SINGLE PAPER: CURRICULUM DEVELOPMENT IN HIGHER EDUCATION****Chair**

Eric Schoute, University of Maryland, United States

**Examining a 'throughline' in research-based curricula by researcher-student collaborative inquiries**

Tracy Zou, The Chinese University of Hong Kong, Hong Kong; Tom Barry, University of Bath, United Kingdom; Ka Sing Yu, The University of Hong Kong, Hong Kong; Jetty C. Y. Lee, The University of Hong Kong, Hong Kong; King L. Chow, The Hong Kong University of Science and Technology, Hong Kong; Lily Y. Y. Leung, The Chinese University of Hong Kong, Hong Kong

**Unraveling research competence for professionals: a concept analysis based on a systematic review.**

Lisette Munneke, Utrecht University of Applied Sciences, Netherlands; Pieter Schilder, HU University of Applied Sciences Utrecht, Netherlands; Belinda Ommering, Utrecht University of Applied Sciences, Netherlands; Daan Andriessen, Utrecht University of Applied Sciences, Netherlands

**Co-creation and student-staff partnership in higher education. A scoping review**

Maren Omland, Oslo Metropolitan University, Norway; Frederick A. Reiersen, Oslo Metropolitan University, Norway; Anja Amundrud, University of Oslo, Norway; Hege Hermansen, Oslo Metropolitan University, Norway; Magnus Hontvedt, University of South East Norway, Norway

**Preparing students for peer-led education and their outcomes: A systematic literature review**

Marieke Thurlings, Eindhoven University of Technology, Netherlands; Gardienke Reijmers, Universiteit Utrecht, Netherlands; Karlina Timmers, Universiteit van Amsterdam, Netherlands; Jan van der Veen, Eindhoven School of Education, Netherlands; Pieter de Bordes, Universiteit Utrecht, Netherlands

Session E: 14

Time: 12:00-13:30

Location: UOM\_A07

**SINGLE PAPER: EXAMPLE- AND PROBLEM-BASED LEARNING****Chair**

Ellen Claes, KU Leuven, Belgium

**A Systematic Review on Erroneous Examples**

Marc Rodemer, University of Duisburg-Essen, Germany; Sonja Dieterich, University of Duisburg-Essen, Germany; Stefan Rumann, University of Duisburg-Essen, Germany

**Correct or erroneous examples first? Effects of the order of different example types on learning**

Lukas Wesenberg, Chemnitz University of Technology, Institute for Media Research, Germany; Felix Kriegelstein, Chemnitz University of Technology, Germany; Sebastian Jansen, Chemnitz University of Technology, Faculty of Humanities, Institute for Media Research, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany; Maik Beege, University of Education Freiburg, Germany; Sascha Schneider, University of Zurich, Institute of Education, Germany

**Students' navigation in an open-ended project addressing democracy and citizenship**

Anniken Furberg, University of Oslo, Norway; Sigrid Ernsten, Department of Teacher Education and School Research, University of Oslo, Norway; Kari Anne Rødnes, University of Oslo, Norway

**Effects of Prior Instruction and Feedback on Students' Learning**

Salome Wagner, University of Tübingen, Germany; Leonie Sibley, University of Tübingen, Germany; David Weiler, University of Tübingen, Germany; Jan-Philipp Burde, University of Tübingen, Germany; Katharina Scheiter, University of Potsdam, Germany; Andreas Lachner, University of Tübingen, Germany

Session E: 15

Time: 12:00-13:30

Location: UOM\_A05

**SINGLE PAPER: COOPERATIVE LEARNING, SOCIAL AND MOTIVATIONAL PROCESSES****Chair**

Francisco Peixoto, ISPA - Instituto Universitário | Center for Research in Education, Portugal

**Cooperative Learning in the classroom - A mixed methods study on the quality of implementation**

Vanessa A. Völlinger, Justus-Liebig-Universität Giessen, Germany; Katja Adl-Amini, TU Darmstadt, Germany; Agnes Eckart, Justus-Liebig-University Giessen, Germany

**Solitary Practice and Band Rehearsals: Design and Strategy Use Regarding the Professional Level**

Simon Schmidt, Universität Regensburg, Germany; Hans Gruber, University of Regensburg, Germany

**Exploring the Enactment of Open-Schooling Projects and their Impact on Students' Self-Determination**

Yvoni Pavlou, University of Cyprus, Cyprus; Marios Papaevripidou, University of Cyprus, Cyprus; Georgia Kouti, University of Cyprus, Cyprus; Marilena Savva, University of Cyprus, Cyprus; Pavlos Koulouris, Ellinogermaniki Agogi, Greece; Zacharias Zacharia, University of Cyprus, Cyprus

**Fostering students' autonomous motivation with a societal impact project**

Yuan Yuan Zhu, Maastricht University, FHML, Dept. of Educational Research and Development, Netherlands; Diana Dolmans, Maastricht University, Netherlands; Rashmi Kusrkar, Vrije Universiteit Amsterdam, Netherlands; Leo Koehler, Maastricht University, Faculty of Health, Medicine and Life Sciences, Netherlands; Latifa Abidi, Maastricht University, Faculty of Health, Medicine and Life Sciences, Netherlands; Hans Savelberg, Maastricht University, Faculty of Health, Medicine and Life Sciences, Netherlands

Session E: 16

Time: 12:00-13:30

Location: AUTH\_T102

**SINGLE PAPER: GENDER, MOTIVATION AND STEM CHOICES****Chair**

Alla Hemi, Bar Ilan University, Israel

**Perfectionism and Resilience: The role of Gender**

Athina Voulgari, Aristotle University of Thessaloniki, Greece; Susana Panteliadou, Aristotle University of Thessaloniki, Greece

**Primary-school students' motivational profiles and their connections with gender and achievement**

Anna Rawlings, University of Jyväskylä, Finland; Kati Vasalampi, University of Jyväskylä, Finland

**How Aware Are Teachers Towards Math-gender Stereotype Reinforcing Behavior? A Video Experiment**

Anna-Sophia Dersch, Justus-Liebig-Universität Gießen, Germany; Anke Heyder, Ruhr-University Bochum, Germany; Alexander Eitel, University of Giessen, Germany

**Why do they pursue a major in math and science?: Female preservice teachers' perspective**

Gamze İnan, Boğaziçi University, Faculty of Education, Türkiye; İrfan Erdoğan, Bogazici University, Türkiye

Session E: 17

Time: 12:00-13:30

Location: AUTH\_T202

**SINGLE PAPER: LEARNING DURING COVID-19****Chair**

Signe Pirkko Siklander, University of Oulu, Finland, Finland

**Inclusive school cultures and digital school development processes in Austria in times of COVID-19.**

Ricarda Derler, University of Graz, Austria; Melina Tinnacher, University of Graz, Austria; Heike Wendt, University of Graz, Austria

**Differential Effects of COVID-19 School Closures on Students' Achievement**

Tim Fütterer, University of Tübingen, Germany; Tony Tan, University of Oslo, Norway; Rolf Vegar Olsen, University of Oslo, Norway; Astrid Marie Jorde Sandsør, University of Oslo, Norway; Sigrid Blömeke, University of Oslo, Norway

**Educational interventions for improving literacy to Greek primary school students during COVID-19**

Styliani Tsesmeli, University of Patras, Department of Educational Studies and Social Work, Greece; Ioanna Skarmoutsou, University of Patras, Department of Educational Studies and Social Work, Greece

**"Silent voices" in COVID-19: Students' experiences of wellbeing, learning, social relationships**

Eija Pakarinen, University of Jyväskylä, Finland; Venla Panula, University of Jyväskylä, Finland; Noona Kiuru, University of Jyväskylä, Finland; Sanni Pöysä, University of Jyväskylä, Finland; Niina Junttila, University of Turku, Finland; Matilda Sorkkila, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

Session E: 18

Time: 12:00-13:30

Location: AUTH\_TE2

**SINGLE PAPER: MINORITY AND MIGRANT STUDENTS: WRITING AND LITERACY****Chair**

Isabelle Krummenacher, Abteilung für Schul- und Unterrichtsforschung, Institut für Erziehungswissenschaft, Bern, Switzerland

**How long does it take pupils to acquire Proficiency in English?**

Steve Strand, University of Oxford, United Kingdom; Ariel Lindorff, University of Oxford, United Kingdom

**Effects of feedback on writing: Differences between students with and without migration backgrounds**

Nora Müller, Westfälische Wilhelms-Universität Münster, Germany; Vera Busse, Westfälische Wilhelms-Universität Münster, Germany; Till Utesch, Westfälische Wilhelms-Universität Münster, Germany

**Hoping for linguistic diversity in academic writing**

Ana Costa, University of Lisbon, Linguistics Center and Polytechnic Institute of Setúbal, Portugal

**Literacy and literacy didactics in the context of migration: A systematic literature review**

Olga Kostoula, Private University of Education, Diocese Linz, Austria; Nicole Kronberger, Institute of Education and Psychology, Austria

Session E: 19

Time: 12:00-13:30

Location: AUTH\_DC3

**SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS THROUGH MULTIMEDIA LEARNING****Chair**

Engin Ader, Boğaziçi University, Türkiye

**How does seductive details combine with animated pictures influence students' learning?**

Tiphaine Colliot, CeRCA UMR7295 Université de Poitiers, France; Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France

**Mapping processing and comprehension in learning from video combining trace and recall data.**

Marijn Gijzen, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium

**Effects of Design Decisions of Educational Video Games on Learning and Students' Thoughts**

Ercan TOP, Bolu Abant İzzet Baysal University, Türkiye; Emre GÜNEL, Abant İzzet Baysal University, Türkiye

**A test of a cinematographic principle in learning a first aid procedure from video**

Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Julie Perrin, University of Dijon, LEAD-CNRS, France; Joanna Duval, University of Dijon, LEAD-CNRS, France; Alexandre Benoist, Biomedical Engineering and Innovation Direction, CESITECH, William Morey Hospital, Chalon sur Saone, France; Stéphane Argon, University of Dijon, LEAD-CNRS, France; Stéphanie Javelier, Anesthesia Department, CESITECH, William Morey Hospital, Chalon sur Saone, France

Session E: 20

Time: 12:00-13:30

Location: UOM\_CR

**SINGLE PAPER: EDUCATIONAL POLICY INITIATIVES IN SECONDARY AND HIGHER EDUCATION****Chair**

Jason Chen, College of William and Mary, United States

**Entrepreneurship in school education: policy directions and pedagogical considerations**

Sofia Boutsiouki, University of Macedonia, Greece; Nikolaos Mouratoglou, European Schoolnet, Belgium

**A Delphi Study at secondary schools to identify entrepreneurship education norms**

Sultan Goksen-Olgun, Maastricht University School of Business and Economics, Netherlands; Wim Groot, Maastricht University, Netherlands; Ingrid Wakkee, Amsterdam University of Applied Science, Netherlands; Richard Martina, Amsterdam University of Applied Science, Netherlands

**Roles in teacher teams within higher education: a review**

Belinda Ommering, Utrecht University of Applied Sciences, Netherlands; mieke koesslag-kreunen, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands

**Double First-Class Initiative : An application of performance-based funding at a Chinese university**

Iat Fei Lam, The Chinese University of Hong Kong (CUHK), Hong Kong; Manhong Lai, The Chinese University of Hong Kong, Hong Kong

Session E: 21

Time: 12:00-13:30

Location: UOM\_A13

**SINGLE PAPER: THE COMPLEXITY OF ACADEMIC WRITING****Chair**

Rosalind Horowitz, The University of Texas at San Antonio, United States

**How did School Quality Develop During COVID-19 – Analyses on Educational Inequality**

Christoph Helm, Johannes Kepler University Linz, Austria; Stephan Gerhard Huber, PH Zug, Switzerland

**The Writing-Reading Nexus: Authors and Their Audiences**

Nancy Nelson, Louisiana State University, United States; Kim Skinner, Louisiana State University, United States; Estanislado Barrera, Louisiana State University, United States

**Measuring discovery through writing**

David Galbraith, University of Southampton, United Kingdom; Amy Peters, University of Southampton, United Kingdom; Sophie Hall, University of Southampton, United Kingdom; Veerle Baaijen, CLCG University of Groningen, Netherlands

**Research Writing as a Tool for Doctoral Students' and Early Career Researchers' Development**

Montserrat Castelló, Ramon Llull University, Spain

Session E: 22

Time: 12:00-13:30

Location: UOM\_R09

**SINGLE PAPER: TEACHER LEARNING AND PROFESSIONAL DEVELOPMENT****Chair**

Valerie Margrain, Karlstad University, Sweden

**Investigating teacher learning? A scoping review on the Interconnected Model of Professional Growth**

Elisa Calcagni, Friedrich Schiller University Jena, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Jan van Driel, The University of Melbourne, Australia; Hilary Hollingsworth, Australian Council for Educational Research (ACER), Australia

**Supporting & sharing practitioner learning on a global scale through locally-contextualised inquiry**

Alison Twiner, Hughes Hall, University of Cambridge, United Kingdom; Sara Hennessy, University of Cambridge, United Kingdom; Patrick Carmichael, University of Cambridge, United Kingdom; Peter Dudley, University of Cambridge, United Kingdom; Ying Ji, University of Cambridge, United Kingdom

**The impact of Research Lesson Study on teacher learning patterns**

Maria Vrikki, University of Nicosia, Cyprus; Leonidas Kyriakides, University of Cyprus, Cyprus; Jan Vermunt, Eindhoven University of Technology, Netherlands; Chrissavgi Triantafyllou, National and Kapodistrian University of Athens, Greece; Panayiotis Antoniou, University of Cyprus, Cyprus; Efi Paparistodemou, Cyprus Pedagogical Institute, Cyprus; Maria Anastasou, University of Cyprus, Cyprus

**Supporting Secondary Mathematics Coaches' Learning Through One-on-One Meta-coaching**

Hilda Borko, Stanford University, United States; Marsha Ing, University of California, United States; Michael Jarry-Shore, Boise State University, United States; Thomas Smith, Vanderbilt University, United States

Session E: 23

Time: 12:00-13:30

Location: UOM\_R01

**POSTER PRESENTATION: FOSTERING ROBUST, ECOLOGICALLY-VALID AND SUSTAINABLE APPROACHES TO SELF-REGULATED LEARNING IN SCHOOLS****Chair**

Christian Brandmo, University of Oslo, Norway

**Effects of in-service teacher training on professional competences in self-regulated learning**

Carmen Nadja Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Tabea Daria Eberli, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Amina Rosenthal, University of Applied Sciences Northwestern Switzerland, Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

**Relating Teacher Views of Self-Regulated Learning with Classroom Practices and Students' SRL**

Nancy Perry, University of British Columbia, Canada; Marissa Hall, The University of British Columbia, Canada; Xinke Wan, University of British Columbia, Canada; Martin Dammert, The University of British Columbia, Canada; Hazel Ryan Sheehan, The University of British Columbia, Canada; Lynda Hutchinson, King's University College at the University of Western Ontario, Canada

**Professionalizing teachers on SRL: School counselors' perspectives on barriers and opportunities**

Lies Backers, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**A multi-site video study exploring self-regulation strategies to foster 21st century skills**

Therese Hopfenbeck, University of Melbourne, Australia; Samantha-Kaye Johnston, The University of Oxford, United Kingdom; Joshua McGrane, The University of Melbourne, United Kingdom; Juliet Scott-Barrett, University of Oxford, United Kingdom; Tracey Denton-Calabrese, University of Oxford, United Kingdom

Session E: 24

Time: 12:00-13:30

Location: UOM\_R02

**POSTER PRESENTATION: USING FEEDBACK IN TEACHING AND ASSESSMENT****Chair**

Annika Käck, Stockholm University, Sweden

**A New Measure for Assessing Teacher Education Students' Peer Feedback Beliefs**

Marit Puusepp, University of Tartu, Estonia; Pihel Hunt, University of Tartu, Estonia; Gerli Silm, University of Tartu, Estonia

**Noticing, awareness, modes of cognition: An integrated model for teachers' professional development**

Els Boshuizen, Open University of the Netherlands, Netherlands; Charlotte Eliza Wolff, University of Iceland - School of Education, Iceland; Karel Kreijns, Open University of the Netherlands, Netherlands; Dorothy Duchatelet, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**A scoping review of research on reduced grading**

Dan-Anders Normann, Norwegian University of Science and Technology (NTNU), Norway; Lise Vikan Sandvik, Norwegian University of Science and Technology (NTNU), Norway; Henning Fjørtoft, Norwegian University of Science and Technology (NTNU), Norway

**Students' feedback engagement, feedback perceptions and individual characteristics**

Mona Bassleer, Ghent University, Belgium; Nicolas Dirix, Ghent University, Belgium; Stijn Schelfhout, Ghent University, Belgium; Wouter Duyck, Ghent University, Belgium

**Revealing teachers' conceptualizations of student identity and development: A connection to practice**

Emily Gonzalez, University of Southern California, Rossier School of Education, United States; Christina Kundrak, University of Southern California, United States; Mary Helen Immordino-Yang, University of Southern California, United States

Session E: 25

Time: 12:00-13:30

Location: UOM\_R03

## POSTER PRESENTATION: COLLABORATIVE LEARNING

## Chair

Marjaana Veermans, University of Turku, Finland

**How do groups learn in a virtual space? Didactic and social implications of breakout rooms**

Sabrina Gerth, University College of Teacher Education Tyrol, Austria; Mario Vötsch, University College of Teacher Education Tyrol, Austria; Anja Steiner, University College of Teacher Education Tyrol, Austria; Gerlinde Schwabl, University College of Teacher Education Tyrol, Austria

**A Digitally Enhanced Primary School Mathematic Classroom – A Case-Study**

Frauke Kesting, SCRIPT, Luxembourg; Catalina Lomos, LISER - Luxembourg Institute for Socio Economic Research, Luxembourg; Sibel Telli, Canakkale Onsekiz Mart University (COMU), Turkiye; Undine Seineke, Luxembourg Institute of Socio-Economic Research (LISER), Luxembourg

**The influence of collaborative hybrid learning on students' competence development and interaction**

Sari Pramila-Savukoski, University of Oulu, Finland; Raila Kärrä, University of Oulu, Finland, Finland; Heli-Maria Kuivila, University of Oulu, Finland, Finland; Ashlee Oikarainen, University of Oulu, Finland, Finland; Tiina Susanna Törmänen, University of Oulu, Finland; Jonna Juntunen, University of Oulu, Finland, Finland; Sanna Järvelä, University of Oulu, Finland; Kristina Mikkonen, University of Oulu, Finland, Finland

**International partnership in cooperation for democratic values in primary education**

Natalia Demeshkant, Pedagogical University of Krakow, Poland; Stefanie Schnebel, University of Education Weingarten, Germany; Katarzyna Potyrala, Pedagogical University of Cracow, Poland; Mareike Brehmer, University of Agder, Norway; Hilke Rapp, PH Weingarten, Germany; Aslaug Kristiansen, University of Agder, Norway; Inger Marie Dalehefte, University of Agder, Norway; kristin endresen-maharaj, University of Agder, Norway; Georg Kristoffer Fjalsett, University of Agder, Norway; Marion Visotschnig, Pädagogische Hochschule Weingarten, Germany

**The socio-materiality of learning through Minecraft education during the pandemic: a case study**

Giuseppe Ritella, University of Campania Luigi Vanvitelli, Italy; Ivana Lorusso, University of Foggia, Italy; Maria Beatrice Ligorio, University of Bari, Italy

**Back to the Future: Cooperation as a Forgotten Art During the Pandemic**

Petra Juen, Institut für Praktische Theologie, Fachbereich Religionspädagogik, - didaktik und Katechetik, Austria

Session E: 26

Time: 12:00-13:30

Location: UOM\_R04

## POSTER PRESENTATION: MATHEMATICS AND NUMERACY IN PRIMARY EDUCATION

## Chair

Krzysztof Cipora, Loughborough University, United Kingdom

**Pilot Study for the Validation of the Number Sense Brief for the Brazilian Context**

Luciana Vellinho Corso, Universidade Federal do Rio Grande do Sul (UFRGS), Brazil; Fabiana de Miranda Rocha Luna, Universidade Federal do Rio Grande do Sul, Brazil; Amanda Oliveira Meggiato, Universidade Federal do Rio Grande do Sul, Brazil; RAQUEL WEBER, Universidade Federal do Rio Grande do Sul, Brazil

**The Development of Early Numeracy as a Predictor of Math Skills in Primary School**

Veronique Dierckx, University Utrecht, Netherlands; Bernadette van de Rijt, University Utrecht, Netherlands; Sietske van Viersen, University Utrecht, Netherlands

**The relation between primary school students' adaptive number knowledge and proportional reasoning**

Salla Pehkonen, University of Jyväskylä, Finland; Antti Lehtinen, University of Jyväskylä, Finland; Pasi Nieminen, University of Jyväskylä, Finland; Markus Häikiöniemi, University of Jyväskylä, Finland

**Coding in elementary school mathematics lessons? That works!**

Jens Dennyhard, University of Education Heidelberg, Germany; Saskia Schreiter, University of Education Heidelberg, Germany

**6-year-olds' different ways of reasoning about a larger collection of items**

Anna-Lena Ekdahl, Jönköping University, Sweden

**Developmental trajectories of initial abilities of children according to socioeconomic status**

María Victoria Velasco, Pontificia Universidad Católica de Chile, Chile

Session E: 27

Time: 12:00-13:30

Location: UOM\_A06

## WORKSHOP: A PARTICIPATORY WORKSHOP EXPLORING INSTITUTIONAL GATEKEEPING IN DOCTORAL PROGRAMME ADMISSIONS

**A Participatory Workshop Exploring Institutional Gatekeeping in Doctoral Programme Admissions**

Dangeni Dangeni, Newcastle University, United Kingdom; Sophia Kier-Byfield, University of Warwick, United Kingdom; James Burford, University of Warwick, United Kingdom; Emily Henderson, University of Warwick, United Kingdom; Ahmad Akkad, University of Warwick, United Kingdom

Session E: 28

Time: 12:00-13:30

Location: UOM\_R05

**ICT DEMONSTRATION: MINING DIGITAL LEARNING DATA IN EDUCATION: A STEP-BY-STEP-GUIDE USING WORDPRESS****Mining Digital Learning Data in Education: A Step-by-Step-Guide Using WordPress**

Marvin Roski, Leibniz University of Hannover, Institute for Science Education, Germany; Andreas Nehring, Gottfried Wilhelm Leibniz Universität Hannover, Germany

Session F: 1

Time: 14:45-16:15

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: INVESTIGATING TECHNOLOGY INTEGRATION IN LEARNING ACTIVITIES THROUGH THE LENS OF THE ICAP MODEL****Chair**

Dominik Petko, University of Zurich, Switzerland

**Organiser**

Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland

**Discussant**

Paolo Raviolo, Ecampus University (IT), Italy

**Learning Activities in Technology-enhanced Learning: A Systematic Review of Meta-Analyses**

Michael Sailer, LMU Munich, Germany

**Integration of Technology in Interactive, Constructive, Active and Passive Learning Activities**

Chiara Antonietti, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland

**Exploring Technology-enhanced Learning Activities in Higher Education and their Effects on Students**

Christina Wekerle, University of Augsburg, Germany

**How to Promote High-Quality Technology-Enhanced Teaching Through Teacher Professional Development?**

Tim Fütterer, University of Tübingen, Germany

ANNOTATIONS:  
SIG 6 INVITED SYMPOSIUM

Session F: 2

Time: 14:45-16:15

Location: UOM\_CH

**INVITED SYMPOSIUM: RELIGIONS AND WORLDVIEWS IN EDUCATION PROVIDING HOPE OF SOCIAL SUSTAINABILITY****Chair**

Martin Ubani, University of Eastern Finland, Finland

**Organisers**

Martin Ubani, University of Eastern Finland, Finland; Alexander Unser, TU Dortmund University, Germany; Sarah Delling, University Siegen, Germany

**Discussant**

VASILIKI MITROPOULOU, Aristotle University Thessaloniki, Greece

**Theologies, Religion and Literacy: Towards Socially Sustainable Religious Education?**

Martin Ubani, University of Eastern Finland, Finland

**A digital response-tool to grasp personal orientations underlying sustainability conflicts**

Stefan Altmeyer, Johannes Gutenberg University Mainz, Germany

**Diversity as an Element of Social Cohesion – the Findings of an Empirical Research**

Eszter Kodacsy-Simon, Lutheran Theological University in Budapest, Hungary; Etelka Seres-Busi, Lutheran Theological University in Budapest, Hungary

**Existential Resilience and Well-being, Hope and Meaning: Cultivating Existential Sustainability**

Arniika Kuusisto, University of Helsinki, Finland

ANNOTATIONS:  
SIG 19 INVITED SYMPOSIUM

Session F: 3

Time: 14:45-16:15

Location: UOM\_R08

**SYMPOSIUM: EXAMINING THE VALIDITY OF STANDARDIZED APPROACHES TO MEASURING TEACHING QUALITY****Chair**

Mark White, University of Oslo, Norway

**Discussant**

Anna-Katharina Praetorius, University of Zurich, Switzerland

**Students' Perceptions of Teaching Quality in In-person Classrooms and Distance Education**

Ann-Kathrin Jaekel, University of Tuebingen, Germany; Richard Goellner, University of Tuebingen, Germany

**Student Perceptions as Indicator of Teaching Quality: A Report from Nordic Classrooms**

Berglind Gisladdottir, University of Iceland School of Education, Iceland; Michael Tengberg, Karlstad University, Sweden; Astrid Roe, University of Oslo, Faculty of Education, Norway; Anders Stig Christensen, UCL University College, Denmark, Denmark

**Classroom Observation Ratings of Teaching Quality – An Investigation of a Teacher Training**

Tosca Daltoè, University of Tübingen, Germany; Julia Maier, University of Tübingen, Germany; Evelin Ruth-Herbein, University of Tübingen, Germany; Richard Goellner, University of Tuebingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany

**Evaluating the Robustness of Observational Studies' Results to Rater Error with a Linking Data Set**

Mark White, University of Oslo, Norway

Session F: 4

Time: 14:45-16:15

Location: AUTH\_TE2

**SYMPOSIUM: BRINGING JOURNAL WRITING, LEARNING BY EXPLAINING, PEER-TUTORING IN A DIALOGUE****Chair**

Ai Miyamoto, University of Freiburg, Germany

**Organiser**

Ai Miyamoto, University of Freiburg, Germany

**Discussant**

Vincent Hoogerheide, Utrecht University, Netherlands

**Digital journal writing: Cognitive, but not metacognitive prompts enhance comprehension and transfer**

Veit Kubik, University of Würzburg, Germany; Markus H. Hefter, Bielefeld University, Germany; Matthias Nückles, University of Freiburg, Germany; Kirsten Berthold, University of Bielefeld, Germany

**Writing or speaking? The role of medium in the effectiveness of learning journals**

Florian Luft, University of Freiburg, Germany; Ai Miyamoto, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

**The role of prompts and medium in the effects of learning by explaining on students' comprehension**

Ai Miyamoto, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

**Effects of a high school peer-tutoring program on students' understanding and learning strategy use**

Tatsushi Fukaya, Hiroshima University, Japan

Session F: 5

Time: 14:45-16:15

Location: AUTH\_DC2

**SYMPOSIUM: CHALLENGING THE NARROW DEFINITIONS OF DIVERSE STUDENTS' SENSE OF BELONGING IN HIGHER EDUCATION****Chair**

Pieter van Lamoen, Erasmus University Rotterdam, the Netherlands, Netherlands

**Organiser**

Aike Dias-Broens, Erasmus University Rotterdam, Netherlands

**Discussant**

Kim Ouwehand, Erasmus University Rotterdam, Netherlands

**A systematic literature review about the sense of belonging of diverse students in higher education**

Aike Dias-Broens, Erasmus University Rotterdam, Netherlands; Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Sabne Severiens, Erasmus University Rotterdam, Netherlands

**An action research approach to challenging narrow conceptions of belonging amongst students**

David Gilani, Middlesex University, United Kingdom

**Mature student belonging in teacher education: we're fine because you don't feel you are by yourself**

Karina Ryan, Mary Immaculate College, Ireland

**Student sense of belonging and early dropout – how are they related?**

Claudia Gomes, Rotterdam University of Applied Sciences, Netherlands

Session F: 6

Time: 14:45-16:15

Location: AUTH\_DC1

**SYMPOSIUM: RESEARCH ON PREDICTORS OF GRADE RETENTION IN EUROPE: STATE OF THE ART****Chair**

Mieke Goos, KULeuven + UCLL, Belgium

**Discussant**

Barbara Belfi, Maastricht University School of Business and Economics, Netherlands

**Do parental educational aspirations protect against grade retention?**

Florian Klapproth, Medical School Berlin, Germany; Fabian Meissner, Medical School Berlin, Germany; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg

**Which teacher, class and school characteristics predict Flemish teachers' grade retention beliefs?**

Mieke Goos, KULeuven + UCLL, Belgium; Elke Londers, UCLL, Belgium

**Are teacher beliefs about interventions promoting student success related with grade retention?**

Natalie de Nóbrega dos Santos, ISPA-Instituto Universitário, Portugal; Vera Monteiro, ISPA- Instituto Universitário, Portugal

**The predictors of grade retention in Europe: A systematic review**

Joana Pipa, ISPA - Instituto Universitário | Center for Research in Education, Portugal; Sérgio Gaitas, ISPA-Instituto Universitário / CIE - ISPA (Center for Research in Education), Portugal; Francisco Peixoto, ISPA - Instituto Universitário | Center for Research in Education, Portugal



Session F: 7

Time: 14:45-16:15

Location: AUTH\_T002

**SYMPOSIUM: TEACHER INTERVENTIONS ON LEARNING INTERACTION IN THE CLASSROOM****Chair**

Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Organiser**

Sigrun K. Ertesvag, University of Stavanger, Norway

**Discussant**

Pamela Sammons (Greet), University of Oxford, United Kingdom

**Beginning teacher students' understandings and expressions of classroom management**

Karin Street, Western Norway University of Applied Sciences, Norway; Sigrun K. Ertesvag, University of Stavanger, Norway; Siv Måseidvåg Gamlem, Volda University College, Norway; Linda Moen Rebni, Western Norway University of Applied Sciences, Norway; Randi M. Solvik, University of Stavanger, Norway; Grete Sørensen Vaaland, University of Stavanger, Norway

**Enhancing interaction and assessment skills with intervention program in teacher training in Finland**

Sanni Pöysä, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Leadership for learning – improving teaching among Swedish in-service teachers**

Marcus Samuelsson, Department of Behavioural science and learning, Sweden; Anja Thorsten, Department of Behavioural Sciences and Learning, Sweden

**Teacher stress and learning interaction quality as predictors of improvement in student engagement**

Sigrun K. Ertesvag, University of Stavanger, Norway; Grete Sørensen Vaaland, University of Stavanger, Norway

Session F: 8

Time: 14:45-16:15

Location: UOM\_CR

**SYMPOSIUM: CRITICAL EVALUATION OF EVIDENCE AND SOURCES WHEN LEARNING FROM MULTIPLE DOCUMENTS****Chair**

Marc Stadler, Ruhr-University Bochum, Institute of Educational Science, Germany

**Organiser**

Marc Stadler, Ruhr-University Bochum, Institute of Educational Science, Germany

**Discussant**

Clark Chinn, Rutgers University, United States

**Credibility Evaluation Profiles of Students Representing Primary and Secondary Education**

Riikka Anttonen, Tampere University, Finland; Laura Kanninen, Tampere University, Finland; Carita Kiili, Tampere University, Finland

**How do pre-service teachers use multiple documents depending on their epistemic perspectives?**

Martin Greisel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

**Scaffolding Students' Source Trustworthiness Evaluation**

Danna Tal Savir, University of Haifa, Israel; Sarit Barzilai, University of Haifa, Israel; Fayez Abed, University of Haifa, Faculty of Education, Israel; Shiri Mor-Hagani, University of Haifa, Faculty of Education, Israel

**Can 5G radiation kill birds? Promoting the use of evaluation strategies against misinformation**

Philipp Marten, Ruhr University Bochum, Germany; Sandra Aßmann, Ruhr-University Bochum, Institute of Educational Sciences, Germany; Marc Stadler, Ruhr-University Bochum, Institute of Educational Science, Germany

Session F: 9

Time: 14:45-16:15

Location: UOM\_A03

**SINGLE PAPER: CURRICULUM DEVELOPMENT FOR SCIENCE EDUCATION****Chair**

Merle-Sophie Thielmann, University of Mannheim, Germany

**STEM learning experiences as boundary objects? The Hong Kong case**

Ka Lok Cheng, The University of Hong Kong, Hong Kong

**Towards Defining, Assessing and Modelling Competency Levels in the Field of Stoichiometry**

Krause Alexander, Gottfried Wilhelm Leibniz Universität Hannover, Germany; Andreas Nehring, Gottfried Wilhelm Leibniz Universität Hannover, Germany

**Designing Social Justice Oriented Science Curricula Towards Consequential Learning**

Ravit Duncan, Rutgers University, United States; Edna Tan, UNC Greensboro, United States; Rishi Krishnamoorthy, PSU, United States; Tasha Austin, Buffalo State College, United States; Frieda Reischman, Concord, United States; Sugat Dabholkar, GSE-Rutgers University, United States; Ti'Era D. Worsley, University of South Carolina-Greensboro, United States; Megumi Asada, Rutgers University, United States

**Space for All: A Multinational Survey of Astronomy Education**

Christine Hirst Bernhardt, University of Maryland, College Park, United States; Janelle M. Bailey, Temple University, United States

Session F: 10

Time: 14:45-16:15

Location: AUTH\_T102

**SINGLE PAPER: ANXIETY, STRESS AND RESILIENCE IN STUDENTS****Chair**

Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Resilience trajectories despite IPV experiences and the influence of protective factors**

Dilan Aksoy, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Céline Favre, PH FHNW, Institut Forschung und Entwicklung, IFE, Switzerland; Celeste Simões, University of Lisbon, Faculty of Human Kinetics, Portugal; Petra Sidler, School of Education, FHNW, Switzerland

**Resilience in adolescence over time: A Three-Wave Latent Transition Analysis on Violence-Resilience**

Wassilis Kassis, School of Education, FHNW, Switzerland; Céline Anne Favre, School of Education, FHNW, Switzerland; Dilan Aksoy, School of Education, FHNW, Switzerland

**Socio-emotional violence resilience – a two wave latent transition analysis**

Céline Favre, PH FHNW, Institut Forschung und Entwicklung, IFE, Switzerland; Dilan Aksoy, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Wassilis Kassis, School of Education, FHNW, Switzerland

**Mediation of interpersonal relationships in school stress and student academic achievement.**

Olga Cuadros Jiménez, Universidad Católica Silva Henríquez, Chile; Benito León del Barco, Universidad de Extremadura, Spain

Session F: 11

Time: 14:45-16:15

Location: AUTH\_DC3

**SINGLE PAPER: PLAY IN EARLY CHILDHOOD EDUCATION****Chair**

Athena Daniilidou, University of Macedonia, Greece

**Analysis of Teacher-Child Interactions in Tablet-Supported Episodes During Constructive Play**

Jossen Priska, University of Teacher Education Lucerne (PH Luzern), Switzerland; Ueli Thomas Studhalter, University of Teacher Education Lucerne (PH Luzern), Switzerland; Marco Seeli, University of Teacher Education Lucerne (PH Luzern), Switzerland; Annette Tettenborn, University of Teacher Education of Lucerne, Switzerland

**Exploring Polyadic Sustained Shared Thinking-Interactions during Free Play, Meal and Tidying Up**

Alexandra Waibel, University of Teacher Education, St. Gallen, Switzerland, Switzerland

**The technological landscapes with IoT toys early childhood education in Norway**

Maria Dardanou, University of Tromsø, Norway

Session F: 12

Time: 14:45-16:15

Location: UOM\_R09

**SINGLE PAPER: EDUCATIONAL TRACKING, SCHOOL TRANSITIONS AND SCHOOL DROPOUT: SOCIAL PROCESSES****Chair**

Andreas Gegenfurtner, University of Augsburg, Germany

**Stereotypes on Educational Tracks Among Secondary School Students in Flanders (Belgium)**

Margo Vandenbroeck, KU LEUVEN (BE 0419.052.173), Belgium; Jonas Dockx, KU LEUVEN, Belgium; Rianne Janssen, KU LEUVEN, Belgium

**Delayed tracking and the social meanings of educational tracks: an ethnographic study**

Pomme van de Weerd, Utrecht University, Netherlands

**Social support stability in school transitions: Associations with truancy and completing education**

Tuomo Virtanen, University of Jyväskylä, Finland; Kati Vasalampi, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Jenni Pelkonen, University of Jyväskylä, Finland; Anna-Maija Poikkeus, University of Jyväskylä, Finland

**School dropout: Investigating pathways of academic achievement and psychosocial learning environment**

Maren Tvedt, University of Stavanger, Norway; Edvin Bru, University of Stavanger, Norway

Session F: 13

Time: 14:45-16:15

Location: UOM\_A13

**SINGLE PAPER: ENVIRONMENTAL EDUCATION AND CLIMATE CHANGE****Chair**

Mari Nygård, NTNU, Norway

**Friluftsliv in Teacher Education – a step towards Environmental Awareness**

Helga Aadland, Western Norway University of Applied Sciences, Faculty of Education, Arts and Sports, Norway; Joergen Nerland, Western Norway University of Applied Sciences, Norway; Trond Egil Arnesen, Western Norway University of Applied Sciences, Norway

**Climate change discourses on social media: Clarifying the potential of relevant literacies**

Catharina Philine Pfeiffer, Leibniz University Hanover, Germany; Stefanie Dr. Lenzer, Leibniz University of Hannover, Institute for Science Education, Germany; Andreas Nehring, Gottfried Wilhelm Leibniz Universität Hannover, Germany

**Elementary students' understanding and changing discourse about climate change**

Gertraud Benke, Klagenfurt University, Austria

**Teaching psychology with science-fiction at the Bachelor level**

Laure KLOETZER, Institute of Psychology &amp; Education, University of Neuchâtel, Switzerland

Session F: 14

Time: 14:45-16:15

Location: AUTH\_TE1

**SINGLE PAPER: PROMOTING CHILDREN'S SELF-REGULATION: INDIVIDUAL, PARENTAL AND TEACHER FACTORS****Chair**

Daniel Mujs, Queen's University Belfast, United Kingdom

**Maternal contingency and their relation to preschoolers' problem-solving and strategic behaviors**

Maren Stern, Heidelberg University, Germany; Leonie Köllbichler, University of Heidelberg, Germany; Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany

**The Role of Kindergartners Private Practice in Self-Regulation and Phonological Awareness in English**

Ana Paula S. Loures-Elias, Interdependent Researcher, Portugal; Marília Mendes Ferreira, University of Sao Paulo, Brazil

**Regulating Emotions to Improve the Quality of Teaching and Learning in the Early Years**

Erika Galea, University College London, Institute of Education, Malta

**Do Primary School Teachers Know How Accurately Their Students Monitor and Regulate Their Learning?**

Tamara Van Gog, Utrecht University, Netherlands; Sophie Oudman, Utrecht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Mariette van Loon, University of Zurich, Switzerland

Session F: 15

Time: 14:45-16:15

Location: AUTH\_T202

**SINGLE PAPER: STUDENTS' INTEREST AND CURIOSITY****Chair**

Morane Stevens, KU Leuven - University of Leuven, Belgium

**How intellectual curiosity and interest manifest in information seeking and knowledge attainment**

Aki Schumacher, Hector Research Institute of Education Sciences and Psychology, University of Tübingen, Germany; Yvonne Kammerer, Stuttgart Media University, Stuttgart, Germany, Germany; Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Steffen Gottschling, Leibniz-Institut für Wissensmedien (IWM), Germany; Tobias Appel, Hector Research Institute of Education Sciences and Psychology, Germany; Lisa Bardach, University of Tübingen, Germany

**The associations between children's trait and state curiosity**

Jamie Jirout, University of Virginia, United States; Natalie Evans, University of Virginia, United States; Virginia Vitiello, University of Virginia, United States; Sharon Zumbunn, Virginia Commonwealth University, United States

**Integrating two lines of research on how children's state curiosity relates to their learning**

Tessa van Schijndel, University of Amsterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands

**What do Chinese students perceive and experience about curiosity in schools?**

Xin Tang, Shanghai Jiao Tong University, China; Huier Zheng, University College London, United Kingdom

Session F: 16

Time: 14:45-16:15

Location: UOM\_A10

**SINGLE PAPER: PARENTAL INVOLVEMENT IN LITERACY DEVELOPMENT****Chair**

Wilfried Admiraal, Oslo Metropolitan University, Norway

**Idioms exposure in shared book reading and child vocabulary growth: An exploratory study**

JUNYI YANG, University of Oslo, Norway; Vibeke Grover, University of Oslo, Norway; Joshua Lawrence, University of Oslo, Norway

**Parent-Child Picture Book Co-creations as a Blessing in Uncertain Times**

Wai Ming Cheung, The University of Hong Kong, Hong Kong; Serene Chan, The University of Hong Kong, Hong Kong

**Like mother/father, like daughter/son? Comparing caregivers shared reading to kindergarteners**

Roel van Steensel, Erasmus University Rotterdam, Netherlands

**Patterns of infants' home literacy environment: threshold effects of family social risk factors**

Sabine Blaurock, Otto-Friedrich-University of Bamberg, Germany; Luisa Prokupek, Otto-Friedrich-University of Bamberg, Germany; Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

Session F: 17

Time: 14:45-16:15

Location: UOM\_A02

**SINGLE PAPER: USING EYE TRACKING FOR STUDENTS WITH AND WITHOUT LEARNING DIFFICULTIES****Chair**

Antti Lehtinen, University of Jyväskylä, Finland

**Strategies of students with learning difficulties in math number line tasks: An eye-tracking study**

Anna Lisa Simon, Universität zu Köln/ University of Cologne, Germany; Maïke Schindler, Universität zu Köln/ University of Cologne, Germany

**Sublexical Processing in Finnish Typical and Compromised Reading Development**

Lisa Hintermeier, University of Jyväskylä, Finland; Mikko Aro, University of Jyväskylä, Finland

**Designing accessible assessment tasks: Impacts on student performance and engagement**

Callula Killingly, Queensland University of Technology, Australia; Linda Graham, Queensland University of Technology, Australia; Sonia White, Queensland University of Technology, Australia; Naomi Sweller, Macquarie University, Australia

**Comparing Continuous and Discretized Tape Diagrams of Fractions: An Eye-Tracking Study with Adults**

Sabrina Schwarzmeier, Technical University of Munich, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Martha Wagner Alibali, University of Wisconsin-Madison, United States; Vijay Marupudi, Georgia Institute of Technology, United States

Session F: 18

Time: 14:45-16:15

Location: UOM\_R03

**POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT****Chair**

Julia Klug, PH Salzburg, Austria

**Professional Knowledge in Pre-Service Teacher Education in Social Sciences: the SoWi-L study**

Sabine Manzel, Universität Duisburg-Essen, Cote D'Ivoire; Dorothee Gronostay, TU Dortmund University, Germany

**Challenges of teacher educators in integrating research competence in graduation assignments**

Belinda Ommering, Utrecht University of Applied Sciences, Netherlands; Marloes van Dijk, Marnix Academie (PABO), Netherlands; Lisette Munneke, Utrecht University of Applied Sciences, Netherlands; Marjolijn Peltenburg, Marnix Academie, Netherlands; Miranda Timmermans, Marnix University of applied sciences, Netherlands

**What quality features make online professional development for teachers effective?**

André Meyer, University of Potsdam, Germany; Marc Kleinknecht, Leuphana University Lueneburg, Germany; Dirk Richter, University of Potsdam, Germany

**Teacher Design Teams in secondary vocational education**

Tina Gryson, Ghent University, Belgium; Katrien Strubbe, Ghent University, Belgium; Tony Valcke, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**Social networks and key moments of student teachers' learning during internship**

Marco Galle, University of Teacher Education Lucerne, Switzerland; Annelies Kreis, University of Teacher Education Lucerne (PH Luzern), Switzerland; Sonja Hiebler, University of Teacher Education Lucerne (PH Luzern), Switzerland; Esther Brunner, Thurgau University of Teacher Education, Kreuzlingen (PHTG), Switzerland; Sanja Stankovic, University of Teacher Education Thurgau, Switzerland

**Virtual Reality as a Catalyst in the Transition Towards Student-Centred Methods and Beliefs**

Sebastien Wall-Lacelle, University of Montreal, Canada; Bruno Poellhuber, University of Montreal, Canada; Christine Marquis, Cégep de Saint-Jérôme, Canada; Normand Roy, University of Montreal, Canada

**Teachers' professional growth in teaching social scientific reasoning**

Thomas Klijnstra, University of Amsterdam, Netherlands; Gerhard Stoel, Radboud University, Nijmegen, Netherlands; Geerte Savenije, University of Amsterdam, Netherlands; Gerard Ruijs, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

Session F: 19

Time: 14:45-16:15

Location: UOM\_R01

**POSTER PRESENTATION: SELF-REGULATED LEARNING AND BEHAVIOUR****Chair**

Ingvill Rasmussen, University of Oslo, Norway

**Developing Self-Regulation as a Core Competency of Social-Emotional Learning: Action Research**

Ronen Kasperski, Gordon College of Education, Israel; Merav Hemi, Gordon Academic College, Israel; Ditz Maskit, Gordon Academic College, Israel

**SRL Practices Growth Following Authentic Experience Program: One Teacher's Long Term Case Study**

Orna Heaysman, Hemdat College of Education, Israel; Bracha Kramarski, Bar-Ilan University, Israel

**Enhancing student self-regulation through programmatic assessment**

Niels Bohnen, HAS University of Applied Science, Netherlands; Suzan van Ierland, HAS University of Applied Sciences, Netherlands

**Development of metacognitive monitoring in primary school and its association with achievement**

Elien Bellon, KU Leuven, Belgium; Wim Fias, Ghent University, Belgium; Bert De Smedt, KU Leuven, Belgium

**First-Graders' Persistence of Overconfidence Despite Feedback**

Kristin Kolloff, University of Bern, Switzerland

**Pre-service teachers' self-regulated learning skills and skills to scaffold self-regulated learning**

Piia Naykki, University of Jyväskylä, Finland; Laura Hirsto, University of Eastern Finland, Finland; Marjaana Veermans, University of Turku, Finland

Session F: 20

Time: 14:45-16:15

Location: UOM\_R02

**POSTER PRESENTATION: VOCATIONAL AND WORKPLACE LEARNING****Chair**

Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Antecedents and Effects of Boredom during Classroom Instruction at Vocational Schools**

Katrin Rehr, Paris - Lodron University Salzburg, Austria

**Using desktop virtual reality simulation in nursing education: a cluster randomized controlled trial**

Minna Ruoranen, University of Jyväskylä, Finland; Ville Heilala, University of Jyväskylä, Finland; Jaana Mäkelä, JAMK University of Applied Sciences, Finland; Jeri Varjosalo, University of Jyväskylä, Finland; Paavo Rätty, University of Jyväskylä, Finland; Katriina Sipiläinen, University of Jyväskylä, Finland; Toni Pekkola, JAMK University of Applied Sciences, Finland; Tommi Kärkkäinen, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland

**Justifying the diploma decision differently: how do teacher teams design their new assessment plan?**

Judith Gulikers, Wageningen University, Netherlands; Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands

**Developing Relational Work as a Design Tool in activities with health professionals**

Koula Charitonos, The Open university UK, United Kingdom; Littlejohn Allison, University College London, United Kingdom; Saraswati Dawadi, The Open University, United Kingdom, United Kingdom; Abhinav Vaidya, Public Health Research Development Nepal / Kathmandu Medical College, Nepal; Santosi Giri, Public Health Research Development Nepal, Nepal; Alex Owusu-Ofori, Kwame Nkrumah University Of Science and Technology, Ghana; Fereshte Goshtasbpour, The Open University, United Kingdom, United Kingdom

Session F: 21

Time: 14:45-16:15

Location: UOM\_R04

**POSTER PRESENTATION: MOTIVATION, INTEREST AND ACHIEVEMENT****Chair**

Annabel Watson, University of Exeter, United Kingdom

**The development of math competence and its relation to math interest**

Triinu Kilp-Kabel, Tallinn University, Estonia

**Value and Utility: What Students Learn and Transfer from a Graduate Motivation Course**

BOBBY HOFFMAN, University of Central Florida, United States

**Interests and motivation in secondary education in Flanders**

Merel Dutry, Ghent University, Belgium; Laura de Ruijter, Ghent University, Belgium; Nicolas Dirix, Ghent University, Belgium; Stijn Schelthout, Ghent University, Belgium; Wouter Duyck, Ghent University, Belgium

**Promoting interest in high school science among Palestinian students in East Jerusalem**

Mohamed Amine Mahhou, University of Quebec in Montreal, Canada; Olivier Arvisais, Université du Québec à Montréal (UQAM), Canada; Patrice Potvin, Université du Québec à Montréal, Canada

**A Study on the Effectiveness of Encouragement from Friends in Recoverable Failure Situations**

Maki Nakamura, Kagoshima University, Japan; Kumiko Yoshitake, Nagasaki Junshin Catholic University, Japan; Maori Urakawa, Nagasaki Junshin Catholic University, Japan

**The effects of cognitive and noncognitive skills on achievement in higher education: SEM analysis**

Sofie Van Cauwenberghe, Ghent University, Belgium; Nicolas Dirix, Ghent University, Belgium; Stijn Schelthout, Ghent University, Belgium; Wouter Duyck, Ghent University, Belgium

**Epistemic Beliefs and Interest as Predictors of Student Teachers' Attitudes towards Deep Learning**

Christian Brandmo, University of Oslo, Norway; Helge I. Stromso, University of Oslo, Norway; Øistein Anmarkrud, University of Oslo, Norway; Leila Ferguson, Kristiania University College, Norway; Ivar Bråten, University of Oslo, Norway

Session F: 22

Time: 14:45-16:15

Location: UOM\_GYM

**ROUNDTABLE: EYE TRACKING IN INSTRUCTION AND ASSESSMENT****Chair**

Jimmy van Rijt, Tilburg University, Netherlands

**Teaching Visual Problem-Solving: Understanding how Experts Transfer Visual Expertise to Novices**

Christine Nooijen, Erasmus University Rotterdam, Netherlands

**Investigating pre-service teachers' sense-making of educational dashboards using multichannel data**

Clara Schumacher, Humboldt Universität zu Berlin, Germany; Roger Azevedo, University of Central Florida, United States; Dirk Ifenthaler, University of Mannheim, Germany

**Using Multimodal Data to Diagnose Probabilistic Misconceptions via an Online Diagnostic Tool**

Daryn Dever, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

Session F: 23

Time: 14:45-16:15

Location: UOM\_A04

**WORKSHOP: REINVIGORATING READING AS AN IMAGINATIVE, VITAL EXPERIENCE FOR YOUNG PEOPLE****Reinvigorating reading as an imaginative, vital experience for young people**

Amanda McGraw, Federation University Australia, Australia

Session F: 24

Time: 14:45-16:15

Location: UOM\_R05

**WORKSHOP: BUILDING BRIDGES BETWEEN RESEARCH AND SCHOOLS: FEEDBACK TO PRIMARY EDUCATION TEACHERS ON HANDWRITING****Building bridges between research and schools: Feedback to primary education teachers on handwriting**

Irene Ibarra, University of the Basque Country, Spain; Asuncion Martinez-Arbelaz, University of the Basque Country, UPV/EHU, Q 4818001B, Spain; Jose Maria Arriola, University of the Basque Country, Spain

Session F: 25

Time: 14:45-16:15

Location: UOM\_A07

**WORKSHOP: KNOWING YOUR ABCS: ASSET BASED COMMUNICATION FOR ACTIONABLE LEARNING INTERVENTIONS****Knowing Your ABCs: Asset Based Communication for Actionable Learning Interventions**

Angela Stewart, University of Pittsburgh, United States; LuEttaMae Lawrence, Utah State University, United States; Nikki Lobczowski, McGill University, Canada; Stephen Hutt, University of Denver, United States

Session G: 1

Time: 17:00-18:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: PHASES OF INQUIRY IN PRACTICE: CONTEXTS AND VARIATIONS****Chair**

ANASTASIOS CHOVDARDAS, University of Cyprus, Greece

**Organisers**

Koen Veermans, University of Turku, Finland; Valentina Nachtigall, Ruhr University Bochum, Germany

**Discussant**

Margus Pedaste, University of Tartu, Estonia

**Problematising a linear conceptualization of inquiry learning**

ANASTASIOS CHOVDARDAS, University of Cyprus, Greece

**Mathematical Modelling With Hands-on Experimentation as a Possibility for Inquiry Learning**

Ramona Hagenkötter, Ruhr-University Bochum, Germany; Valentina Nachtigall, Ruhr University Bochum, Germany; Katrin Rolka, Ruhr University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany

**Enrichment for talented students: Scientific inquiry competencies in primary schools**

Ulrich Trautwein, University of Tübingen, Germany

**Refining Phases of Inquiry: bridging between model and practice**

Koen Veermans, University of Turku, Finland; Antti Lehtinen, University of Jyväskylä, Finland; Tomi Jaakkola, Tampere University, Finland; Wouter Joolingen, Utrecht University, Netherlands

ANNOTATIONS:  
SIG 20 INVITED SYMPOSIUM

Session G: 2

Time: 17:00-18:30

Location: UOM\_CH

**SYMPOSIUM: UNDERSTANDING AND OPTIMIZING EFFECTS OF RETRIEVAL PRACTICE IN EDUCATION****Chairs**

Niklas Obergassel, Ruhr University Bochum, Germany; Sterre Ruitenburg, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Organisers**

Gino Camp, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Julian Roelle, Ruhr University Bochum, Germany

**Discussant**

Vered Halamish, Bar-Ilan University, Israel

**Effects of Retrieval Practice and Summarization on Retention and Comprehension in Primary Education**

fieke ophuis, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Lucia Rozendal, Open University of the Netherlands, Netherlands; Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands; Gino Camp, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Worked-Examples and Retrieval Practice in Primary School Students' Mathematical Problem-Solving**

Sterre Ruitenburg, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Gino Camp, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Kevin Ackermans, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Paul Kirschner, kirschner-ED / Open Universiteit, Department of Online Learning and Instruction, Netherlands; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Benefits of Retrieval Practice with Stepwise Multiple-Choice Questions: A Study in Primary Education**

Gesa van den Broek, Utrecht University, Netherlands; Gerard Hoogenhout, Utrecht University, Netherlands; Laurie Kist, Utrecht University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Effects of Combining Retrieval Practice and Generative Learning Tasks**

Niklas Obergassel, Ruhr University Bochum, Germany; Alexander Renkl, University of Freiburg, Germany; Tino Endres, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany; Shana Carpenter, Iowa State University, United States; Julian Roelle, Ruhr University Bochum, Germany

Session G: 3

Time: 17:00-18:30

Location: AUTH\_DC3

**SYMPOSIUM: TEACHER COMPETENCE TO SEE AND ENGAGE IN MATHEMATICAL THOUGHT WITH THEIR PRESCHOOLERS****Chair**

Simone Dunekacke, Freie Universität Berlin, Germany

**Organisers**

Joke Torbeyns, KU Leuven, Belgium; Simone Dunekacke, Freie Universität Berlin, Germany

**Discussant**

Esther Brunner, Thurgau University of Teacher Education, Kreuzlingen (PHTG), Switzerland

**Preschool teacher competencies when sharing a picture book in view of mathematical development**

Joke Torbeyns, KU Leuven, Belgium; Emke Op 't Eynde, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**Pre-service EC teacher's situation-specific skills: An insight in quantity and quality**

Simone Dunekacke, Freie Universität Berlin, Germany; Lisa Starcke, Freie Universität Berlin, Germany; Julia Barenthien, Universität Hamburg, Germany; Mirjam Steffensky, Universität Hamburg, Germany; Aiso Heinze, Leibniz Institute for Science and Mathematics Education, Germany

**Early childhood teachers' competence to identify mathematics in picture books**

Iliada Elia, University of Cyprus, Cyprus; Van den Heuvel-Panhuizen Van den Heuvel-Panhuizen, Utrecht University, Netherlands &amp; Nord University, Norway, Norway; Eleni Deliyianni, Cyprus Ministry of Education, Sports and Youth, Cyprus

**Teachers' performance and toddlers' numerical learning opportunities when reading picture books**

Camilla Björklund, University of Gothenburg, Sweden; Hanna Palmér, Linnaeus University, Sweden

Session G: 4

Time: 17:00-18:30

Location: UOM\_A02

**SYMPOSIUM: THE EMERGENCE OF CREATIVITY WITHIN AND BETWEEN INDIVIDUALS AND ITS EDUCATIONAL IMPLICATIONS****Chair**

Evelyn Kroesbergen, Radboud University, Netherlands

**Organisers**

Honghong Bai, Tsinghua University, China; Kim van Broekhoven, Erasmus University Rotterdam, Netherlands

**Discussant**

Mare van Hooijdonk, Radboud University Nijmegen, Netherlands

**Creativity in dialogues: Parents vs. strangers, who can better support idea generation in children?**

Honghong Bai, Tsinghua University, China; Luk Shu Chan, Faculty of Education, University of Hong Kong, Hong Kong; Hetao Zhang, School of Education and Information Studies, University of California, United States; Li Shang, School of Education and Information Studies, University of California, United States; Stella Christie, Tsinghua University, China

**Types of talk in student teams: Enabling or stifling creative synergy in teams?**

Kim van Broekhoven, Erasmus University Rotterdam, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands; Ming Ming Chiu, Department of Educational Studies, Purdue University, Hong Kong

**The effect of reflective debriefs on team behavior during creative problem solving**

Roni Reiter-Palmon, University of Nebraska, United States; Payge Japp, University of Nebraska at Omaha, United States; Kyle Christensen, Clemson University, United States; Marissa Shuffler, Clemson University, United States; A Patel, University of Texas, Dallas, United States; Joshua Summers, University of Texas, Dallas, United States

**Everyday dynamics of students' creative engagement**

Maciej Karwowski, University of Wroclaw, Poland; Aleksandra Zielińska, University of Wroclaw, Poland

Session G: 5

Time: 17:00-18:30

Location: UOM\_A03

**SYMPOSIUM: ADVANCING SRL RESEARCH WITH ARTIFICIAL INTELLIGENCE – THEORETICAL AND CONCEPTUAL FOUNDATIONS****Chair**

Sanna Järvelä, University of Oulu, Finland

**Organisers**

Sanna Järvelä, University of Oulu, Finland; Inge Molenaar, Radboud University Nijmegen, Netherlands

**Discussant**

Marcus Specht, TU Delft, Netherlands

**Research on the grid: measuring self-regulated learning with multimodal data and the role of AI**

Susanne de Mooij, Radboud University, Netherlands; Joni Lämsä, University of Oulu, Finland; Roger Azevedo, University of Central Florida, United States; Maria Bannert, Technical University of Munich (TUM), Germany; Dragan Gasevic, Monash University, Australia; Sanna Järvelä, University of Oulu, Finland; Inge Molenaar, Radboud University Nijmegen, Netherlands

**Towards Hybrid Human-AI Regulation: Supporting Young learners' Self-regulated Learning**

Inge Molenaar, Radboud University Nijmegen, Netherlands; Anne Horvers, Radboud University, Netherlands; Rick Dijkstra, Radboud University Nijmegen, Netherlands; Rianne Kooi, Radboud University Nijmegen, Netherlands; Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands

**Studying and developing metrics for socially shared regulation in learning**

Sanna Järvelä, University of Oulu, Finland; Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Márta Sobocinski, University of Oulu, Finland; Eija Vuorenmaa, University of Oulu, Finland, Finland; Ahsen Çini, University of Oulu, Finland

**Closing the feedback loop for self-regulated learning with learning analytics**

Mladen Raković, Monash University, Australia; Yizhou Fan, Peking University, China; Tongguang Li, Monash University, Australia; Shaveen Singh, Monash University, Australia; Xinyu Li, Monash University, Australia; Dragan Gasevic, Monash University, Australia



Session G: 6

Time: 17:00-18:30

Location: AUTH\_DC1

**SYMPOSIUM: INVESTIGATING STUDENTS' ACTIVE PARTICIPATION IN CLASSROOM DISCOURSE****Chair**

Ricardo Böheim, Technical University of Munich, Germany

**Organiser**

Ricardo Böheim, Technical University of Munich, Germany

**Discussant**

Maria Vrikki, University of Nicosia, Cyprus

**Can dialogic discourse enhance student participation and student learning?**

Klara Sedova, Masaryk University, Czech Republic; Martin Sedlacek, Masaryk University, Czech Republic; Roman Švaříček, Masaryk University, Czech Republic; Zuzana Salamounova, Masaryk University, Czech Republic; Tomáš Lintner, Masaryk University, Czech Republic

**Promoting active participation: Examining contextual factors influencing shy students' hand raising**

Lukas Mundelsee, University of Heidelberg, Germany; Susanne Jurkowski, Universität Erfurt, Germany

**Hand raising and its bidirectional relationships with cognitive elaboration and self-concept**

Ricardo Böheim, Technical University of Munich, Germany; Martin Daumiller, University of Augsburg, Germany; Tina Seidel, Technische Universität München, Germany

**Automated hand-raising detection in classroom videos**

Babette Bühler, Hector Research Institute of Education Sciences and Psychology, Germany; Ruikun Hou, University of Tübingen, Germany; Efe Bozkir, University of Tübingen, Germany; Patricia Goldberg, University of Tübingen, Germany; Peter Gerjets, Leibniz-Institut für Wissensmedien, Germany; Ulrich Trautwein, University of Tübingen, Germany; Enkelejda Kasneci, Technical University of Munich, Germany

Session G: 7

Time: 17:00-18:30

Location: UOM\_CR

**SYMPOSIUM: CURRENT READING RESEARCH: COVID-19 IMPACT, RISKS AND BENEFITS OF DIGITAL TECHNOLOGIES FOR READING****Chair**

Ulrich Ludewig, Institute for School Development Research, TU Dortmund University, Germany

**Discussant**

Danielle McNamara, Arizona State University, United States

**COVID-19 Pandemic and Student Reading Achievement – Findings from a School Panel Study**

Ulrich Ludewig, Institute for School Development Research, TU Dortmund University, Germany; Ruben Kleinkorres, Institute for School Development Research, TU Dortmund University, Germany; Rahim Schaufelberger, Institute for School Development Research, TU Dortmund University, Germany; Theresa Schlitter, Technical University Dortmund, Germany; Ramona Lorenz, Institute for School Development Research, TU Dortmund University, Germany; Nele McElvany, Institute for School Development Research, TU Dortmund University, Germany

**Reading and Math Skills Development among Finnish Children before and after COVID-19 School Closure**

Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland

**Associations Between Reading Habits and Comprehension Skills in Primary School**

Lidia Altamura Garcia, University of Valencia, Spain; Ladislao Salmerón, University of Valencia, Spain; Mari Carmen Blanco, University of Zaragoza, Spain; Pablo Delgado, University of Sevilla, Spain; Victoria García, University of Valencia, Spain; Amelia Mana, University of Valencia, Spain; Sandra Montagud, University of Valencia, Spain; Johannes Naumann, University of Wuppertal, Institute for Educational Research, Germany; Luis Ramos, University of Valencia, Spain; Mario Romero, University of Valencia, Germany; Cristina Vargas, University of Valencia, Spain

**The Promise of Educational Technologies in Improving Literacy Instruction and Student Outcomes**

Panayiota Kendeou, University of Minnesota, United States; Kristen McMaster, University of Minnesota, United States; Danielle McNamara, Arizona State University, United States

Session G: 8

Time: 17:00-18:30

Location: AUTH\_DC2

**SINGLE PAPER: CREATIVITY AND DIVERGENT THINKING IN EDUCATION****Chair**

Robbert Smit, University of Teacher Education St.Gallen, Switzerland

**Effects of physical, and social environmental factors on creative thinking.**

Kim Ouwehand, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands

**Sketchnoting - visual notetaking for creative thinking and learning from educational science text**

Laura Ohmes, Carl von Ossietzky University Oldenburg, Germany

**Patterns of creativity in teacher-student interactions in the context of elementary science lessons**

Elisa Kupers, University of Groningen, Netherlands; Astrid Menninga, University of Groningen, Netherlands; Marijn Van Dijk, University of Groningen, Netherlands

**Creativity in education – an explorative study on student teachers' concepts of creativity**

Laura Ohmes, Carl von Ossietzky University Oldenburg, Germany; Lena Haug, Carl von Ossietzky University Oldenburg, Germany; Uta Wagener-Praed, University of Oldenburg, Germany; Juliane Schlesier, Carl von Ossietzky University Oldenburg, Germany; Gerd Hoffmann, C.v.O. Universität Oldenburg, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany

Session G: 9

Time: 17:00-18:30

Location: UOM\_R09

**SINGLE PAPER: PLAY, LEARNING AND DEVELOPMENT****Chair**

Kalypso Iordanou, University of Central Lancashire, Cyprus

**The Children's perspective of play in pre-primary and primary school settings in Finland**

Taina Kyrönlampi, University Oulu, Finland; Riikka Sirkko, University of Oulu, Finland

**Students' decision-making during playing educational games**

Fredrik Rusk, Åbo Akademi University, Finland; Senja Cellius, Nord University, Norway; Wenche Rønning, Nord Universitet, Norway

**Pre-service teachers' playfulness and its connections to the working life**

Signe Pirkko Siklander, University of Oulu, Finland, Finland; Marjaana Kangas, University of Lapland, Finland; Tarja-Riitta Hurme, University of Turku, Finland; Anitta Melasalmi, University of Turku, Finland

**The impact of esports on the youth from a human capital perspective: A systematic review**

Samuel Kai Wah Chu, The University of Hong Kong, Hong Kong; Chenguang Du, Tangshan Normal University, China; Kevin Conn, California State University Northridge, United States; Qi Zhang, Dalian University of Finance And Economics, China

Session G: 10

Time: 17:00-18:30

Location: UOM\_A10

**SINGLE PAPER: TEACHER BIASES****Chair**

Susanne Narciss, TU Dresden, Germany

**Debiasing (student) teachers' anchoring effects to support appropriate interpretations of evidence?**

Kristina Bohrer, University of Education Karlsruhe, Germany; Kirstin Schmidt, University of Education Karlsruhe, Germany; Samuel Merk, PH Karlsruhe, Germany

**Classics as a springboard? Selection bias & cognitive transfer in Flemish classical language pupils**

Alexandra Vereeck, Universiteit Gent, Belgium; Wouter Duyck, Universiteit Gent, Belgium; Arnaud Szmalec, Universiteit Gent, Belgium; Katja De Herdt, Universiteit Gent, Belgium; Mark Janse, Universiteit Gent, Belgium

**Learning From Texts: Effects of Instructions on Preservice Teachers' Judgment Biases**

Sabine Schlag, University of Wuppertal, Germany; Jennifer Knellesen, Bergische University of Wuppertal, Germany

**Dual Language Use as a Resource in Word Explanations During Shared Reading**

Dilman Nomat, University of Oslo, Norway; Vibeke Grøver, University of Oslo, Norway; Veslemøy Rydland, University of Oslo, Norway

Session G: 11

Time: 17:00-18:30

Location: UOM\_A13

**SINGLE PAPER: WRITING: METALINGUISTIC PROCESSES AND INTERVENTIONS****Chair**

Megan Wiedbusch, University of Central Florida, United States

**Student Writers' Metalinguistic Understanding of Transitions in Written Argument**

Debra Myhill, University of Exeter, United Kingdom

**Metalinguistic questioning: how teachers develop understanding of linguistic choice.**

Ruth Newman, University of Exeter, United Kingdom

**The effect of written metalinguistic feedback on cognitive effort and revision success**

Jan-Mikael Rybicki, Aalto University, Finland; Wilhelmiina Hämäläinen, Aalto University, Finland; Kari K. Pitkänen, University of Helsinki, Finland; Lauri Malmi, Aalto University, Finland

**ICT in effective writing interventions: an empirical review**

María Victoria González Laguna, University of León, Spain; Raquel Fidalgo, University of León, Spain; Gert Rijlaarsdam, University of Amsterdam, Netherlands

Session G: 12

Time: 17:00-18:30

Location: UOM\_A11

**SINGLE PAPER: PARENTAL INVOLVEMENT IN LEARNING****Chair**

ELENI VASILAKI, University of Crete, Greece

**How Can Parents Encourage Adolescents to Choose a Non-Gender Stereotyped High School Major?**

Idit Katz, Ben-Gurion University of the Negev, Israel; Tzvia Samuha, The Ben-Gurion University of the Negev, Israel; Ortal Slobodin, Ben-Gurion University of the Negev, Israel

**Parental beliefs and their influence on learning an instrument at primary school age**

Patrizia Bieber, University of Tübingen, Germany; Barbara Busch, Mannheim University of Music and Performing Arts, Germany; Jessika Golle, University of Tübingen, Germany; Richard Goellner, University of Tuebingen, Germany

**What parents do for their children – links with their expectations and child's indicators**

Anne-Mai Meesak, Tallinn University, Institute of Educational Sciences, Estonia; Dmitri Rozgonjuk, University of Tartu, Institute of Computer Science, Estonia; Tiia Öun, Tallinn University, Institute of Educational Sciences, Estonia; Eve Kikas, Tallinn University, Estonia

**Role of teachers' and parents' evaluations in the development of motivation and achievement**

Satu Koivuhovi, University of Turku, Finland; Mari-Paullina Vainikainen, Tampere University, Finland

Session G: 13

Time: 17:00-18:30

Location: UOM\_A06

**SINGLE PAPER: MATHEMATICAL AND TEST ANXIETY****Chair**

Liv Håberg, Volda University College, Norway

**The impact of mathematics anxiety on arithmetic performance: a dual-task study.**

Serena Rossi, Loughborough University, United Kingdom; Krzysztof Cipora, Loughborough University, United Kingdom; Sara Caviola, University of Padova, Italy; Irene C. Mammarella, University of Padova, Italy; Iro Xenidou-Dervou, Loughborough University, United Kingdom

**Reducing mathematical test anxiety: why different interventions lead to similar outcomes**

Yulia Kovas, Goldsmiths University of London, United Kingdom; Evgeniia Alenina, National Research University Higher School of Economics, Russian Federation; Maxim Likhanov, National Research University Higher School of Economics, Russian Federation; Elina Tsigeman, National Research University Higher School of Economics, Russian Federation

**Positive teachers' perceptions foster children's math performance against math anxiety**

Enrica Donolato, University of Oslo, Norway; Sara Caviola, University of Padova, Italy; David Giofrè, School of Psychology, University of Leeds, United Kingdom; Irene C. Mammarella, University of Padova, Italy

**Test anxiety fluctuations during secondary school assessments: the role of basic psychological needs**

Stefanie De Jonge, Ghent University, Belgium; Evelien Opdecam, Ghent University, Belgium; Leen Haerens, Ghent University, Belgium

Session G: 14

Time: 17:00-18:30

Location: AUTH\_T002

**SINGLE PAPER: MINORITY STUDENTS AND CULTURAL DIVERSITY IN SCHOOLS****Chair**

BOBBY HOFFMAN, University of Central Florida, United States

**Non-religious pupils in RE: Exploring differences in cognitive activation and relevance beliefs**

Alexander Unser, TU Dortmund University, Germany

**Using VaKE in higher education in Georgia: Experiences and challenges**

Ekaterine Shaverdashvili, Ilia State University, Georgia; Tamar Mosiashvili, Ilia University, Tbilisi, Georgia

**Implicit and Explicit Attitudes of Pre-service Teachers: The Case of Ethnicity and Sexuality**

Andreas Gegenfurtner, University of Augsburg, Germany; Aldin Alijagic, University of Augsburg, Germany; Sylvia Gabel, Universität Augsburg, Germany; Özün Keskin, University of Augsburg, Germany; Jule Neubauer, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

**Finnish ethnic minority youth constructing civic identity**

Anuleena Kimanen, University of Turku, Finland; Samaneh Khalili, University of Turku, Finland; Aleksí Seger, University of Turku, Finland; Jenni Alisaari, University of Turku, Finland; Elina Kilpi-Jakonen, University of Turku, Finland

Session G: 15

Time: 17:00-18:30

Location: AUTH\_T102

**SINGLE PAPER: MOTIVATION AND SELF-REGULATED LEARNING****Chair**

Salome Flegr, Ludwig-Maximilians-Universität (LMU), Germany

**Promoting self-regulated learning in children's daily lives: The effects of a mobile intervention**

Jasmin Breitwieser, DIPF | Leibniz Institute for Research and Information in Education, Germany; Lea Nobbe, DIPF | Leibniz Institute for Research and Information in Education, Germany; Daniel Biedermann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Designing Self-Regulation interventions for different target groups in Entrepreneurship Education**

Tobias Jenert, Paderborn University, Germany; Ronja Büker, Paderborn University, Germany

**Motivational Regulation, Academic Effort, and Academic Success Among International Students**

Hüseyin Hilmi Yıldırım, FernUniversität in Hagen, Germany; Julia Zimmermann, FernUniversität in Hagen, Germany; Kathrin Jonkmann, FernUniversität in Hagen, Germany

Session G: 16

Time: 17:00-18:30

Location: UOM\_A07

**SINGLE PAPER: EDUCATIONAL NEUROSCIENCE****Chair**

Eva Lindgren, Umeå University, Sweden

**Rhythm perception fosters motor skills through music training: a neurobehavioral study with children**

Marta Martins, University Institute of Lisbon (ISCTE-IUL), Portugal; Daniela Coimbra, Polytechnic Institute of Porto, Portugal; Ana Mafalda Reis, Unilabs - Boavista, Portugal; Christian Gaser, Friedrich Schiller University of Jena, Germany; São Luís Castro, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal, Portugal

**The Effect of Problem Format on Children's Arithmetic Performance**

Iro Xenidou-Dervou, Loughborough University, United Kingdom; Emine Simsek, Loughborough University, United Kingdom; Ilona Friso - van den Bos, University of Twente, Netherlands; Menno Van der Schoot, Vrije Universiteit Amsterdam, Netherlands; Sara Rashid, Cambridge University, United Kingdom; Ruth Trundle, Devon Education Services, United Kingdom; Ernest Van Lieshout, Vrije Universiteit Amsterdam, Netherlands

**Effects of emotionality on news credibility: Insights from self-reports and brain imaging**

Mareike Bacha-Trams, Research Methods in Psychology – Media-based Knowledge Construction, Faculty of Engineering, University of Duisburg-Essen, Duisburg, Germany, Germany; Daniel Bodemer, Research Methods in Psychology – Media-based Knowledge Construction, Faculty of Engineering, University of Duisburg-Essen, Duisburg, Germany, Germany

Session G: 17

Time: 17:00-18:30

Location: AUTH\_TE2

**SINGLE PAPER: TECHNOLOGY-ENHANCED TEACHING****Chair**

Matthias Huber, University College for Teacher Education Carinthia, Austria

**Realizing adaptive teaching with educational technology? A benefit for low achieving school students**

Leonie Sibley, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany; Christine Plicht, University of Tübingen, Germany; Armin Fabian, University of Tuebingen, Germany; Christian Wettke, University of Tübingen, Germany; Thorsten Bohl, University of Tübingen, Germany

**Epistemic changes when university teachers use digital technology in assessing student learning**

Linda Barman, KTH, Royal Institute of Technology, Sweden; Maria Weurlander, Stockholm University, Sweden

**The educational potential of programming and the role of teachers. A scoping of systematic reviews**

Synnøve H. Amdam, Volda University College, Norway; Sanna Forsström, University of Stavanger, Norway

**Becoming a teacher to digitally transform education? Developing and applying the D(FIT)-Choice**

Judith Martínez Moreno, University of Education Zurich / University of Zurich, Switzerland; Dominik Petko, University of Zurich, Switzerland

Session G: 18

Time: 17:00-18:30

Location: AUTH\_T202

**SINGLE PAPER: INFORMAL LEARNING****Chair**

Fabian Wolff, Universität of Koblenz, Germany

**Informal science learning: an overview of activity types and their design characteristics**

Tessa Eysink, University of Twente, Netherlands; Natasha Dmoshinskaia, University of Twente, Netherlands; Hannie Gijlers, University of Twente, Netherlands

**School social media and the datafication of children**

Karley Beckman, University of Wollongong, Australia; Tiffani Apps, University of Wollongong, Australia; Sue Bennett, University of Wollongong, Australia

**Social dimensions of learning: unpacking the collaborative process in an online initiative**

Karin Ekman, University of Gothenburg, Sweden; Thomas Hillman, University of Gothenburg, Sweden

**Children's Leisure Writing Activities and Related Beliefs**

Lisa Birnbaum, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Stephan Kroener, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

**Who cares? Gender role representation of same-sex parents in children's picture books**

Lars Burghardt, University of Bamberg, Germany

Session G: 19

Time: 17:00-18:30

Location: UOM\_R05

**SINGLE PAPER: TEACHER-STUDENT RELATIONSHIPS, STUDENT ADJUSTMENT AND ACADEMIC OUTCOMES****Chair**

Kati Sormunen, University of Helsinki, Finland

**The role of student-teacher relationships for classroom adjustment and later academic achievement**

Ragnhild Lenes, University of Stavanger, Norway; Dieuwer ten Braak, University of Stavanger, Norway; Ingunn Størksen, University of Stavanger, Norway

**The relationship between teacher-child interaction and EF: A cross-cultural meta-analysis**

Canmei Xu, KU LEUVEN, Belgium; Dieter Baeyens, KU Leuven, Belgium; Mariette Huijzinga, Vrije Universiteit Amsterdam, Netherlands; Wim Van Den Noortgate, KU LEUVEN, Belgium

**Teacher-student relationships and psychosocial adjustment of students with learning disabilities**

Fotini Polychroni, NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, Greece; Alexander-Stamatios Antoniou, National &amp; Kapodestrian University of Athens, Greece; Evgenia Kyriakidou, National and Kapodistrian University of Athens, Greece; Despoina Kontarlatou, National and Kapodistrian University of Athens, Greece

Session G: 20

Time: 17:00-18:30

Location: UOM\_R08

**SINGLE PAPER: UNDERSTANDING AND SUPPORTING STUDENTS WITH AUTISM SPECTRUM DISORDER****Chair**

Karsten Stegmann, University of Passau, Germany

**The role of autistic traits in peer influence on social skills in special needs classrooms**

Gina Nenniger, University of Fribourg, Switzerland; Christoph Müller, University of Fribourg, Switzerland

**Improving Computational Thinking for Children with Autism in the Virtual Environment**

Nuodi Zhang, Florida State University, United States; Alex Barrett, Florida State University, United States; Fengfeng Ke, Florida State University, United States; Zlatko Sokolij, Florida State University, United States; Jewoong Moon, The University of Alabama, United States

**Inclusion of Children with Autism Spectrum Disorder in Portugal: A Social Network Analysis Approach**

Paulo César Dias, Universidade Catolica Portuguesa, Portugal; Ana Oliveira, Universidade Católica Portuguesa, Faculty of Philosophy and Social Sciences, Centre for Philosophical and Humanistic Studies, Portugal; Irene Cadime, Psychology Research Center, University of Minho, Braga, Portugal; Christoforos Mamas, University of California, San Diego, United States

**What do secondary school teachers need to optimally educate students with Autism Spectrum Disorder?**

Maria Fernanda Esqueda Villegas, University of Groningen, Netherlands; Steffie van der Steen, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands

Session G: 21

Time: 17:00-18:30

Location: UOM\_R01

## POSTER PRESENTATION: VIDEO-BASED LEARNING

## Chair

Astrid Wichmann, Ruhr University Bochum, Germany

**Fostering Pre-service Teachers' Assessment Skills: Establishing Adaptivity in a Video Simulation**

Michael Nickl, Technical University of Munich (TUM), Germany

**VIPP-School: Feasibility of a video-feedback intervention to improve teacher-child interaction**

K.M. Starreveld, Vrije Universiteit Amsterdam, Netherlands; Mathilde Overbeek, Vrije Universiteit Amsterdam, Netherlands; Agnes Willemen, VU University Amsterdam, Netherlands; Marian Bakermans-Kranenburg, University Institute of Psychological, Social and Life Sciences, Portugal

**Multimedia principles in instructional videos for classroom: A case study with pre-service teachers**

Juliette Desiron, University of Zürich, Switzerland; Eliana Brianza, University of Zurich, Institute of Education, Switzerland

**Effects of quizzes on (self-regulated) learning when studying instructional videos**

Margot van Wermeskerken, Utrecht University, Netherlands; Floor van Rosse, Erasmus MC Rotterdam, Netherlands

**Effects of collaborative reception of explanatory videos on knowledge and competencies**

Laura Schultze, Universität Hildesheim, Germany; Raphael Koßmann, Universität Hildesheim, Germany; Nicoletta Bürger, University of Hildesheim, Germany; Melanie Fabel-Lamla, Universität Hildesheim, Germany; Christof Wecker, Universität Hildesheim, Germany

Session G: 22

Time: 17:00-18:30

Location: UOM\_R02

## POSTER PRESENTATION: FOSTERING ARGUMENTATIVE PROCESSES AND SKILLS

## Chair

SOFIA AVGITIDOU, Aristotle University of Thessaloniki, Greece

**Learning genre knowledge from comparing argumentative texts: zooming in on the comparison processes**

Tine Mombaers, University of Antwerp, Belgium; Roos Van Gasse, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium

**Personal Relevance and Refutation: Fostering High School Students' Argument-Evaluation Skills**

Nina Udvardi-Lakos, University of Freiburg, Germany; Tino Endres, University of Freiburg, Germany; Laura Wevelsiep, University of Freiburg, Germany; Lisa Bender, University of Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany

**Opening the black box of students' argumentative writing processes**

Fien De Smedt, Ghent University, Belgium; Nina Vandermeulen, Umeå University, Sweden; Yana Landrieu, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Reclaiming habit formation for democratic values in schools: practicing and experiencing citizenship**

Gabriel Fortes, Universidad Alberto Hurtado, Chile; Andreas Reichelt Lind, OsloMet - Oslo Metropolitan University, Norway; Antonia Larrain, Universidad Alberto Hurtado, Chile

**Dealing with conflicting sources in argumentative writing and its consequences**

Hyeyoun Kim, Dongguk University-Seoul, Republic of Korea; Gyeonghoon Yoon, High School Attached to College of Education, Dongguk University, Republic of Korea

**Stories of Crises in Art: A Potential for Democratic Education?**

Britta Breser, University of Vienna &amp; University of Graz, Austria

**Dialogue and critical questions to promote critical thinking in Secondary Education students**

Jose Luna, University of Barcelona, Spain; Núria Castells, Faculty of Psychology, University of Barcelona, Spain; Esther Pérez, Universitat de Barcelona, Spain; Marta Minguella, University of Barcelona, Spain; Amelia Tey, Universitat de Barcelona, Spain

Session G: 23

Time: 17:00-18:30

Location: UOM\_R03

## POSTER PRESENTATION: INCLUSIVE EDUCATION AND LEARNING

## Chair

LEFKOTHEA KARTASIDOU, University of Macedonia, Greece

**Domain-specificity and domain-generalty in teaching sensitive and controversial issues**

Machteld Vandecandelaere, KU Leuven, Belgium; Rushda Kaleem, KU Leuven (BE), Belgium; Cato Teughels, KU Leuven (BE), Belgium; Nafen Zhuo, KU Leuven (BE), Belgium; Jan Sermeus, KU Leuven, Royal Observatory of Belgium, Belgium

**Evaluation of a Pilot School-Based Teacher-Coaching intervention to change the social climate**

Carina Wikman, Stockholm University, Department of Special Education, Sweden; Mara Westling Allodi, Stockholm University, Sweden; Laura Ferrer-Wreder, Stockholm University, Department of Psychology, Sweden

**Reference norm orientations of teachers and characteristics of professional contexts**

Josephine Tanneberger, University of Potsdam, Germany; Jessica Jaeuthe, Universität Potsdam, Germany; Sebastian Kempert, University of Potsdam, Germany; Nadine Spörer, University of Potsdam, Germany

**Online studying with special needs - a student perspective**

Maria Öhrstedt, Stockholm University, Sweden; Annika Käck, Stockholm University, Sweden; Helena Reierstam, Stockholm University, Sweden

**Case study: Students' emotional well-being and social participation with focus on SEN during COVID19**

Alexandra Pirker, University of Vienna, Austria; Katharina-Theresa Lindner, University of Vienna, Austria

**Social Inclusion in Secondary School**

Reto Luder, Zurich University of Teacher Education, Switzerland; Andre Kunz, Zurich University of Teacher Education, Switzerland; Giuliana Pastore, Zurich University of Teacher Education, Switzerland; Ariane Paccaud, Pädagogische Hochschule Zürich, Switzerland

**Education Accessibility in Challenging Circumstances: A Case of Displaced Persons in Nigeria.**

Vivienne Kachollom Rwang, University of Southampton, United Kingdom

Session G: 24

Time: 17:00-18:30

Location: UOM\_GYM

## ROUNDTABLE: RELIGION, SPIRITUALITY AND WORLDVIEWS

## Chair

Fernanda Rocha de Freitas, Universidade Federal de Minas Gerais, Brazil

**Learning to judge religious conflicts: A structural model of judgement competence for RE**

Frederike Gabelt, TU Dortmund University, Germany

**Historical narratives among students and their meaning-making function**

G.M. Gaans, University of Amsterdam, Netherlands

**What is religious literacy? A delphi study design on Finnish academic experts' perceptions.**

Martin Ubani, University of Eastern Finland, Finland

**Preparing upper-secondary school students for higher education with emphasis on academic literacy**

Tonje Stenseth, University of South-Eastern Norway, Norway; Liv Lofthus, University of southeastern Norway, Norway

Session G: 25

Time: 17:00-18:30

Location: UOM\_A04

## WORKSHOP: EVALUATING QUALITY OF ASSESSMENT IN HIGHER EDUCATION WITH THE ONLINE ASSESSMENT WEB TOOL

**Evaluating quality of assessment in higher education with the online Assessment Web tool**

Tamara Schilt-Mol, Hogeschool van Arnhem en Nijmegen, Netherlands; Eline den Tuinder, HAN University of Applied Sciences, Netherlands; Marion van de Wijdeven, HAN University of Applied Sciences, Netherlands; Edwin Buijs, HAN University of Applied Sciences, Netherlands; Kyle Van den Langenberg, HAN University Nijmegen, Netherlands; Marjoleine Dobbelaer, HAN University Nijmegen, Netherlands; Linda Jakobs, HAN University of Applied Sciences (UAS), Netherlands; Sharon Klinkenberg, University of Amsterdam, Netherlands

Session G: 26

Time: 17:00-18:30

Location: UOM\_A05

## ICT DEMONSTRATION: AI-SUPPORTED ACQUISITION OF ARGUMENTATION SKILLS: THE 'ARGUENISER'

**AI-supported acquisition of argumentation skills: the 'Argueniser'**

Stephan Geschwind, University of Passau, Germany; Deborah Voss, University of Passau, Germany; Veronika Hackl, Universität Passau, Germany

Session H: 1

Time: 08:00-09:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: FROM ACCESS TO IMPACT: A QUALITY PERSPECTIVE ON EARLY CHILDHOOD DIGITAL EDUCATION****Chair**

Franziska Cohen, University of Education Freiburg, Germany

**Organiser**

Franziska Cohen, University of Education Freiburg, Germany

**Discussant**

Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

**How can guided pretend play contribute to the quality of digital education in early childhood?**

Franziska Vogt, St.Gallen University of Teacher Education, Switzerland; Lena Hollenstein, University of Teacher Education St.Gallen, Switzerland

**Learning words with social robots: Preschoolers' multimodal behavior during retrieval difficulties**

Nils Frederik Tolksdorf, Paderborn University, Germany

**Criteria for and development of high quality multilingual digital picture books**

Trude Hoel, University of Stavanger, Norway; Katarzyna Tunkiel, University of Stavanger, Norway

**Creativity apps for young children: analysis of app store data, characteristics, and quality**

Pinar Kolancali, University of Oxford, United Kingdom; Victoria Murphy, University of Oxford, United Kingdom; Sophie Booton, University of Oxford, United Kingdom

ANNOTATIONS:  
SIG 5 INVITED SYMPOSIUM

Session H: 2

Time: 08:00-09:30

Location: UOM\_CH

**INVITED SYMPOSIUM: PRACTICE-BASED RESEARCH EXPLORING THE COMPLEXITY BETWEEN TEACHING, WELLBEING AND INNOVATION****Chair**

Essi Ryymin, Häme University of Applied Sciences, Finland

**Discussant**

Emmy Vrieling, Open University of the Netherlands, Netherlands

**Promoting wellbeing of higher education teachers**

Liisa Postareff, HAMK University of Applied Sciences, Finland; Anna Parpala, University of Helsinki, Finland; Petri Nokelainen, Tampere University, Finland

**Guiding thesis circles in higher education: creating value for teachers and learners**

Kamakshi Rajagopal, AE - Adapt &amp; Enable, Belgium; Ya Ping Hsiao, Tilburg University, Netherlands; Steven Verjans, Open University of the Netherlands, Netherlands; Emmy Vrieling, Open University of the Netherlands, Netherlands; Inge Damen, Open University of the Netherlands, Netherlands

**Does watching oneself / someone in an immersive video affect emotions and sense of presence?**

Vito Candido, SFUVET, Switzerland; Francesca Amenduni, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland; Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland

**Social capital related to teachers' innovative behaviour: a scientific and practice-based approach**

Stefan Robbers, Open University Netherlands, Netherlands; Emmy Vrieling, Open University of the Netherlands, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands; Arnoud Evers, Open Universiteit, Netherlands

ANNOTATIONS:  
INVITED SYMPOSIUM OF THE EUROPEAN ASSOCIATION FOR PRACTITIONER RESEARCH ON IMPROVING LEARNING (EAPRIL)

Session H: 3

Time: 08:00-09:30

Location: AUTH\_T002

**SYMPOSIUM: MATHEMATICAL STRATEGY USE: CAN WE EXPECT EVERYONE TO BE FLEXIBLE IN ALL CIRCUMSTANCES?****Chair**

Erika Schlatter, Leiden University, Netherlands

**Organisers**

Marian Hickendorff, Leiden University, Netherlands; Jake McMullen, University of Turku, Finland; Erika Schlatter, Leiden University, Netherlands

**Discussant**

Hedwig Gasteiger, Osnabrück University, Germany

**What strategy works for whom? Flexible and adaptive strategy use in primary school mathematics.**

Erika Schlatter, Leiden University, Netherlands; Marian Hickendorff, Leiden University, Netherlands

**Are strategy selection and execution in multidigit subtraction related to executive functions?**

Stijn Van Der Auwera, KU Leuven, Centre for Instructional Psychology and -Technology, Belgium; Bert De Smedt, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**Misconceptions of the order of operations and the use of conceptually-derived arithmetic strategies**

Joanne Eaves, Nottingham University, United Kingdom; Camilla Gilmore, Loughborough University, United Kingdom; Nina Attridge, University of Portsmouth, United Kingdom

**Adaptive number knowledge is related to procedural flexibility in highschoolers**

Irene Pampallis, University of the Witwatersrand, South Africa; Jake McMullen, University of Turku, Finland; Jon Star, Harvard Graduate School of Education, United States; Koen Veermans, University of Turku, Finland



Session H: 4

Time: 08:00-09:30

Location: AUTH\_DC1

**SYMPOSIUM: INVESTIGATING THE TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE MODEL FROM A BIRD'S EYE VIEW****Chair**

Andreas Lachner, University of Tübingen, Germany

**Organisers**

Armin Fabian, University of Tuebingen, Germany; Iris Backfisch, University of Tuebingen, Germany

**Discussant**

Charoula Angeli, University of Cyprus, Cyprus

**Looking at the forest (not the trees): A systematic review of systematic reviews on TPACK**

Eliana Brianza, University of Zurich, Institute of Education, Switzerland; Mirjam Schmid, University of Zurich, Switzerland; University of Queensland, Australia, Switzerland; Sog Yee Mok, University of Teacher Education of the Grisons, Switzerland; Dominik Petko, University of Zurich, Switzerland

**A systematic review on measures of teachers' competence-related beliefs about ICT use**

Charlott Rubach, University Rostock, Germany; Rebecca Lazarides, University of Potsdam, Germany

**Meta-analysis to examine the validity of TPACK self-report assessments**

Iris Backfisch, University of Tuebingen, Germany; Jürgen Schneider, German Institute for International Educational Research (DIPF), Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Scheiter, University of Potsdam, Germany; Ronny Scherer, University of Oslo, Norway

**A data-driven systematic review of TPACK-based professional development programs**

Armin Fabian, University of Tuebingen, Germany; Iris Backfisch, University of Tuebingen, Germany; Kenneth Kirchner, University of Tuebingen, Germany; Andreas Lachner, University of Tübingen, Germany

Session H: 5

Time: 08:00-09:30

Location: AUTH\_DC2

**SYMPOSIUM: CHILDREN'S ARGUMENTATION****Chairs**

Chrysi Rapanta, Universidade Nova de Lisboa, Portugal; Jarmila Bubikova-Moan, Oslo Metropolitan University, Norway

**Discussant**

Antonia Larrain, Universidad Alberto Hurtado, Chile

**Argumentation in the early years: a meta-synthesis of research**

Jarmila Bubikova-Moan, Oslo Metropolitan University, Norway

**Argumentation and dialogical shifts in young children's role play**

Margareth Sandvik, Oslo Metropolitan University, Norway

**Changing practices in dialogue and argumentation: Teachers' voice on effective aspects of PD**

Maria Vrikki, University of Nicosia, Cyprus; Riikka Hofmann, University of Cambridge, United Kingdom; Elena Papanastasiou, University of Nicosia, Cyprus; Maria Evagorou, University of Nicosia, Cyprus; Fiona Maine, University of Exeter, United Kingdom

**A cross-comparative analysis of children's arguments in 5 European countries**

Chrysi Rapanta, Universidade Nova de Lisboa, Portugal; FABRIZIO MACAGNO, Universidade Nova de Lisboa, Portugal

Session H: 6

Time: 08:00-09:30

Location: UOM\_R09

**SYMPOSIUM: MEETING THE NEEDS OF GIFTED AND TALENTED STUDENTS****Chair**

Marielle Wittelings, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**Organisers**

Jessica Vergeer, Radboud University Nijmegen, Behavioural Science Institute, Netherlands; Marielle Wittelings, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Mare van Hooijdonk, Radboud University Nijmegen, Netherlands

**Discussant**

Karine Verschuere, KU Leuven, Belgium

**CANCELLED: The effectiveness of the Achievement Motivation Enhancement (...)**

Ophelie Desmet, Dewar College of Education, Valdosta State University, United States

**Creativity in full-time and part-time gifted education**

Mare van Hooijdonk, Radboud University Nijmegen, Netherlands; Loes Marsman, Radboud University Nijmegen, Netherlands

**Inclusive Education for Gifted Students: A Systemic Approach**

Jessica Vergeer, Radboud University Nijmegen, Behavioural Science Institute, Netherlands; Marjolijn van Weerdenburg, Radboud University Nijmegen, Behavioural Science Institute, Netherlands; Trudie Schils, Maastricht University, School of Business and Economics, Netherlands; Anouke Bakx, Fontys University, Radboud University, Netherlands

**Identifying and Providing Supports for Gifted Students from Low-Income Households in Dublin, Ireland**

Leeanne Hinch, Dublin City University, Ireland

Session H: 7

Time: 08:00-09:30

Location: AUTH\_TE2

**SYMPOSIUM: USING EXPERIENCE-SAMPLING METHODS TO UNDERSTAND PROCESSES OF LEARNING AND INSTRUCTION****Chair**

Hanna Dumont, University of Potsdam, Germany

**Organiser**

Hanna Dumont, University of Potsdam, Germany

**Discussant**

Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Intraindividual dynamics between self-concept and perceived mathematics learning achievement**

Christoph Niepel, University of Luxembourg, Luxembourg; Herb W. Marsh, Australian Catholic University, Australia; Jiesi Guo, Australian Catholic University, Australia; Reinhard Pekrun, Australian Catholic University, Australia; Jens Möller, Kiel University, Educational Science, Germany

**Intraindividual dynamics and fluctuations of competence, engagement and disaffection**

Jussi Järvinen, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Lars-Erik Malmberg, University of Oxford, United Kingdom; Katariina Salmela-Aro, Helsinki University, Finland

**Intraindividual dynamics between social relatedness and learning engagement**

Simon Ohl, University of Potsdam, Germany; Hanna Dumont, University of Potsdam, Germany

**Relevance of perceived teaching quality for students' self-regulation in individual lessons**

Friederike Blume, DIPF | Leibniz Institute for Research and Information in Education, Germany; Florian Schmiedek, DIPF | Leibniz Institute for Research and Information in Education, Germany

Session H: 8

Time: 08:00-09:30

Location: UOM\_A02

**SYMPOSIUM: METHODS FOR EXAMINING THE STRATEGIC AND TIMELY DEPLOYMENT OF SRL PROCESSES****Chair**

Allyson Hadwin, University of Victoria, Canada

**Discussant**

Anastasia Efklides, Aristotle University of Thessaloniki, Greece

**Trigger events as a framework for empirically evidencing regulation in dynamic learning situation**

Sanna Järvelä, University of Oulu, Finland; Allyson Hadwin, University of Victoria, Canada

**Theorized Self-Regulated Learning Events and Sequences and Task Performance During Biology Learning**

Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Fatemeh Salehian Kia, Simon Fraser University, Canada; Jeff Greene, university of north carolina at chapel hill, United States; Linyu Yu, University of North Carolina at Chapel Hill, United States; Robert Plumley, University of North Carolina at Chapel Hill, United States; Shelbi Kuhlman, University of North Carolina at Chapel Hill, United States

**Examining the adaptive nature of self-regulated learning in a large-scale university course**

Mladen Raković, Monash University, Australia; Jeff Greene, university of north carolina at chapel hill, United States; Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Robert Plumley, University of North Carolina at Chapel Hill, United States; Kelly Hogan, University of North Carolina at Chapel Hill, United States; Abigail Panter, University of North Carolina at Chapel Hill, United States

**Facial expressions and regulation in students completing a collaborative, scenario-based online task**

Matthew Moreno, McGill University, Canada; Mariel Miller, University of Victoria, Canada; Allyson Hadwin, University of Victoria, Canada; Susanne Lajoie, McGill University, Canada; Keerat Grewal, McGill University, Canada; Reinhard Pekrun, University of Essex, United Kingdom; Jason Harley, McGill University, Canada

Session H: 9

Time: 08:00-09:30

Location: UOM\_A03

**SINGLE PAPER: SOCIAL DEVELOPMENT IN CHILDREN AND ADOLESCENTS****Chair**

Josef Guggemos, University of Education Schwäbisch Gmünd, Germany

**Linkages between temperament, social skills, and self-concept in childhood**

Eleni Kallia, University of Thessaly, Greece; Evaggelia Tsiara, University of Thessaly, Greece; Irini Dermizaki, University of Thessaly, Greece

**The role of body image to the psychological health and welfare of young students**

Maria Zafiri, University of Thessaly, Greece; Angeliki Leondari, University of Thessaly, Greece; Grigoris Kiosseoglou, Aristotle University of Thessaloniki, Greece

**Assessing core socioemotional skills in adolescent students: A pilot study**

Rui Maio, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Ana Camacho, University of Porto, Portugal; Catarina Grande, University of Porto, Portugal; Teresa Leal, University of Porto, Portugal; Diana Alves, University of Porto, Portugal; Isabel M.P. Abreu-Lima, University of Porto, Portugal; Alan Oliveira, Columbia University, United States; Rachel Outhred, Oxford MeasurEd, United Kingdom; Joana Cadima, University of Porto, Portugal

**Parenting styles and social behavior of children and adolescents: a latent profile analysis**

Wassilis Kassis, School of Education, FHNW, Switzerland; AIKATERINI VASIOU, University of Crete, Greece; Anastasia Krasanaki, Hellenic Open University, Greece; Spyridon Tandaros, National Kapodistrian University of Athens, Greece

Session H: 10

Time: 08:00-09:30

Location: AUTH\_DC3

**SINGLE PAPER: SKILLS AND PRACTICES OF UNIVERSITY TEACHERS****Chair**

Özün Keskin, University of Augsburg, Germany

**Generic skills in higher education - teaching conceptions, practices and pedagogical training**

Tarja Tuononen, University of Helsinki, Finland; Heidi Hyytinen, University of Helsinki, Finland; Katri Kleemola, University of Helsinki, Finland; Telle Hailikari, Häme University of Applied Sciences, Finland; Auli Toom, University of Helsinki, Finland

**Mentoring for student reflection and employability competences: A quasi-experimental study**

Wendy Nuis, Maastricht University, Netherlands; Katharina Zimmerling, Maastricht University, Netherlands; Mien Segers, Maastricht University, Netherlands; Simon Beausaert, Maastricht University, Netherlands

**Supervision of degree projects: doing collectivity in practice**

Jenny Magnusson, Södertörn University, Sweden

**Facilitating transformative learning spaces: Strategies to promote generic skills in higher education**

Anastasia Falkenstern, Justus-Liebig-University Giessen, Germany; Edith Braun, Justus-Liebig-University Giessen, Germany

Session H: 11

Time: 08:00-09:30

Location: UOM\_CR

**SINGLE PAPER: RELIGIOSITY AND SPIRITUALITY****Chair**

Dagmar Festner, University of Paderborn, Germany

**Children's and young people's value learning, worldviews and resilience in uncertain times**

Arniika Kuusisto, University of Helsinki, Finland

**Finnish ethnic minority youth and inspiration from religion for civic engagement**

Anuleena Kimanen, University of Turku, Finland; Samaneh Khalili, University of Turku, Finland; Aleksi Seger, University of Turku, Finland; Jenni Alisaari, University of Turku, Finland; Elina Kilpi-Jakonen, University of Turku, Finland

**Turkish-Muslim and Reformed Orthodox Parents: Religious Identity Disclosure in Dutch Primary Schools**

Rosanne Aantjes, Canterbury Christ Church University, United Kingdom

Session H: 12

Time: 08:00-09:30

Location: UOM\_R05

**SINGLE PAPER: TEACHERS' TECHNOLOGICAL-PEDAGOGICAL KNOWLEDGE AND USE OF EDUCATIONAL TECHNOLOGIES****Chair**

Aki Schumacher, Hector Research Institute of Education Sciences and Psychology, University of Tübingen, Germany

**How teachers use digital data: A systematic review**

Alina Hase, Leuphana University Lueneburg, Germany; Franziska Greiner, Universität Leipzig, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany

**Teachers' Technological-Pedagogical Knowledge, computer use in class, and students' ICT**

Karsten Stegmann, University of Passau, Germany; Tamara Kastorff, Technical University of Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Relation between Teachers' Pedagogical Knowledge, Classroom Activities and Self-Regulated Learning**

Karsten Stegmann, University of Passau, Germany; Sabrina Reith, Technical University of Munich, Germany; Tamara Kastorff, Ludwig-Maximilians-Universität (LMU), Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany; Birgit J. Neuhaus, LMU Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany

**Structural Conditions of Professional Learning Communities on Educational Technologies**

Sonja Berger, Ludwig-Maximilians-Universität in Munich, Germany; Andrea Ludwig, ISB - State Institute for School Quality and Educational Research Munich, Germany; Pauline Woop, Ludwig-Maximilians-Universität in Munich, Germany; Vera Haldenwang, ISB - State Institute for School Quality and Educational Research Munich, Germany; Markus Teubner, ISB - State Institute for School Quality and Educational Research Munich, Germany; Karsten Stegmann, Ludwig-Maximilians-Universität in Munich, Germany

Session H: 13

Time: 08:00-09:30

Location: AUTH\_T202

**SINGLE PAPER: CURRICULUM DEVELOPMENT: STUDENTS, TEACHERS, PRINCIPALS****Chair**

Caroline Cohrsen, University of New England, Australia

**Effective career orientation and career counselling in secondary education: a review study**

Hanke Korpershoek, University of Groningen, Netherlands; Merlijn Karssen, Kohnstamm Institute, Netherlands; Alma Spijkerboer, University of Groningen, Netherlands; Regina Petit, Kohnstamm Institute, University of Amsterdam, Netherlands; Annet Hermans, independent, Netherlands

**Towards a curriculum targeting teachers' relationship-building competence: Results of a Delphi study**

Liedewij Borremans, KU Leuven, Belgium; Jantine Spilt, KU Leuven, Belgium

**Mapping the main streams and foci of competence-based education research**

Joonas Mannonen, Finnish Institute for Educational Research, University of Jyväskylä, Finland; Felipe Urrutia Vargas, Universidad de Chile, Chile; Raija Hämäläinen, University of Jyväskylä, Finland; Roberto Araya, Universidad de Chile, Chile; Sami Lehesvuori, University of Jyväskylä, Finland

**Shifting technology leadership practices in a curriculum reform in Switzerland**

Thomas Wicki, PHBern, University of Teacher Education, Switzerland

Session H: 14

Time: 08:00-09:30

Location: UOM\_A13

**SINGLE PAPER: EDUCATIONAL TECHNOLOGIES FOR CHILDREN****Chair**

Xavier Fontich, Autonomous University of Barcelona, Spain

**Digital competence in Swedish preschools**

Anna-Lena Godhe, Jönköping University, Sweden

**A PlanningApp to help Children Make and Internalize Plans: A Case for Personalized Technology**

Jasmin Breitwieser, DIPF | Leibniz Institute for Research and Information in Education, Germany; Daniel Biedermann, German Institute for International Educational Research (DIPF), Germany; Lea Nobbe, German Institute for International Educational Research (DIPF), Germany; Hendrik Drachler, Goethe-Universität Frankfurt, Germany; Garvin Brod, German Institute for International Educational Research (DIPF), Germany

**Creating a communication bridge for refugee children's education with the eMascot**

Charikleia Sparou, Radboud University, Netherlands; Caroline Pelletier, University College London, United Kingdom; Inge Molenaar, Radboud University, Netherlands; Manolis Mavrikis, UCL Knowledge Lab, United Kingdom

**Integrative processes in primary school children during AR-supported lab work: An eye-tracking study**

Kristin Altmeyer, Saarland University, Germany; Michael Barz, German Research Center for Artificial Intelligence (DFKI), Germany; Sarah Malone, Saarland University, Germany; Luisa Lauer, Saarland University, Germany; Jochen Kuhn, Ludwig-Maximilians-Universität (LMU), Germany; Markus Peschel, Saarland University, Germany; Daniel Sonntag, University of Oldenburg, Germany; Roland Bruenken, Saarland University, Germany

Session H: 15

Time: 08:00-09:30

Location: UOM\_A05

**SINGLE PAPER: SELF-REGULATED LEARNING IN ONLINE SETTINGS****Chair**

Ester Miquel, Universitat Autònoma de Barcelona, Spain

**Students' Self-Regulated Activities While Working on an Online Task-based Instruction in Physics**

Claudia von Aufschnaiter, Institute of Physics Education, Germany; Alexander Eitel, University of Giessen, Germany; Jonas Gabi, Justus Liebig University Giessen, Germany; Anna Kienitz, Justus-Liebig-Universität Giessen, Germany; Joachim Stiensmeier-Pelster, Justus Liebig University Giessen, Germany; Andreas Vorholzer, Technical University of Munich, Germany; Julius Weckler, Justus Liebig University Giessen, Germany

**Learning from data: using learning analytics to support self-regulated learning**

Silvia Lipp, University of Graz, Austria; Susanne Kamsker, University of Graz, Austria

**Student self-regulated learning in online assessments**

Tiffani Apps, University of Wollongong, Australia; Karley Beckman, University of Wollongong, Australia; Sue Bennett, University of Wollongong, Australia; Lori Lockyer, Queensland University of Technology, Australia

**Who keeps up? Predicting persistence in non-formal online courses using machine learning**

Maria Klose, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Philipp Handschuh, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Diana Steger, University of Kassel, Germany

Session H: 16

Time: 08:00-09:30

Location: UOM\_A11

**SINGLE PAPER: CURRICULUM DEVELOPMENT IN EARLY CHILDHOOD EDUCATION****Chair**

Wolfram Rollett, University of Education Freiburg, Germany

**Strategies to Promote Character Strengths Education in ECE Setting: A Scoping Review**

Cheuk Ming Ho, The Education University of Hong Kong, Hong Kong

**Teachers' personal interests: Do they have a place in early childhood curriculum?**

Maria Birbili, Aristotle University of Thessaloniki, Greece

**Aspects of learning in kindergarten: Listening to children's voices through photo-voice**

Maria Kanaki, Aristotle University of Thessaloniki, Greece; Maria Papandreou, Aristotle University of Thessaloniki, Greece

**The inclusion and importance of workshops in Early Childhood Education**

Alexandros Mokias, 2nd Public School of Atalanti Fthiotidas, Greece; Spyridon Filippou-Filippis, University of Thessaly, Department of Early Childhood Education, Greece; Anastasios Siatras, University of Thessaly, Greece

Session H: 17

Time: 08:00-09:30

Location: AUTH\_T102

**SINGLE PAPER: TEACHER EDUCATION PROGRAMMES****Chair**

Lida Zoi David, University of Twente, Netherlands

**Exploring the coherence of teacher education programmes via a mixed methods approach**

Katharina Hellmann, University of Education Freiburg, Germany; Michelle Laux, PH Freiburg, Germany; Vasileios Symeonidis, University of Education Freiburg, Germany; Mirjamajja Mikkila-Erdmann, University of Turku, Finland; Norbert Erdmann, University of Turku, Finland; Julia Nummi, University of Turku, Finland

**Bachelor's and master's thesis in teacher education**

Marte Lorentzen, Oslo Metropolitan University, Norway; Hilde Afdal, OsloMet, Norway; Hanna Holmeide, Oslo Metropolitan University, Norway

**Readiness to Teach Social and Emotional Learning: The Importance of Teacher Education Programs**

Shea Ferguson, University of South Carolina, United States; Robbie Ross, University of South Carolina, United States; Kate Ascetta, University of South Carolina, United States; Molly Dawes, University of South Carolina, United States

Session H: 18

Time: 08:00-09:30

Location: UOM\_R03

**POSTER PRESENTATION: COGNITIVE SKILLS AND PROCESSES IN EARLY CHILDHOOD AND PRIMARY EDUCATION****Chair**

Ellen Kok, Utrecht University, Netherlands

**The mediating role of children's neurocognition in the relation between physical and academic skills**

Anne de Bruijn, Vrije Universiteit Amsterdam, Netherlands; Anna Meijer, Institute of Education and Child Studies, Leiden University, Netherlands; Marsh Königs, Emma Neuroscience Group, Emma Children's Hospital, Amsterdam UMC, University of Amsterdam, Netherlands; Jaap Oosterlaan, Vrije Universiteit Amsterdam, Netherlands; Joanne Smith, Center for Human Movement Sciences, University Medical Center Groningen, University of Groningen, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands

**Effects of familiarity and complexity on inhibitory control in science learning: preliminary results**

Élisabeth Bélanger, Université du Québec à Montréal (UQAM), Canada; Lorie-Mariène Brault Foisly, Université du Québec à Montréal (UQAM), Canada; Steve Masson, Université du Québec à Montréal (UQAM), Canada; Patrice Potvin, Université du Québec à Montréal, Canada; Emmanuel Ahr, Université du Québec à Montréal (UQAM), Canada; François Thibault, Université du Québec à Montréal (UQAM), Canada

**Children's School Readiness: Roles of Executive Functioning and Cumulative Family Risks**

Kevin Kien Hoa Chung, The Education University of Hong Kong, Hong Kong; Sing Yeung Alfred Lee, The Education University of Hong Kong, Hong Kong; Cuina Catrina Liu, The Education University of Hong Kong, Hong Kong; Kevin Chan, The Education University of Hong Kong, Hong Kong; Chun Bun Lam, The Education University of Hong Kong, Hong Kong

**Let's play and talk! An intervention to support vocabulary and narrative development for 3 year olds**

MARIA EVANGELOU TSITRIDOU, International Hellenic University, Greece; Gillian Lake, DCU, Ireland; Eleni Tympa, International Hellenic University, Greece

**The Links between Executive Function, Decoding and Reading Comprehension: English-Arabic Differences**

Ibtehaj Alrushoud, University of Cambridge, United Kingdom; Rui WANG, University of Cambridge, China; Michelle Ellefson, University of Cambridge, United Kingdom

**Effect of Stereotype Threat on the Performance of Elementary School Children: A Meta-Analysis**

Fanny MAGOUTIER, University Grenoble Alpes, France; Pascal Pansu, Université Grenoble Alpes, France; Boris Vallée, université Rouen Normandie, France

Session H: 19

Time: 08:00-09:30

Location: UOM\_R01

## POSTER PRESENTATION: SOCIAL INTERACTION AND LEARNING

## Chair

Julian Fick, TU Braunschweig, Germany

**Teachers' productive error management behavior as integral part of whole class interaction**

Martin Majcák, Masaryk University, Czech Republic

**A Theoretical Conceptualization of the Quality of Pedagogical Interactions. A 2\*3\*2 Systematic**

Boris Eckstein, University of Teacher Education Zurich, Switzerland; Alexander Wettstein, PHBern / University of Bern, Switzerland

**Instructors body postures and their influence on perceived teacher enthusiasm and students' interest**

Sören Traulsen, Leibniz Universität Hannover, Germany; Lysann Zander, Leibniz Universität Hannover, Germany

**Beyond the Classroom Walls: De-encapsulation in a Change Laboratory Intervention with Adolescents**

Pauliina Rantavuori, Tampere University, Finland; Piia Ruutu, University of Helsinki, Finland; Yrjö Engeström, University of Helsinki, Finland; Maria Tapola-Haapala, University of Helsinki, Finland

**Dialogues across time and space in a video-based collaborative learning environment**

Charlotte Beal, University of South-Eastern Norway, Norway; Rolf Steier, OsloMet, Norway

**Learning, thinking and co-creating as embodied dialogue – a dialogic-inclusional approach**

Eva Vass, Western Sydney University, Australia

**Are peer interaction during school recess and motor performance related in 6- to 8-year olds?**

Dagmar Derikx, University Medical Center Groningen / University of Groningen, Netherlands; Marina Schoemaker, University Medical Center Groningen / University of Groningen, Netherlands; Suzanne Houwen, University of Groningen, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands

Session H: 20

Time: 08:00-09:30

Location: UOM\_R02

## POSTER PRESENTATION: IN-SERVICE TEACHERS' PROFESSIONAL DEVELOPMENT

## Chair

Johan Korhonen, Åbo Akademi University, Finland

**Predicting Teacher Attrition at Disadvantaged Schools – Impact of a Mentoring Intervention**

Marcus Kindlinger, University of Duisburg-Essen, Germany; Eva Anderson-Park, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany

**Teachers' Self-Regulated Learning behaviors as a predictor of self-regulated learning teaching**

Tova Michalsky, Bar-Ilan University, Israel

**School-based Professional Learning Communities in a centralized educational system**

Christina Stavrou, Cyprus Pedagogical Institute, Cyprus; Efi Paparistodemou, Cyprus Pedagogical Institute, Cyprus; Pavlina Hadjithedoulou-Loizidou, Cyprus Pedagogical Institute, Cyprus

**Measuring Content- and Technology-Related Knowledge of Teachers – Self-Reports vs. an Knowledge Test**

Timo Kosiol, Ludwig-Maximilians-Universität (LMU), Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

**Comparing Frameworks for Professional Standards and Competencies for Teacher Education Worldwide**

Susanne Narciss, TU Dresden, Germany; Jörg Zumbach, University of Salzburg, Austria

**Teachers' shift of attention in authentic teaching situation**

Maikki Pouta, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland; Tuire Palonen, University of Turku, Finland

Session H: 21

Time: 08:00-09:30

Location: UOM\_R04

**POSTER PRESENTATION: LEARNING AND INSTRUCTIONAL TECHNOLOGIES****Chair**

Bernadette Dilger, University of St.Gallen, Switzerland

**Extending Design Thinking with Digital Technologies**

Manolis Mavrikis, UCL Knowledge Lab, United Kingdom; Marcelo Milrad, Linnaeus University, Sweden; Chronis Knyigos, National and Kapodistrian University of Athens, Greece; Marianthi Grizioti, National and Kapodistrian University of Athens, Greece; Christothea Herodotou, Open University, United Kingdom; Lieva Van Langenhove, Ghent University, Belgium; Katrien Strubbe, Ghent University, Belgium; Sofia Papavlasopoulou, Norwegian University of Science and Technology (NTNU), Norway; Carina Girvan, Trinity College Dublin, Ireland; Filothei Chalvatza, SIMPLE, Greece

**Socially Withdrawn Students' Engagement in Classroom Discussions Under Three Learning Modalities**

Yue Sheng, The Ohio State University, United States; Monica Lu, The Ohio State University, United States; Ziyi Wen, The Ohio State University, United States; Eric Anderman, The Ohio State University, United States; Tzu-Jung Lin, The Ohio State University, United States; Michael Glassman, The Ohio State University, United States; Saetbyul Kim, The Ohio State University, United States

**Tools to create adaptive learning technologies without programming**

Vincent Aleven, Carnegie Mellon University, United States; Jonathan Sewall, Carnegie Mellon University, United States

**Written- or video-feedback? A study of the students' feedback use, perceptions and performance**

Ignacio Máñez, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Noemi Skrobiszewska, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Adela Descals, University of Valencia, Spain; María José Cantero, University of Valencia, Spain; Rafael García, University of Valencia, Spain; Raquel Cerdan, University of Valencia, Spain; Óscar Fernando García, University of Valencia, Spain

**The authentic use of interleaving: How can students be supported to mix categories?**

Erdem Onan, Maastricht University, Netherlands; Felicitas Biwer, Maastricht University, Netherlands; Roman Abel, Ruhr University Bochum, Germany; Wisnu Wiradhany, Binus University, Indonesia; Anique de Bruin, Maastricht University, Netherlands

**Teacher Students Discourses of Programming Activities in Teacher Education**

Jeanette Sjöberg, Halmstad university, Sweden; Emma Edstrand, Halmstad University, Sweden

Session H: 22

Time: 08:00-09:30

Location: UOM\_GYM

**ROUNDTABLE: VOCATIONAL EDUCATION AND APPRENTICESHIP TRAINING****Chair**

Taiga Brahm, University of Tübingen, Germany

**Identification in Vocational Education and Training: effects of training quality and satisfaction**

Eveline Wuttke, Goethe-Universität Frankfurt, Germany; Karin Heinrichs, Pädagogische Hochschule Oberösterreich, Austria; Kristina Kögler, University of Stuttgart, Germany

**Adolescents' mind wandering during reading on paper and screen**

Viktoria Foss, University of Stavanger, Norway

Session H: 23

Time: 08:00-09:30

Location: UOM\_A04

**WORKSHOP: VOICE WORKSHOP: SUPPORTING EARLY CHILDHOOD EDUCATION TEACHERS TO ENHANCE CHILDREN'S PARTICIPATION****VOICE workshop: Supporting Early Childhood Education Teachers to enhance children's participation**

SOFIA AVGITIDOU, Aristotle University of Thessaloniki, Greece; Vassiliki Alexiou, University of Western Macedonia, Greece; SONIA LYKOMITROU, University of Western Macedonia, Greece

Session H: 24

Time: 08:00-09:30

Location: UOM\_A06

**ICT DEMONSTRATION: APPWEL, MEASURING AND INCREASING THE SCHOOL WELL-BEING OF PUPILS****Appwel, measuring and increasing the school well-being of pupils**

Hanne Luts, PXL University of Applied Sciences and Arts/UHasselt, Belgium; Lies Hamal, PXL University College, Belgium

Session H: 25

Time: 08:00-09:30

Location: UOM\_A10

**ICT DEMONSTRATION: HUMAN-BASED SIMULATION IN A VIRTUAL SPACE: "WALK THE TALK" OF TRAINING EDUCATORS IN AN UNCERTAIN ERA****Human-based simulation in a virtual space: "walk the talk" of training educators in an uncertain era**

Orna Levin, Achva Academic College, Israel

**ANNOTATIONS:**

THIS SESSION WILL TAKE PLACE IN ROOM UOM\_W INSTEAD OF UOM\_A10.

Keynotes: 1

Time: 09:45-11:15

Location: AUTH\_CH

**KEYNOTE: WHY DENY? THE PSYCHOLOGY OF PUBLIC MISUNDERSTANDING OF SCIENCE****Chair**

Lucia Mason, University of Padova, Italy

**Why Deny? The Psychology of Public Misunderstanding of Science**

Gale Sinatra, University of Southern California, United States

Keynotes: 2

Time: 09:45-11:15

Location: HELEXPO\_CC

**KEYNOTE: INDIVIDUAL DIFFERENCES IN EARLY NUMERACY, EXECUTIVE FUNCTIONS, MOTOR SKILLS AND PHYSICAL ACTIVITY****Chair**

Jo Van Herwegen, UCL Institute of Education, United Kingdom

**Individual Differences in Early Numeracy, Executive Functions, Motor Skills and Physical Activity**

Pirjo Aunio, University of Helsinki, Finland

Keynotes: 3

Time: 09:45-11:15

Location: UOM\_CH

**KEYNOTE: JOURNAL WRITING AS MEDIUM FOR THINKING AND LEARNING****Chair**

Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

**Journal Writing as Medium for Thinking and Learning**

Matthias Nückles, University of Freiburg, Germany

Session I: 1

Time: 12:00-13:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: THE EFFECTS OF SOCIAL AND EMOTIONAL LEARNING ON CHILDREN'S COGNITIVE AND PSYCHOLOGICAL WELLBEING****Chairs**

Katriina Salmela-Aro, Helsinki University, Finland; Barbara Schneider, Michigan State University, United States

**The effects of COVID on learning outcomes and equity: international outcomes**

STEPHAN VINCENT-LANCRIN, OECD, France

**Discussant**

Felice Levine, American Educational Research Association, United States

**Immigrant and non-immigrant youth's educational and socio-emotional competence**

FROSSO MOTTI, National and Kapodistrian University of Athens, Greece

**Connecting Emotion, Cultural Context and Learning: Insights from Learning Science and Neuroscience**

Na'ilah Nasir, Spencer Foundation, United States

**Tracking Adolescents' Social and Emotional Supports During Optimal Learning Moments**

Barbara Schneider, Michigan State University, United States

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (AERA)



Session I: 2

Time: 12:00-13:30

Location: UOM\_CH

**INVITED SYMPOSIUM: THE SOCIAL DIMENSIONS OF PEER ASSESSMENT****Chair**

Tijs Rotsaert, Ghent University, Belgium

**Organisers**

Jose Carlos Ocampo, University of Deusto, Spain; Morgane Senden, Université catholique de Louvain (UCL), Belgium

**Discussant**

Javier Fernández, Universidad de Leon, Spain

**Peer assessment as a multi-level multi-process interactive practice: The M2IPA framework**

Maryam Alqassab, Universidad de Las Palmas de Gran Canaria, Spain; Jan-Willem Strijbos, University of Groningen, Netherlands; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

**Dealing with errors while providing and processing peer-feedback on texts: A mixed-methods approach**

Jochem Aben, University of Nijmegen, Netherlands; Mayra Mascareño Lara, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Filitsa Dingyloudi, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

**The impact of training and backward evaluation on students' feeling of trust during peer feedback**

Morgane Senden, Université catholique de Louvain (UCL), Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium

**Gender and Peer Feedback Content's Effects on Academic Performance and Peer Feedback Perceptions**

Jose Carlos Ocampo, University of Deusto, Spain; Ernesto Panadero, Universidad Deusto, Spain; Fernando Díez, Universidad de Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain

ANNOTATIONS:  
SIG 1 INVITED SYMPOSIUM

Session I: 3

Time: 12:00-13:30

Location: UOM\_A13

**SYMPOSIUM: THE DEVELOPMENT OF CORE PRACTICES FROM A CROSS-NATIONAL PERSPECTIVE****Chairs**

Pamela Grossman, University of Pennsylvania, United States; Urban Fraefel, University of Applied Sciences and Arts Northwestern Switzerland (PH FHNW), Switzerland

**Discussant**

Tina Seidel, Technische Universität München, Germany

**A motivational perspective on learning core practices: the case of a Dutch teacher education program**

Hanna Westbroek, Vrije Universiteit, Amsterdam, Netherlands; Anna Kaal, University of Amsterdam, Netherlands; Sebastiaan Donszelmann, University of Amsterdam, Netherlands

**Using Core Practices to Improve Connections between Theory and Practice in Teacher Education**

Kirsti Klette, University of Oslo, Norway; Inga Staal Jensen, University of Oslo, Norway; Geril Brataas, University of Oslo, Faculty of Education, Norway

**How Can the Acquisition of Core Practices be optimally fostered? A Research Agenda and First Results**

Hadmut Hipp, Albert-Ludwigs-Universität Freiburg, Germany; Anna Holstein, Leuphana University Lueneburg, Germany; Matthias Nückles, University of Freiburg, Germany; Marc Kleinknecht, Leuphana University Lueneburg, Germany

**Supporting teachers' learning through co-planning, rehearsing and co-enacting instruction**

Kjersti Waage, Norwegian University of Science and Technology (NTNU), Norway; Janne Fauskanger, University of Stavanger, Norway; Reidar Mosvold, University of Stavanger, Norway

Session I: 4

Time: 12:00-13:30

Location: AUTH\_TE1

**SYMPOSIUM: OBSTACLES AND OPPORTUNITIES: NEW INSIGHTS INTO (STUDENT) TEACHERS' ATTITUDES ON INCLUSIVE EDUCATION****Chairs**

Charlotte Sophie Schell, German Institute for International Educational Research (DIPF); IDeA-Research Center, Germany; Hannah Kleen, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Organisers**

Charlotte Sophie Schell, German Institute for International Educational Research (DIPF); IDeA-Research Center, Germany; Charlotte Dignath, TU Dortmund University, Germany; Hannah Kleen, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Discussant**

Sabine Glock, Bergische Universität Wuppertal, Germany

**Investigating Student teachers' attitudes towards children with special educational needs**

Charlotte Sophie Schell, German Institute for International Educational Research (DIPF); IDeA-Research Center, Germany; Charlotte Dignath, TU Dortmund University, Germany; Hannah Kleen, German Institute for International Educational Research (DIPF); IDeA-Research Center, Germany; Mareike Kunter, German Institute for International Educational Research (DIPF); IDeA-Research Center, Germany

**Development of the Teacher Attitude to inclusion Scale**

Christopher Boyle, University of Adelaide, Australia; Joanna Anderson, University of New England, Australia

**Teacher attitudes towards inclusion – the role of self-efficacy beliefs**

Hannu Savolainen, University of Eastern Finland, Finland; Akie Yada, University of Jyväskylä, Finland; Susanne Schwab, University of Vienna, Austria

**Enhancing values in the educational system: effects on teachers attitudes toward inclusive education**

Anne-Laure PERRIN, University of Lille -PSITEC - EA 4072, France; Mickaël Jury, Clermont Auvergne University, France; Caroline Desombre, Université de Lille, France

Session I: 5

Time: 12:00-13:30

Location: UOM\_A02

**SYMPOSIUM: THE NEURAL, (NON-)COGNITIVE AND HOME PREDICTORS OF INDIVIDUAL DIFFERENCES IN CHILDHOOD LEARNING****Chair**

Jessica Vergeer, Radboud University Nijmegen, Behavioural Science Institute, Netherlands

**Organiser**

Bob Kapteijns, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**Discussant**

Daniel Ansari, University of Western Ontario, Canada

**Home, school and cognitive predictors of individual differences in early math and reading skills**

Bob Kapteijns, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Anne van Hoogmoed, Radboud University, Netherlands; Marco van de Ven, Radboud University, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands; Rogier Kievit, Radboud University, Netherlands

**Familial influences on the neural correlates of Math and Reading**

Aymee Alvarez Rivero, University of Western Ontario, Canada; Lien Peters, The University of Western Ontario, Canada; Daniel Ansari, University of Western Ontario, Canada

**CANCELLED: Modelling neurodiversity with a generative approach**

Danyal Akarca, University of Cambridge, UK, United Kingdom; Petra E. Vértes, Department of Psychiatry, University of Cambridge, United Kingdom; Edward T. Bullmore, Department of Psychiatry, University of Cambridge, United Kingdom; the CALM team, MRC Cognition and Brain Sciences Unit, University of Cambridge, United Kingdom; Duncan E. Astle, MRC Cognition and Brain Sciences Unit, University of Cambridge, United Kingdom

**Non-cognitive characteristics in a sample of (presumable) twice-exceptional students**

Marielle Wittelings, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Lianne Hoogeveen, Radboud University, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands

Session I: 6

Time: 12:00-13:30

Location: UOM\_A04

**SYMPOSIUM: SELF-ASSESSMENT: HOW STUDENTS DO IT, HOW ACCURACY DEVELOPS OVER TIME AND THE ROLE OF FEEDBACK****Chair**

Leire Pinedo, Universidad de Deusto, Spain

**Organisers**

Leire Pinedo, Universidad de Deusto, Spain; Laurie Delnoij, Maastricht University SBE, Ts 53, Netherlands

**Discussant**

Juuso Henrik Nieminen, The University of Hong Kong, Finland

**Self-assessment accuracy over time, the role of general feedback and performance in higher education**

Laurie Delnoij, Maastricht University SBE, Ts 53, Netherlands; Christian Kerckhoffs, Maastricht University, School of Business and Economics, Netherlands; Therese Grohnert, Maastricht University, Netherlands; Simon Beusaert, Maastricht University, Netherlands

**How to improve students' self-assessment accuracy? Rubrics versus elaborated feedback**

Lucas Liebenow, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Johanna Fleckenstein, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Jennifer Meyer, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**How Learners Self-Assess Using Rubrics and Exemplars: Tracing Cognitive and Affective Processes**

Nathan Rickey, Queen's University, Canada

**How do students self-assess? Identifying self-assessment profiles in secondary and higher education**

Leire Pinedo, Universidad de Deusto, Spain; Javier Fernández, Universidad de Leon, Spain; Ernesto Panadero, Universidad Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain; Daniel Garcia, Universidad Complutense de Madrid, Spain

Session I: 7

Time: 12:00-13:30

Location: AUTH\_T002

**SYMPOSIUM: MOTIVATION-PERFORMANCE CONNECTIONS IN WRITING FROM ELEMENTARY TO SECONDARY SCHOOL****Chairs**

Ana Camacho, University of Porto, Portugal; Rui Alexandre Alves, University of Porto, Portugal

**Discussant**

Michael Hebert, University of California, Irvine, United States

**The relationship between self-regulation and writing proficiency**

Gustaf Bernhard Uno Skar, Norwegian University of Science and Technology, Norway; Steve Graham, Arizona State University, United States; Alan Huebner, University of Notre Dame, United States; Arne Johannes Aasen, Norwegian University of Science and Technology, Norway, Norway

**Development of writing motivation and its contribution to gender differences in writing performance**

Freyja Birgisdóttir, University of Iceland, Iceland; Kristján Ketill Stefánsson, University of Iceland School of Education, Iceland

**Does adding a mindset intervention to a writing program enhance writing motivation and performance?**

Ana Camacho, University of Porto, Portugal; Mariana Silva, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, Portugal; Joana Cadima, University of Porto, Portugal; Nadine Correia, ISCTE - Instituto Universitário de Lisboa, Portugal; Paula Cristina Ferreira, Instituto Politécnico de Leiria, Portugal; João R. Daniel, ISPA - Instituto Universitário / U.I.P.C.D.E., Portugal; Rui Alexandre Alves, University of Porto, Portugal

**Relating implicit beliefs, achievement goals, self-efficacy, motives, and writing performance**

Fien De Smedt, Ghent University, Belgium; Yana Landrieu, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

Session I: 8

Time: 12:00-13:30

Location: UOM\_A03

**SYMPOSIUM: WHEN DOES FEEDBACK UNFOLD ITS BENEFITS? INSIGHTS FROM STUDIES TAKING MULTIPLE PERSPECTIVES.****Chair**

Robbert Smit, University of Teacher Education St.Gallen, Switzerland

**Discussant**

Susanne Narciss, TU Dresden, Germany

**The effect of timing and elaborateness of feedback to support and teach reading comprehension**  
Elise Swart, Leiden University, Netherlands

**Hattie & Timperley's feedback levels applied for subject specific content – A math example**

Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Patricia Bachmann, University of Teacher Education St.Gallen, Switzerland

**How to receive negative feedback well? The effects of internal feedback and self-compassion**

Susanne Narciss, TU Dresden, Germany; Helena Laudel, Dresden Technical University, Germany

**Automated Feedback Effects on Interest Development: Mediated by Feedback's Perceived Usefulness**

Luca Bahr, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Lars Höft, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Thorben Jansen, Leibniz Institute for Science and Mathematics Education, Germany

Session I: 9

Time: 12:00-13:30

Location: UOM\_CR

**SYMPOSIUM: UNIVERSITY STUDENTS' MOTIVATION: RECENT DEVELOPMENTS IN EXPECTANCY-VALUE THEORY****Chairs**

Julia Dietrich, Friedrich-Schiller-University Jena, Germany; Alexander Naumann, Friedrich-Schiller-University Jena, Germany

**Discussant**

Burkhard Gniewosz, University of Salzburg, Austria

**How can motivational psychology benefit from different approaches to network analysis?**

Julia Dietrich, Friedrich-Schiller-University Jena, Germany; Miriam Jähne, Friedrich-Schiller-University Jena, Germany; Alexander Naumann, Friedrich-Schiller-University Jena, Germany; Julia Moeller, Universität Leipzig, Germany

**Stability of Motivational Profiles, the Predictive Role of Perfectionism, and Links to Well-being**

Henriikka Juntunen, University of Helsinki, Finland; Heta Tuominen, University of Eastern Finland, Finland; Riikka Hirvonen, University of Eastern Finland, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Auli Toom, University of Helsinki, Finland; Markku Niemivirta, University of Eastern Finland, Finland

**Determinants of Motivational Constellations During University Students' Exam Preparation**

Theresa Schnettler, Mannheim University, Germany; Brian M. Galla, University of Pittsburgh, United States; Anne Scheunemann, Ruhr-University Bochum, Germany; Lena Sofie Kegel, Educational Psychology, University of Münster, Germany; Stefan Fries, University of Bielefeld, Germany; Stefan Janke, University of Mannheim, Germany; Carola Grunschel, University of Münster, Germany

**Generalizability of situated expectancy-value findings: Invitation to a ManyMoments data collection**

Jessica Baars, Leipzig University, Germany; Lennart Nörenberg, Universität Leipzig, Germany; Julia Moeller, Universität Leipzig, Germany

Session I: 10

Time: 12:00-13:30

Location: AUTH\_DC2

**SINGLE PAPER: SUPPORTING STUDENT'S WRITING AND LITERACY****Chair**

Jannika Haase, Leibniz University Hannover, Germany

**Effective language programs for students who need extra language support: A systematic meta-review**

Jordi Casteleyn, Antwerp University, Belgium; Mathea Simons, University of Antwerp, Belgium; Tom Smits, Antwerp University, Belgium

**Enhancing genre knowledge of argumentative texts through learning from comPA(l)Ring exemplars**

Tine Mombaers, University of Antwerp, Belgium; Roos Van Gasse, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium

**Development of student feedback literacy through peer feedback in an online cross-cultural setting**

Qiyun Zhu, Guangdong University of Foreign Studies, China

**Student and Classroom-Level Predictors of Keyboard-Based Writing in Early Primary**

Anabela Malpique, Edith Cowan University, Australia, Australia; Debora Valcan, Murdoch University, Australia; Deborah Pino-Pasternak, University of Canberra, Australia; Susan Ledger, The University of Newcastle, Australia; Mustafa Asil, University of Otago, New Zealand; Timothy Teo, The Chinese University of Hong Kong, Hong Kong

**Analyzing the Writing Processes in the Project Fair Debating and Written Argumentation in Grade Nine**

Winnie-Karen Giera, Institute of German Studies, University of Potsdam, Germany; Lucas Deutzmann, University of Potsdam, Germany; Sarah Risse, Institute of German Studies, University of Potsdam, Germany

Session I: 11

Time: 12:00-13:30

Location: UOM\_R09

**SINGLE PAPER: INFORMAL LEARNING IN PROFESSIONAL SETTINGS****Chair**

Attila Rausch, ELTE Eötvös Loránd University, Budapest, Hungary

**The duality of online labour platforms as restrictive-expansive sites of professional learning**

Anoush Margaryan, Copenhagen Business School, Denmark

**Learning in Design Work: Developing Patient Information Systems through Object Construction**

Christopher Sadorge, University of Oslo, Faculty of Education, Norway; Monika Nerland, University of Oslo, Norway

**Use and appropriation of digital technologies in an informal work context**

Valérie Payen Jean Baptiste, University of Geneva, Switzerland

**Uncertainty as a driver for informal learning in crowdwork practices**

Karen Schwien, Helmut Schmidt University, Germany; Tim Thrun, Helmut-Schmidt-Universität Hamburg, Germany; Tobias Schlömer, Helmut-Schmidt-University/University of the Federal Armed Forces Hamburg, Germany

Session I: 12

Time: 12:00-13:30

Location: AUTH\_T202

**SINGLE PAPER: INQUIRY LEARNING IN SCIENCE EDUCATION****Chair**

Ayafumi Goto, Gifu Shotoku Gakuen University, Japan

**How Do Preschool Teachers Foster Children's Understanding of Scientific Inquiry?**

Ada Haen, University of Hamburg, Germany; Mirjam Steffensky, University of Hamburg, Germany; Ilonca Hardy, Goethe-Universität Frankfurt, Germany; Miriam Leuchter, RPTU Landau, Germany; Henrik Saalbach, University of Leipzig, Germany; Anika Bürgermeister, University of Leipzig, Germany; Katharina Junge, University of Hamburg, Germany; Laura Venitz, University of Koblenz-Landau, Germany

**How Does Critiquing Peer Ideas Help Students Revise Their Science Explanations?**

Katharina M. Bach, Ludwig-Maximilians-Universität (LMU), Germany; Sarah Bichler, Ludwig-Maximilians-Universität (LMU), Germany; Marcia Linn, University of California-Berkeley, United States

**Inquiry learning in science education with combined real and virtual experiments**

Salome Flegr, Ludwig-Maximilians-Universität (LMU), Germany; Jochen Kuhn, Ludwig-Maximilians-Universität (LMU), Germany; Katharina Scheiter, University of Potsdam, Germany

**Strengthening Creative Problem Solving in Elementary Science Education.**

Ard Lazonder, Radboud University, Netherlands; Robin Willemsen, Radboud University, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands; Isabelle de Vink, Radboud University, Netherlands

Session I: 13

Time: 12:00-13:30

Location: AUTH\_TE2

**SINGLE PAPER: TEACHER TRAINING FOR INCLUSIVE EDUCATION****Chair**

Iro Xenidou-Dervou, Loughborough University, United Kingdom

**Does teacher training support implementing inclusive education? - A systematic meta-analysis**

Elisabeth Graf, University of Vienna, Austria; Johanna Donath, University of Vienna, Austria; Timo Lücke, University of Graz, Austria; Thomas Götz, Developmental and Educational Psychology, Austria

**Content and duration of inclusive training: systematic review and analysis of teachers' discourse**

Kamilla Khamzina, Université de Lille, France; Arnaud STANCZAK, Université Blaise Pascal - Clermont-Ferrand II, France; Celenie Brasselet, Université de Lille, France; Federica Cilia, Université de Picardie Jules Verne, France; Nicolas Guirimand, Université de Rouen Normandie, France; Sandrine Rossi, Université de Caen, France; Camille Legrain, Université de Lille, France; Caroline Desombre, Université de Lille, France

**Validation of a French scale to assess educators' attitudes toward inclusive education**

Camille Legrain, Université de Lille, France; Célénie Brasselet, Université de Lille, France; Kamilla Khamzina, Université de Lille, France; Mickaël Jury, Clermont Auvergne University, France; Caroline Desombre, Université de Lille, France

**Measurement of Multidimensional Classroom Composition Using The Concept of Hypervolumes**

Merle-Sophie Thielmann, University of Mannheim, Germany; Karina Karst, University of Mannheim, Germany

Session I: 14

Time: 12:00-13:30

Location: AUTH\_T102

**SINGLE PAPER: SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE****Chair**

Natalie de Nóbrega dos Santos, ISPA-Instituto Universitário, Portugal

**The (Un)political Perspective on Climate Change in Education—A Systematic Review**

Martin Schwichow, University of Education Freiburg, Germany; Johanna Kranz, Center of Excellence for Climate Change Impacts, Research Institute of Forest Ecology and Forestry Rhineland-Palatinate, Germany; Petra Breitenmoser, Zurich University of Teacher Education &amp; University of Zurich, Switzerland; Kai Niebert, Institute of Education, University of Zurich, Switzerland

**Using Data to inform Classroom Practice for Climate Change Education**

Paul Howard-Jones, University of Bristol, United Kingdom; Nicola Warren-Lee, University of Bristol, United Kingdom; Chris Aldred, Sidcot School, Winscombe, United Kingdom

**Scientific literacy, agency and the future: students' images of sociotechnical change**

Tapio Rasa, University of Helsinki, Finland; Jari Lavonen, University of Helsinki, Finland; Antti Laherto, University of Helsinki, Finland

**Students' meaningmaking processes in a school project about sustainable development**

Anniken Furberg, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway; Marthe Wiseth Fundingsrud, Department of Teacher Education and School Research, University of Oslo, Norway

Session I: 15

Time: 12:00-13:30

Location: UOM\_A11

**SINGLE PAPER: SOCIAL ASPECTS OF LEARNING IN THE CLASSROOM****Chair**

Stephanie Pieschl, Technical University of Darmstadt, Germany

**Engagement as an emergent, collective process: A review of the literature**

Mayra Mascareño Lara, University of Groningen, Netherlands; Elisa Kupers, University of Groningen, Netherlands; Naomi de Ruiter, University of Groningen, Netherlands; Fenna Wolthuis, University of Groningen, Netherlands

**Evidence for Reciprocal Effects in the Classroom: An Explorative Approach**

Alexander Jonas Jung, Hector Research Institute of Education Sciences and Psychology, Germany; Cora Parrisius, University of Education Karlsruhe, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany; Kou Murayama, Eberhard Karls Universität Tübingen, Germany

**Dynamic social network perspective on interaction in collaborative learning in elementary classrooms**

Tomáš Lintner, Masaryk University, Czech Republic; Tomáš Diviák, University of Manchester, United Kingdom; Zuzana Šalamounová, Masaryk University, Czech Republic; Klara Sedova, Masaryk University, Czech Republic; Martin Sedláček, Masaryk University, Czech Republic; Roman Švaříček, Masaryk University, Czech Republic

**Assessing a peer mediation teaching intervention in primary school: Pupils' perceptions**

Angeliki Lithoxoidou, University of Western Macedonia, Greece

Session I: 16

Time: 12:00-13:30

Location: UOM\_A05

**SINGLE PAPER: ENGLISH AS A FOREIGN LANGUAGE AND BILINGUAL EDUCATION****Chair**

Erika Maksniemi, University of Helsinki, Finland

**Effect of Linguistic challenges on pre-service teachers' self-efficacy in English medium instruction**

Charles Selorm Dzormeku, University of Turku, Finland; Koen Veermans, University of Turku, Finland; Jake McMullen, University of Turku, Finland

**Teacher students' understanding of migrants' identities in fiction in the context of EFL**

Jon Brodal, Western Norway University of Applied Sciences, Norway

**Capturing Professional Bilingual Teachers' Conceptualisation(s) of their Professionalism**

Luisa Scherzinger, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany

**Effects of inhibitory control on language development in dual-language learning preschoolers**

Robin Segerer, University of Basel, Switzerland; Leila Teresa Schächinger Tenés, Faculty of Psychology, University of Basel, Switzerland, Switzerland; Jessica Carolyn Weiner, University of Basel, Switzerland; Alexander Grob, University of Basel, Switzerland

Session I: 17

Time: 12:00-13:30

Location: AUTH\_DC3

**SINGLE PAPER: PRE-SERVICE TEACHERS' COMPETENCIES****Chair**

Laura Outhwaite, University College London, IOE, United Kingdom

**Reflective Competence Development in Teacher Education – Becoming Professional through Podcasting**

Annette Busse, University of Kassel, Institute of Educational Science, Germany; Dorit Bosse, University of Kassel, Institute of Educational Science, Germany

**Principals' views on new teachers' competence – A Q study in Sweden**

Adrian Lundberg, Malmö University, Sweden; Philippe Collberg, Halmstad University, Sweden; christina lindh, Faculty of Teacher Education, University of Kristianstad, Sweden

**How do pre-service teachers perceive the teacher's role in guiding students' peer interactions?**

Olli-Pekka Heinimäki, University of Turku, Finland; Anu Kajamies, University of Turku, Finland; Mikko Tiilikainen, University of Turku, Finland; Marja Vauras, University of Turku, Finland

**Teacher education in conflict-affected societies: What future teachers in Iraq learn post-ISIS?**

Vasileios Symeonidis, University of Education Freiburg, Germany; Heike Wendt, University of Graz, Austria; Amal Zedan, University of Mosul, Iraq; Felix Senger, TU Dortmund University, Germany; Saraa Salim, University of Mosul, Iraq; Fawzi Jebrael Ibrahim, University of Mosul, Iraq

Session I: 18

Time: 12:00-13:30

Location: AUTH\_DC1

**SINGLE PAPER: FAMILY BELIEFS, ATTITUDES AND RELATIONSHIPS: ASSOCIATIONS WITH CHILDREN SOCIAL SKILLS****Chair**

Dangeni Dangeni, Newcastle University, United Kingdom

**Childbearing motivation, postpartum depression, and child adjustment: A 5-year longitudinal study**

Reut Nachoum, Bar Ilan University, Israel; Anat Moed, Bar Ilan University, Israel; Nir Madjar, Bar Ilan University, Israel; Yaniv Kanat-Maymon, Reichman University, Israel

**Relations between maternal perfectionism, young children's forgiveness, and social skills**

Bertha Hei Ching Kum, The Education University of Hong Kong, Hong Kong; Sum Kwing Cheung, The Education University of Hong Kong, Hong Kong; Rebecca Y. M. Cheung, University of Reading, United Kingdom

**Profiles of sibling relationships and their association with social-emotional skills**

Elena Wittmann, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Ilka Wolter, Leibniz Institute for Educational Trajectories (LIfBi), Germany

Session I: 19

Time: 12:00-13:30

Location: UOM\_R05

**SINGLE PAPER: TEACHER EMOTIONS****Chair**

Izaak Dekker, Amsterdam University of Applied Sciences (AUAS), Netherlands

**Teacher Education and Social and Emotional Learning: A Swedish Case Study of Intended Curriculum**

Blanka Rósa, Stockholm University, Sweden

**Genuine, Faked, and Hidden Teacher Emotions in the Classroom: Are they Transmitted to Students?**

Irena Burić, University of Zadar, Croatia; Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Barbara Balaž, Catholic University of Croatia, Croatia

**The passion transmission model: Examining the mediating role of emotions**

Tanya Chichekian, Université de Sherbrooke, Canada; Robert Vallerand, Université du Québec à Montréal, Canada

**Mentoring teachers' perspective of student teachers' emotional challenges**

Henrik Lindqvist, Linköping University, Sweden; Maria Weurlander, Stockholm University, Sweden; Linda Barman, KTH, Royal Institute of Technology, Sweden; Annika Wernerson, Karolinska Institutet, Sweden; Robert Thornberg, Linköping University, Sweden

Session I: 20

Time: 12:00-13:30

Location: UOM\_R02

## POSTER PRESENTATION: LEARNING AND INSTRUCTION DURING COVID-19

## Chair

JUNYI YANG, University of Oslo, Norway

**Patterns of Teachers' Occupational Well-Being During the COVID-19 Pandemic**

Sanni Pöysä, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkänen, University of Jyväskylä, Finland

**A comparison of students' well-being before, during and after the peak of the COVID-19 pandemic**

Josina Schriek, University of Hildesheim, Germany; Bastian Carstensen, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Renate Soellner, University of Hildesheim, Germany; Uta Dr. Klusmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Children's descriptions and drawings of SARS-CoV-2**

Vasilía Christidou, Aristotle University of Thessaloniki, Greece; Fotini Bonoti, University of Thessaly, Greece; Penelope Papadopoulou, University of Western Macedonia, Greece; Polixeni Doumpala, Aristotle University of Thessaloniki, Greece

**A learning analytics approach to teachers' use of ICT during and after the COVID-19 health crisis**

Catalina Lomos, LISER - Luxembourg Institute for Socio Economic Research, Luxembourg; Hans Luyten, University of Twente, Netherlands; Frauke Kesting, SCRIPT (Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques), Luxembourg; Filipe Lima da Cunha, SCRIPT (Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques), Luxembourg

**Re-Personalizing and Re-Socializing the Cognitive Processes of Distance Learning**

William Whitten II, Total Experience Design, LLC, United States; Sandra E. Whitten, Fordham University, United States

**Teachers' Perception of miscommunication between educational policy and schools during COVID-19**

Julia Hafenscher, University of Vienna, Austria; Flora Woltran, University of Vienna, Austria

Session I: 21

Time: 12:00-13:30

Location: UOM\_R01

## POSTER PRESENTATION: READING COMPREHENSION

## Chair

Radel James Gacumo, University of Stavanger, Norway

**Writing your own story about a statistical graph is more interesting than reading one**

Liva Martinussen, University of Oslo, Norway; Anine Riege, University of Oslo, Norway; Rolf Reber, University of Oslo, Switzerland

**Reading Fluency: Influences of Word Recognition and Comprehension**

Luciana Vellinho Corso, Universidade Federal do Rio Grande do Sul (UFRGS), Brazil; Amanda Oliveira Meggiato, Universidade Federal do Rio Grande do Sul, Brazil; Helena Corso, Universidade Federal do Rio Grande do Sul, Brazil; RAQUEL WEBER, Universidade Federal do Rio Grande do Sul, Brazil; Fabiana de Miranda Rocha Luna, Universidade Federal do Rio Grande do Sul, Brazil

**Reading achievement in a national university admission assessment: impact of motivation dimensions**

Gabriela Gabriela Gómez, Universidad de O'Higgins, Chile; Marlene Rivas, Pontificia Universidad Católica de Chile, Chile

**Are speech sound difficulties a marker of difficulties in language and later reading skills?**

Line Walquist Søri, UiT The Arctic University of Norway, Norway; Trude Nergard Nilssen, UiT The Arctic university of Norway, Norway; Monica Melby-Lervåg, University of Oslo, Norway; Bjarte Furnes, University of Bergen, Norway; Ømur Caglar-Ryeng, UiT The Arctic University of Norway, Norway

**Do we understand the same when reading on tablets as we do on paper? A multilevel meta-analysis**

Lidia Altamura García, University of Valencia, Spain; Anastasia Karagiorgi, Julius-Maximilians-Universität, Würzburg, Germany; Cristina Vargas, University of Valencia, Spain; Ladislao Salmerón, University of Valencia, Spain

Session I: 22

Time: 12:00-13:30

Location: UOM\_R03

**POSTER PRESENTATION: LEARNING AND INSTRUCTIONAL TECHNOLOGIES****Chair**

David Corradi, University of Antwerp, Belgium

**Promoting Effective Scaffolding for Self-Regulated Learning Strategies**

Tongguang Li, Monash University, Australia

**On the perception of social robots by higher education students**

Josef Guggemos, University of Education Schwäbisch Gmünd, Germany; Stefan Sonderegger, University of St. Gallen, Switzerland; Sabine Seufert, University of St.Gallen, Switzerland

**Building Learning Theories with AI-Enhanced Conjectural Mapping**

Junsong Huang, National Institute of Education, Singapore; Susan Gwee, National Institute of Education/Nanyang Technological University, Singapore, Singapore; Jing Wu, National Institute of Education, Singapore; Simone Ann D Souza, National Institute of Education, Singapore

**SENSEitive Systems: Can physiological and eye-tracking data be indicators of learner emotions?**

Sharanya Lal, University of Twente, Netherlands; Tessa Eysink, University of Twente, Netherlands; Hannie Gijlers, University of Twente, Netherlands; Bernard Veldkamp, University of Twente, Netherlands; Willem Verwey, University of Twente, Netherlands

**Long-term relations between teachers' attitudes towards technology and its use in the classroom**

Barbara Rončević Zubković, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia; Rosanda Pahljina-Reinić, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia; Martina Bažon, University of Rijeka, Faculty of Humanities and Social Sciences, Rijeka, Croatia; Svjetlana Kolić-Vehovec, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia

**Undergraduates' perceptions of an online training to integrate conflicting sources in writing**

Ruth Villalon, University of Cantabria, Spain; Maria Luna, Universidad a Distancia de Madrid (UDIMA), Spain; Isabel Martínez-Álvarez, Madrid Open University, Spain; Mar Mateos, Universidad Autónoma de Madrid, Spain

Session I: 23

Time: 12:00-13:30

Location: UOM\_GYM

**ROUNDTABLE: MENTORING AND COACHING****Chair**

Athanasios Verdis, National and Kapodistrian University of Athens, Greece

**Internships and its influence on self-assessed competences of teacher students**

Carina Caruso, University of Paderborn, Germany

**An exploratory study: perspectives of mentors on longterm internships at school**

Carina Caruso, University of Paderborn, Germany; Michael Goller, Educational Science Institute (University of Paderborn), Germany

**Second career teachers to the rescue? New insights on the development of their teaching skills**

Tamar Tas, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Saskia Brokamp, Utrecht University of Applied Sciences, Netherlands; Mieke Koeslag-Kreunen, Universiteit Utrecht / Hogeschool Utrecht, Netherlands

**Enabling Emerging Teacher Resilience through Reflective Writing**

Mikko Tiilikainen, University of Turku, Finland; Olli-Pekka Heinimäki, University of Turku, Finland; Janne Lepola, Univ. of Turku, Finland; Anu Kajamies, University of Turku, Finland

Session I: 24

Time: 12:00-13:30

Location: UOM\_R08

**WORKSHOP: FLORERAAR?! A BOARD-GAME TO ENHANCE (PRE-SERVICE) TEACHERS' RESILIENCE****FLORERAAR?! A board-game to enhance (pre-service) teachers' resilience**

Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Irene Poort, University of Groningen, Netherlands; Saskia Tuenter, University of Groningen, Netherlands; Michelle Gemmink, University of Groningen / Katholieke Pabo Zwolle, Netherlands

Session I: 25

Time: 12:00-13:30

Location: UOM\_A10

**ICT DEMONSTRATION: DESIGNING TECHNOLOGY TO SUPPORT MULTIMODAL DIALOGUE AND PARTICIPATION: THE THIRD GENERATION TALKWALL****Designing technology to support multimodal dialogue and participation: the third generation Talkwall**

Ingwill Rasmussen, University of Oslo, Norway; Louis Major, University of Manchester, United Kingdom; Anja Amundrud, University of Oslo, Norway; Kari Anne Rødnes, University of Oslo, Norway; Jo Inge Johansen Frøyflog, University of South-Eastern Norway, Norway; Ole Smørðal, University of Oslo, Norway; Maren Omland, OsloMet, Norway



Session J: 1

Time: 14:45-16:15

Location: UOM\_A03

**INVITED SYMPOSIUM: AESTHETIC EXPERIENCE AS A TOOL FOR LEARNING AND DEVELOPMENT****Chair**

Laure KLOETZER, Institute of Psychology & Education,  
University of Neuchâtel, Switzerland

**Discussant**

Antonio Iannaccone, University of Neuchâtel, Switzerland

**"SIC EST": THE ARTEDUCATION OF MAESTRI DI STRADA VIDEO-NARRATED BY A GROUP OF ADOLESCENTES**

ELISABETTA FENIZIA, University of Naples Federico II, Italy; Filomena Carillo, Non-profit Association Maestri di Strada, Italy; Santa Parello, University Federico II of Naples, Italy

**Semiotising the aesthetic experience in education: multimodality in students' diaries**

Ramiro Tau, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Laure KLOETZER, Institute of Psychology & Education, University of Neuchâtel, Switzerland

**Choice Poetics in Interactive Digital Narrative Design Learning**

Yasmeen ElGerbi, CUNY Graduate Center, Libya; Colette Daiute, The Graduate Center, CUNY, United States; John T. Murray, CUNY Graduate Center, United States

**Learning from one's own aesthetic inner world: aesthetics as a modality of language**

Maurin Coralie, Institut National de la Recherche pour l'Agriculture et L'Environnement, France

**ANNOTATIONS:**

SIG 10 INVITED SYMPOSIUM

Session J: 2

Time: 14:45-16:15

Location: AUTH\_CH

**INVITED PANEL: SUPPORTING RESEARCHERS AT RISK: THE KEY ROLE OF EUROPEAN ACADEMIA****Chair**

Ioanna Kostarella, Aristotle University of Thessaloniki,  
Greece

**Supporting Researchers at risk: the key role of European Academia**

Joel Hanisek, SAR Europe, Maynooth University, Ireland; Andreas Takis, Aristotle University of Thessaloniki, Greece; Frank Albrecht, Alexander von Humboldt Foundation, Germany; Malamati Tsapoutzoglou, Aristotle University of Thessaloniki, Greece; Yudit Namer, University of Twente, Netherlands

Session J: 3

Time: 14:45-16:15

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: CONTRIBUTIONS OF GREEK PSYCHOLOGICAL RESEARCH IN EDUCATION****Chair**

NIKOLAOS MAKRIS, Democritus University of Thrace,  
Greece

**Organiser**

- Hellenic Psychological Society, Hellenic Psychological  
Society, Greece

**Discussant**

NIKOLAOS MAKRIS, Democritus University of Thrace,  
Greece

**TPFRS: A new measure for assessing resilience in teachers**

Athena Daniilidou, University of Macedonia, Greece; Maria Platsidou, University of Macedonia, Greece

**What do Greek teachers need to better support students with special learning needs?**

Eirini Karakasidou, Panteion University of Social and Political Sciences, Greece; Olga Lainidi, University of Leeds, United Kingdom; Anastassios Stalikas, Panteion University, Greece

**The combined effect of cognitive factors on preprimary and primary school students' narrative skills**

Alexandra Karousou, Democritus University of Thrace, Greece; Dimitra Oikonomakou, Democritus University of Thrace, Greece; Smaragda Kazi, Panteion University of Social and Political Sciences, Greece; Tryfonas Bikos, Democritus University of Thrace, Greece

**Preservice teachers' epistemic and educational beliefs on their educational practices**

Anastasia/Natassa Kyriakopoulou, National & Kapodistrian University of Athens, Greece; Irini Skopeliti, University of Patras, Greece

**ANNOTATIONS:**

INVITED SYMPOSIUM OF THE HELLENIC PSYCHOLOGICAL SOCIETY

Session J: 4

Time: 14:45-16:15

Location: UOM\_CH

**INVITED SYMPOSIUM: IMPROVING UNIVERSITY TEACHING THROUGH TEACHERS' PROFESSIONAL LEARNING AND DEVELOPMENT****Chair**

Jan Vermunt, Eindhoven University of Technology, Netherlands

**Organisers**

Perry den Brok, Eindhoven University of Technology, Netherlands; Frans Prins, Utrecht University, Netherlands

**Discussant**

Vincent Donche, University of Antwerp, Belgium

**Academics' pedagogical training: Effects on teachers and students' outcomes, a multilevel analysis**

Marian Ilie, West University of Timisoara, Romania; Jan Vermunt, Eindhoven University of Technology, Netherlands; Velibor Mladenovici, West University of Timisoara, Romania; Zselyke Pap, Department of Psychology, West University of Timisoara, Romania; Laurențiu P. Maricuțoiu, Center for Academic Development and Department of Psychology, West University of Timisoara, Romania

**How does developing an innovation as part of a PDI impact mid-career teachers' learning?**

Indira Day, Utrecht University, Netherlands; Tim Stevens, Eindhoven University of Technology, Netherlands; Frans Prins, Utrecht University, Netherlands; Perry den Brok, Eindhoven University of Technology, Netherlands; Jan Vermunt, Eindhoven University of Technology, Netherlands

**HE pedagogy developers' regulation skills and ways to develop their own pedagogical expertise**

Mari Murtonen, University of Turku, Finland; Henna Virtanen, University of Turku, Finland; Henna Vilppu, University of Turku, Finland

**Supporting teachers' learning in the context of self-initiated educational innovations: what works?**

Tim Stevens, Eindhoven University of Technology, Netherlands; Remco Coppoolse, Utrecht University of applied science, Netherlands; Roeland M. Van der Rijst, ICLON-Leiden University Graduate School of Teaching, Netherlands; Arjen de Vetten, VU University Amsterdam, Netherlands; Indira Day, Utrecht University, Netherlands; Perry den Brok, Eindhoven University of Technology, Netherlands; Frans Prins, Utrecht University, Netherlands; Jan Vermunt, Eindhoven University of Technology, Netherlands

ANNOTATIONS:  
SIG 4 INVITED SYMPOSIUM

Session J: 5

Time: 14:45-16:15

Location: AUTH\_DC2

**SYMPOSIUM: UNDERSTANDING AND DEVELOPING TEACHER PRACTICES THAT PROMOTE SELF-REGULATED LEARNING****Chair**

Michael Lawson, Flinders University, Australia

**Discussant**

Patricia Alexander, University of Maryland, United States

**Using the COACTIV model to explain teachers' SRL professional competence**

Charlotte Dignath, TU Dortmund University, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

**A "Triple SRL-SRT Framework" for Supporting Teachers Self-regulation and Students' Outcomes**

Bracha Kramarski, Bar-Ilan University, Israel; Orna Heaysman, Hemdat College of Education, Israel

**Helping pre-service teachers improve the indirect promotion of SRL in the classroom**

Helen Stephenson, University of South Australia, Australia; Sean Kang, The University of Melbourne, Australia; Wendy Scott, The University of Melbourne, Australia

**How teachers promote self-regulated learning: A classroom observation study**

Stella Vosniadou, Flinders University, Australia; Erin Bodner, Flinders University, Australia; Michael Lawson, Flinders University, Australia; Lorraine Graham, The University of Melbourne, Australia

Session J: 6

Time: 14:45-16:15

Location: AUTH\_T002

**SYMPOSIUM: DIFFERENT PERSPECTIVES ON THE IMPACT OF COGNITIVE SKILLS ON EARLY ACADEMIC ACHIEVEMENT****Chair**

Michelle N. Maurer, University of Oslo, Norway

**Discussant**

Bert De Smedt, KU Leuven, Belgium

**Cognitive skills and academic achievement: a person-centered approach.**

Erica Kamphorst, University of Groningen, Netherlands; Gerda van der Veer, University of Groningen, Netherlands; Suzanne Houwen, University of Groningen, Netherlands; Marja Cantell, University Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands

**The development of handwriting processes and involved cognitive processes**

Lidia Jana Truxius, PHBern, University of Teacher Education, Switzerland; Michelle N. Maurer, University of Oslo, Norway; Judith Sägesser, University of Teacher Education Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

**Executive Functions: Development and differential profiles in first grade children**

Michelle N. Maurer, University of Oslo, Norway; Claudia Roebers, University of Bern, Switzerland

**A network model of cognitive and affective variables related to mathematics achievement**

Anne van Hoogmoed, Radboud University, Netherlands; Paul Adriaanse, Radboud University Nijmegen, Netherlands; Myrthe Vermeiden, Radboud University Nijmegen, Behavioural Science Institute, Netherlands; Rianne Weggemans, Radboud University Nijmegen, Netherlands

Session J: 7

Time: 14:45-16:15

Location: AUTH\_DC3

**SYMPOSIUM: STUDENTS AS CITIZENS: EXPLORING LIVED DEMOCRATIC CITIZENSHIP THROUGH ATTITUDES AND BEHAVIORS****Chair**

Bjorn Wansink, Utrecht University, Netherlands

**Organiser**

Minke Krijnen, Leiden University, Netherlands

**Discussant**

Jeremy Stoddard, University of Wisconsin - Madison, United States

**Diverse Sources of Trust: Sense of School Membership, Generalized Social Trust and School Diversity**

Willemijn Rinnooy Kan, Amsterdam University of Applied Sciences (AUAS), Netherlands; Anke Munniksma, University of Amsterdam, Netherlands; Monique Volman, University of Amsterdam, Netherlands

**Teachers Are Important for Political Tolerance – Results from ICCS 2016**

Johanna Fee Ziemes, University of Duisburg-Essen, Germany

**CANCELLED: The Imagined Other in Classroom Deliberations (...)**

Lee Jerome, Middlesex University, United Kingdom; Anna Liddle, Sheffield Hallam University, United Kingdom; Helen Young, London South Bank University, United Kingdom

**Teacher Practices Shape The Elementary Classroom as Practice Ground for Democracy**

Minke Krijnen, Leiden University, Netherlands; Bjorn Wansink, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands; Tim Mainhard, Leiden University, Netherlands

Session J: 8

Time: 14:45-16:15

Location: UOM\_CR

**SYMPOSIUM: A LOOK BEHIND IMMERSIVE SCENES: EXPERIMENTS ON EFFECTIVE LEARNING IN VIRTUAL REALITY ENVIRONMENTS****Chairs**

Christian Hartmann, Technical University Munich, Germany; Valentina Nachtigall, Ruhr University Bochum, Germany

**Organisers**

Christian Hartmann, Technical University Munich, Germany; Valentina Nachtigall, Ruhr University Bochum, Germany

**Discussant**

Eleni Kyza, Cyprus University of Technology, Cyprus

**Imagine & immerse yourself: Does visual-spatial-imagery moderate learning in virtual reality?**

Christian Hartmann, Technical University Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany

**Embodied interaction in virtual reality for learning mathematics**

Julia Chatain, ETH Zurich, Switzerland; Robert W. Sumner, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland

**Aids to learning in virtual reality: Adding individual and collaborative generative activities**

Gustav Petersen, University of Copenhagen, Denmark; Valdemar Stenberdt, University of Copenhagen, Denmark; Richard E. Mayer, University of California, United States; Guido Makransky, University of Copenhagen, Denmark

**Promoting cognitive processing of 360° videos through emotion regulation and collaboration**

Valentina Nachtigall, Ruhr University Bochum, Germany; Selina Yek, Ruhr-University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany

Session J: 9

Time: 14:45-16:15

Location: AUTH\_DC1

**SYMPOSIUM: SELF-REGULATED LEARNING AT DIFFERENT LEVELS OF GRANULARITY: FROM SINGLE LESSONS TO ENTIRE LECTURES****Chairs**

Luise von Keyserlingk, TU Dortmund University, Germany; Fani Laueremann, University of Bonn, Germany

**Discussant**

Philip Winne, Simon Fraser University, Canada

**Triangulation and Integration of Measuring Self-regulated Learning with Trace and Think Aloud Data**

Yizhou Fan, Peking University, China; Mladen Raković, Monash University, Australia; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Lyn Lim, Technical University of Munich, Germany; Shaveen Singh, Monash University, Australia; Johanna Moore, University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Maria Bannert, Technical University of Munich (TUM), Germany; Dragan Gasevic, Monash University, Australia

**Studying Cyclical and Temporal Aspects of Self-Regulated Learning with Validated Digital Trace Data**

Jeff Greene, University of North Carolina at Chapel Hill, United States; Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Michael Berro, University of North Carolina at Chapel Hill, United States; Robert Plumley, University of North Carolina at Chapel Hill, United States; Shelbi Kuhlmann, University of North Carolina at Chapel Hill, United States

**From Time to Deadline to Time After Deadline: Steady Study Activities are Key for Course Performance**

Luise von Keyserlingk, TU Dortmund University, Germany; Fani Laueremann, University of Bonn, Germany; Renzhe Yu, Teachers College, Columbia University, United States; Qiuji Li, University of California, Irvine, United States; Jutta Heckhausen, University of California, Irvine, United States; Jacquelynne S. Eccles, University of California, Irvine, United States; Richard Arum, University of California, Irvine, United States

**Self-testing in Higher Education: What Predicts the Use of Self-testing and Who Achieves Their Goals**

Jakob Schwerter, Institute for School Development Research (IFS), TU Dortmund, Germany; Fani Laueremann, University of Bonn, Germany; Taiga Brahm, University of Tübingen, Germany; Kou Murayama, University of Tübingen, Germany

Session J: 10

Time: 14:45-16:15

Location: UOM\_A02

**SYMPOSIUM: WELL-BEING IN SCHOOL AS A HOPE IN CHALLENGING TIMES: INSIGHTS FROM VARIOUS PERSPECTIVES****Chair**

Caroline Mansfield, University of Notre Dame Australia, Australia

**Organisers**

Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Julia Morinaj, University of Bern, Switzerland

**Discussant**

Daniela Raccanello, University of Verona, Italy

**Framing teacher well-being: A study with Portuguese teachers**

Francisco Peixoto, ISPA - Instituto Universitário | Center for Research in Education, Portugal; José Castro Silva, ISPA - Instituto Universitário, Portugal

**Teachers' and principals' work engagement and work burnout during the pandemic**

Katriina Salmela-Aro, Helsinki University, Finland; Katja Upadyaya, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland

**Understanding the resilience process that supports teacher well-being**

Isabelle Kruppenacher, Abteilung für Schul- und Unterrichtsforschung, Institut für Erziehungswissenschaft, Bern, Switzerland; Irene Guidon, PHBern, University of Teacher Education, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Julia Morinaj, University of Bern, Switzerland; Caroline Mansfield, University of Notre Dame Australia, Australia; Susan Beltman, Curtin University, Australia

**How to choose strategies to enhance art-of-living and well-being in high school students**

Corinna Anders, TU Darmstadt, Germany

Session J: 11

Time: 14:45-16:15

Location: UOM\_R08

**SINGLE PAPER: TWITTER COMMUNITIES: INFORMAL LEARNING AND SOCIAL ASPECTS****Chair**

Sietske van Viersen, Utrecht University, Netherlands

**The Social Side of Digitization: Knowledge Mobilization among Educational Professionals on Twitter**

Martin Rehm, University of Regensburg, Germany; Lennart Klein, Universität Tübingen, Germany; Tim Fütterer, University of Tübingen, Germany; Christian Fischer, Hector Research Institute of Education Sciences and Psychology, Germany; Marie Lockton, University of California, San Diego, United States; Anita Caduff, University of California, San Diego, United States; Alan J Daly, University of California, San Diego, United States

**Twitter's Potential for Knowledge Brokers to Improve their Knowledge Mobilization Efforts**

Anita Caduff, University of California, San Diego, United States; Martin Rehm, University of Regensburg, Germany; Marie Lockton, University of California, San Diego, United States; Alan Daly, University of California, San Diego, United States

**How do Teachers in German Twitter Communities Share, Perceive, and Use Materials?**

Fitore Morina, University of Tübingen, Germany; Tim Fütterer, University of Tübingen, Germany; Joshua M. Rosenberg, University of Tennessee-Knoxville, United States; Jeffrey Carpenter, Elon University, United States; Christian Fischer, University of Tübingen, Germany

**Online Communities of Practice on Twitter: A Case Study of the German Educational Twittersphere**

Christian Fischer, University of Tübingen, Germany; Fitore Morina, University of Tübingen, Germany; Conrad Borchers, Carnegie Mellon University, United States; Lennart Klein, University of Tübingen, Germany

**Complementing "Traditional" School Organization - Leveraging Social Opportunity Spaces on Twitter**

Martin Rehm, University of Regensburg, Germany; Marie Lockton, University of California, San Diego, United States; Anita Caduff, University of California, San Diego, United States; Regina Mulder, University of Regensburg, Germany; Alan J Daly, San Diego State University &amp; University of California, San Diego, United States

Session J: 12

Time: 14:45-16:15

Location: UOM\_A13

**SINGLE PAPER: TEACHER SELF-EFFICACY****Chair**

Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

**Self-Efficacy and Emotions in Teachers: A Random Intercept Cross-Lagged Panel Model**

Barbara Balaž, Catholic University of Croatia, Croatia; Irena Burić, University of Zadar, Croatia; Mara Šimunović, Institute of Social Sciences Ivo Pilar, Croatia

**Instructional Self-Efficacy and Student Resistance: Beliefs Matter**

Jenefer husman, University of Oregon, United States; Maura Borrego, University of Texas - Austin, United States; Cynthia Finelli, University of Michigan, United States; Michael Prince, Bucknell University, United States; Lea Marlör, University of Michigan, United States

**Patterns of Teacher Self-Efficacy: A Latent Profile Analysis with Secondary School Teachers.**

Jing Huang, Lingnan University, Hong Kong; Youliang Zhang, Beijing University of Technology, China

**"I believe in my skills!" - A meta-analysis on intervention studies promoting teacher self-efficacy.**

Janina Täschner, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany

Session J: 13

Time: 14:45-16:15

Location: UOM\_A07

**SINGLE PAPER: CHILDREN'S NUMERACY LEARNING AND DEVELOPMENT****Chair**

Hans Christian Arnseth, University of Oslo, Norway

**Underlying mechanisms of number comparison skills in young children**

David Munez, National Institute of Education / Nanyang Technological University, Singapore; Josetxu Orrantia, University of Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, Univeresity of Salamanca, Spain; Veronica Carreton, Universidad de Salamanca, Spain

**How does early maths develop? A visual representation of domain-specific maths skills across time.**

Zahra Siddiqui, UCL, United Kingdom; Laura Outhwaite, University College London, IOE, United Kingdom; Jo Van Herwegen, UCL Institute of Education, United Kingdom

**Mediated paths from early fine motor and executive function skills to later math and reading fluency**

Kiat Hui Khng, National Institute of Education/Nanyang Technological University, Singapore, Singapore; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Beth Ann O'Brien, National Institute of Education/Nanyang Technological University, Singapore, Singapore; EeLynn Ng, National Institute of Education, Singapore

**Executive function and academic outcomes across development: from kindergarten to secondary school**

Dieuwer ten Braak, University of Stavanger, Norway; Ragnhild Lenes, University of Stavanger, Norway; Ingunn Størksen, University of Stavanger, Norway

Session J: 14

Time: 14:45-16:15

Location: AUTH\_TE2

**SINGLE PAPER: LEARNING AND PROFESSIONAL DEVELOPMENT IN HEALTHCARE EDUCATION****Chair**

Asa Makitalo, University of Gothenburg, Sweden

**Professional development emanating from new technologies in nurses' work**

Regina Mulder, University of Regensburg, Germany; L. Romina Bornhaupt, University of Regensburg, Germany; Patrick Beer, University of Regensburg, Germany

**Evidence-Based Practices of nursing students during clinical internships**

Carla Quesada-Pallarès, Universitat Autònoma de Barcelona, Spain; Anja Garone, University College Leuven Limburg, Belgium; Elena Roig Ester, Autonomous University of Barcelona, Spain; Ellen Westhof, University College Leuven Limburg, Belgium; Antonio Vega-Martínez, Autonomous University of Barcelona, Spain

**Relational meta-work emerging during technology integration in primary care**

Monika Nerland, University of Oslo, Norway; Isabel Brandenberger, University of Oslo, Norway; Mervi Hasu, University of Oslo, Norway

**Expanding healthcare practice: meta-work generated when AMR healthcare processes are digitalised**

Littlejohn Allison, University College London, United Kingdom; Koula Charitonos, The Open university UK, United Kingdom; Heli Kaatrakoski, University of Stavanger, Norway

Session J: 15

Time: 14:45-16:15

Location: UOM\_A05

**SINGLE PAPER: STUDENT ENGAGEMENT IN STEM AND LITERACY CLASSES****Chair**

Vasiliki Andreou, KU LEUVEN, Belgium

**Conceptualizing domain-specific student engagement by combining qualitative methods**

Elissavet Papageorgiou, Delft University of Technology, Netherlands; Jacqueline Wong, Utrecht University, Netherlands; Annoesjka J. Cabo, Delft University of Technology, Netherlands

**Examining proximal group progress toward high-quality disciplinary engagement**

Toni Rogat, Purdue University, United States; Britte Cheng, Menlo Education Research, United States; Cindy Hmelo-Silver, Indiana University, United States; Anne Traynor, Purdue University, United States; Temitope F. Adeoye, Purdue University, United States; Reina Fujii, Menlo Educational Research, United States; Alexandria Holmes, Purdue University, United States

**Prosocial Education Supports Elementary Math and Science Classroom Climate and Engagement**

Christi Bergin, University of Missouri, United States; Jennifer Foster, University of Missouri - Columbia, United States; Lindsay Brockmeier, University of Missouri/Columbia, United States; Bo Zhu, American Institutes for Research, United States; Ryan Williams, American Institutes for Research, United States; Cara Wylie, eMINTS National Center, United States

**A Whole -School Approach to Developing Student Engagement in Literacy**

Eithne Kennedy, Dublin City University, Ireland; Gerry Shiel, St. Patrick's College, Ireland

Session J: 16

Time: 14:45-16:15

Location: AUTH\_T102

**SINGLE PAPER: CREATIVE THINKING, CREATIVE METACOGNITION AND CREATIVITY-FOSTERING TEACHER BEHAVIORS****Chair**

Catalina Lomos, LISER - Luxembourg Institute for Socio Economic Research, Luxembourg

**To What Extent Can Meta-Creative Pedagogy Foster Elementary School Students Creative Thinking?**

Nurit Paz-Baruch, Bar Ilan University, Israel; Zemira Mevarech, Bar-Ilan University, Israel; Guy Grovas, School of Education, Bar-Ilan University, Israel

**Do We Need Metacognition for Creativity? The Necessary Condition Analysis of Creative Metacognition**

Marek Urban, Institute of Psychology of Czech Academy of Sciences, Czech Republic; Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia

**Creative Problem Solving in Primary School Students**

Mare van Hooijdonk, Radboud University Nijmegen, Netherlands; Tim Mainhard, Leiden University, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands

**Creativity-Fostering Teacher Behaviors in Higher Education: A Transdisciplinary Systematic Review**

Rene Brauer, Maastricht University, Netherlands; Jarrod Ormiston, University of Technology Sydney, Australia; Simon Beusaert, Maastricht University, Netherlands

Session J: 17

Time: 14:45-16:15

Location: UOM\_A06

**SINGLE PAPER: EMOTION AND AFFECT IN MATHEMATICS****Chair**

Erik De Corte, KU Leuven, Belgium

**Antecedents and Consequences of Students' Emotion Profiles in Mathematics.**

Tanja Held, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Mathematics Emotions – Interaction Between Distance Learning and Math Performance**

Anni Sydänmaanlakka, University of Helsinki, Finland; Jokke Häsä, University of Helsinki, Finland; Marja Holm, Finnish Institute for Health and Welfare, Finland; Markku Hannula, University of Helsinki, Finland

**The relationship between affective factors and basic numeracy skills in pre-service teachers**

Heidi Hellstrand, Åbo Akademi University, Faculty of Education and Welfare Studies, Finland; Johan Korhonen, Åbo Akademi University, Finland; Airi Hakkarainen, University of Turku, Finland; Pirjo Aunio, University of Helsinki, Finland; Anu Laine, University of Helsinki, Finland; Pekka Räsänen, University of Turku, Finland

**Numerical and emotional conflict processing: Evidence from behavioral and pupil dilation data**

Adrien Nicolay, Universität Innsbruck, Austria; Elise Klein, Université de Paris, Sorbonne Paris Cité, Paris, France; Ronen Hershman, Department of Psychology, University of Innsbruck, Innsbruck, Austria; Dorothea Hämmerer, Department of Psychology, University of Innsbruck, Innsbruck, Austria; Elisabeth Weiss, Department of Psychology, University of Innsbruck, Innsbruck, Austria; Liane Kaufmann, Department of Psychology, University of Innsbruck, Innsbruck, Austria

Session J: 18

Time: 14:45-16:15

Location: UOM\_R05

**SINGLE PAPER: ECOLOGICAL APPROACHES DURING THE COVID-19 PANDEMIC: FAMILIES AS A SYSTEM OF INFLUENCE****Chair**

Els Boshuizen, Open University of the Netherlands, Netherlands

**Revisiting Bronfenbrenner's bioecological theory during a time of global crisis**

Caroline Cohrsen, University of New England, Australia; Maria Hatzigianni, University of West Attica, Greece

**Families in COVID-19 Pandemic - Relations of Family Type and Resources on Home Learning Environment**

Luisa Prokupek, Otto-Friedrich-University of Bamberg, Germany; Franziska Cohen, University of Education Freiburg, Germany; Elisa Oppermann, University of Bamberg, Germany; Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

**A cross-cultural study during a pandemic: Parental behaviors of young children in times of lockdown**

Galia Meoded, Tel Aviv University, Israel; Dorit Aram, Tel Aviv University, Israel; Merav Asaf, Kaye Academic College of Education, Israel; Margalit Ziv, Kaye Academic College of Education, Israel; Katerina Shtereva, Sofia University, Sofia, Bulgaria; Carmen López-Escribano, Complutense University of Madrid, Madrid, Spain; Susan Sonnenschein, University of Maryland, Baltimore County, United States

**How did Germany parents of primary school children perceive remote schooling during COVID pandemic?**

Katrín Gottlebe, University Leipzig, Germany; Brigitte Latzko, University of Leipzig, Germany

Session J: 19

Time: 14:45-16:15

Location: UOM\_A11

**SINGLE PAPER: TEACHER COMPETENCIES AND STRATEGIES FOR IMPROVED TEACHING****Chair**

MARIA EVANGELOU TSITIRIDOU, International Hellenic University, Greece

**Analyzing teaching strategies to promote oral communication in the classroom by teachers in training**

María Fernanda Rodríguez, Universidad Finis Terrae, Chile; Camila Barahona, Pontificia Universidad Católica de Chile, Chile

**Comparing Experienced and Novice Teachers' Visual Attention to Students' Hand-Raising Behavior**

Tina Seidel, Technische Universität München, Germany; Christian Kosel, TUM School of Education, Germany; Ricardo Böheim, Technical University of Munich, Germany; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany; Katharina Schnitzler, Department Erziehungswissenschaft der Universität Potsdam, Germany; Jürgen Pfeffer, Professorship of Computational Social Science and Big Data, Germany; Maria Bannert, Technical University of Munich (TUM), Germany

**Promoting teachers' diagnostic competence in self-regulated learning**

Kerstin Baeuerlein, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Sabrina Brunner, PH FHNW, Switzerland; Xenia-Lea Weber, Ruhr-University Bochum, Germany; Ferdinand Stebner, University of Osnabrück, Germany; Joachim Wirth, Ruhr-University Bochum, Germany; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

**Any experience?: Linking teacher efficacy, professional learning community and experiential learning**

Takumi Yada, Finnish Institute for Educational Research, Finland; Akie Yada, University of Jyväskylä, Finland; Daisuke Choshi, Teikyo University, Japan; Tetsuhito Sakata, Otsuma Women's University, Japan; Takehiro Wakimoto, Yokohama National University, Japan; Masahiro Nakada, Shirayuri University, Japan

Session J: 20

Time: 14:45-16:15

Location: UOM\_R09

**SINGLE PAPER: MINDSETS, ACHIEVEMENT AND BELIEFS****Chair**

Andrienne Kerckhoffs, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Elementary school students' mindsets and attentional neural processing of feedback**

Ita Puusepp, University of Helsinki, Finland; Tanja Linnavalli, University of Helsinki, Finland; Tuisku Tammi, University of Helsinki, Finland; Minna Huotilainen, University of Helsinki, Finland; Teija Kujala, University of Helsinki, Finland; Sonja Laine, University of Helsinki, Finland; Elina Kuusisto, Tampere University, Finland; Kirsi ja Tirri, University of Helsinki, Finland

**Children's gender stereotypes in STEM ability following a growth mindset intervention**

Fidelia Law, University of Exeter, United Kingdom; Luke McGuire, University of Exeter, United Kingdom; Mark Winterbottom, University of Cambridge, UK, United Kingdom; Adam Rutland, University of Exeter, United Kingdom

**Parents in learning: The influence of mindsets and behavior on students' reading achievement**

Caroline Villiger, University of Teacher Education Bern, Switzerland; Nadine Schuler, PH Bern - School of Teacher Education, Switzerland; Edith Niederbacher, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

**Is your mind set? Growth mindsets of students and teachers and their interaction**

Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany; Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Carmen Nadja Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

Session J: 21

Time: 14:45-16:15

Location: UOM\_A10

**SINGLE PAPER: PRE-SERVICE TEACHERS' DIGITAL LITERACY AND LEARNING****Chair**

Boris Eckstein, University of Teacher Education Zurich, Switzerland

**Using knowledge maps as attention-directing support for writing instructional texts**

Inka Haehnlein, Martin Luther University Halle-Wittenberg, Germany; Pablo Pirnay-Dummer, Martin-Luther-Universität Halle-Wittenberg, Germany

**Promoting Media-Didactic Skills through Multimedia Tools – Influencing Factors on Learning Success**

Katharina Frank, Johannes Gutenberg-Universität Mainz, Germany; Olga Zlatkin-Troitschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Jasmin Schlax, Johannes Gutenberg-Universität Mainz, Germany; Christian Dormann, Johannes Gutenberg-Universität Mainz, Germany; Sebastian Brueckner, Chair of business education, Germany

**Utility-Value Interventions Support Technology-Related Knowledge Integration but not Learning**

Iris Backfisch, University of Tuebingen, Germany; Leonie Sibley, University of Tuebingen, Germany; Andreas Lachner, University of Tuebingen, Germany; Kenneth Tulku Kirchner, University of Tuebingen, Germany; Christoff Hische, University of Tuebingen, Germany; Katharina Scheiter, University of Potsdam, Germany

**Video Annotations to Support Pre-Service Teachers' Professional Vision for Technology Integration**

Franziska Tschönhens, University of Tuebingen, Germany; Ulrike Franke, University of Tuebingen, Germany; Tim Fütterer, University of Tuebingen, Germany; Andreas Lachner, University of Tuebingen, Germany

Session J: 22

Time: 14:45-16:15

Location: UOM\_R02

## POSTER PRESENTATION: PARENTAL INVOLVEMENT IN LEARNING

**Chair**

Thorben Jansen, Leibniz-Institut für die Pädagogik der Naturwissenschaften und Mathematik, Germany

**Interaction effect between parenting and teacher support on students' help-seeking behavior**

Ayafumi Goto, Gifu Shotoku Gakuen University, Japan

**Shifting online early: Online vs. face-to-face early childhood STEM parent-engagement workshop**

Mona Wong, Yew Chung College of Early Childhood Education, Hong Kong; Brad Chan, Yew Chung College of Early Childhood Education, Hong Kong

**Free access to a digital library at home: The panacea for home reading by G2 beginning readers?**

Maria T. Sikkema-de Jong, Leiden University, Netherlands; Simone Vogelaar, Education and Child studies, Leiden University, Netherlands; Jane Pieplenbosch, Utrecht University, Netherlands; Ralph Rippe, Education and Child studies, Leiden University, Netherlands

**An investigation of the relation between household chaos and students' academic outcomes**

Xiaozi Gao, The Education University of Hong Kong, Hong Kong; Frank Tian-fang Ye, The Hong Kong Polytechnic University, Hong Kong; Kerry Lee, The Education University of Hong Kong, Hong Kong; Lan Yang, The Education University of Hong Kong, Hong Kong; Kuen Fung Sin, The Education University of Hong Kong, Hong Kong

**Linking Family Economic Pressure to Early Chinese Reading and Writing Skills**

Ian Lam, The Education University of Hong Kong, Hong Kong; Kevin Kien Hoa Chung, The Education University of Hong Kong, Hong Kong

**The role of the home in children's critical reading skills development: A Delphi study**

Leena Paakkari, University of Jyväskylä, Faculty of Sport and Health Sciences, Finland; Jenni Ruotsalainen, University of Jyväskylä, Finland; Henri Lahti, University of Jyväskylä, Finland; Markus Kulmala, University of Jyväskylä, Faculty of Sport and Health Sciences, Finland; Panayiota Kendeou, University of Minnesota, United States; Tiia-Liina Raittila, University of Jyväskylä, Finland; Mari Manu, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland

Session J: 23

Time: 14:45-16:15

Location: UOM\_R03

## POSTER PRESENTATION: IN-SERVICE TEACHERS' PROFESSIONAL DEVELOPMENT

**Chair**

Nora McIntyre, University of Southampton, United Kingdom

**Dialogic Teaching Development Program: what about professional identity for changing?**

MARIBEL CALDERON, Universidad Católica Silva Henríquez, Chile; Marisol Gomez, Universidad Alberto Hurtado, Chile

**Classroom Observations: how teachers teach learning strategies?**

Mikk Granström, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia; Eve Eisenschmidt, Tallinn University, Estonia

**Correlations Between Biology Teachers' Self-Reflection, TPACK and its Reflection in Practice**

Jörg Zumbach, University of Salzburg, Austria; Lena von Kotzebue, University of Salzburg, Austria; Bettina Mann, University of Salzburg, Austria

**Engaged teachers and well-being: The moderating role of burnout**

Caterina Fiorilli, University of LUMSA, Italy; Giacomo Angelini, LUMSA University of Rome, Italy; Vanessa Marchetti, Free University Maria Santissima Assunta, Italy; Luciano Romano, European University of Rome, Italy

**Design-based Research at scale: teacher professional development program on technology-enhanced math**

Jüri Kurvits, Tallinn University, Estonia; Marina Kurvits, Tallinn University, Estonia; Tobias Ley, Danube University Krems, Austria; Kairit Tammets, Tallinn University, Estonia



Session J: 24

Time: 14:45-16:15

Location: UOM\_R01

## POSTER PRESENTATION: SIMULATION-BASED LEARNING

## Chair

Juliette Desiron, University of Zürich, Switzerland

**Counselling competence of student teachers – development of an action-oriented assessment format**

Philipp Wotschel, Paderborn Centre for Educational Research and Teacher Education - PLAZ-Professional School - University of Paderborn, Germany; Christoph Vogelsang, Paderborn University, Germany; Jana Meier, University of Paderborn, Germany, Germany; Thomas Janzen, PLAZ Professional School - Paderborn University, Germany

**No Silver Bullet: Development of a first Sketch of a Prompt Design for Vocational Education Students**

Herbert Thomann, University Mannheim, Germany; Viola Deutscher, University of Mannheim, Germany; Andreas Rausch, University of Mannheim, Germany; Juergen Seifried, University of Mannheim, Germany

**Simulation based learning for facilitating understanding of others' emotions in preservice teachers**

Shira Iluz, Bar Ilan University, Israel; Jacob Israelashvili, Bar Ilan University, Israel; Yaacov Boaz Yablon, Bar-Ilan University, Israel

**How do student teachers perceive a novel VR environment for students?**

Florentine Hicketier, Friedrich-Schiller-University Jena, Germany; Mathias Dehne, Friedrich Schiller University Jena, Germany; Tova Michalsky, Bar-Ilan University, Israel; Engin Ader, Boğaziçi University, Türkiye; Alexander Groeschner, Friedrich Schiller University Jena, Germany

**Preservice teachers' motivations and perceived benefits of using a decision simulator**

Eli Lejonberg, University of Oslo, Norway; Eyvind Elstad, University of Oslo, Norway; Katrine Nesje, University of Oslo, Norway

**The role of executive functions when learning in authentic learning environments**

Maik Achtner, LMU Munich, Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

Session J: 25

Time: 14:45-16:15

Location: UOM\_R04

## POSTER PRESENTATION: MOTIVATIONAL, COGNITIVE AND TEACHING PROCESSES

## Chair

Belinda Merkle, University of Mannheim, Germany

**Does domain specific mindset make a difference in learning? Two metanalysis**

Madalin Marian Deliu, University of Salamanca, Spain; José Ricardo García Pérez, University of Salamanca, Spain

**The Role of Conditional Parental Support in the Development of Impostorism**

Thérèse Bouffard, Université du Québec à Montréal, Canada; Carole Vezeau, Université du Québec à Montréal, Canada; Pascal Pansu, Université Grenoble Alpes, France

**Situational interest, perceptions of task difficulty and Motivation2Learn more**

Luke K. Fryer, The University of Hong Kong, Hong Kong; Alex Shum, The University of Hong Kong, Hong Kong

**Checkmate: Examining Chess Masters' Expertise in Relation to Interest and Motivation**

Eric Schoute, University of Maryland, United States; Joshua Jaffe, University of Maryland, United States; Doug Lombardi, University of Maryland, College Park, United States

**On making biology education meaningful: Students' motivation for brewing beer**

Niels Dohn, Aarhus University, Denmark

**Are Peer and Teacher Relatedness Always Adaptive? An Analysis of (A)symmetric Congruence Processes**

Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Fernando NUNEZ-REGUEIRO, Université Grenoble Alpes, France; Jaime León, Universidad de las Palmas de Gran Canaria, Spain

Session J: 26

Time: 14:45-16:15

Location: UOM\_GYM

**ROUNDTABLE: MOTIVATION AND SELF-REGULATED LEARNING****Chair**

Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium

**Innovative Behavior and Antecedents: Comparing Teachers with other Academic Professions**

Verena Jörg, DIPF | Leibniz Institute for Research and Information in Education, Germany; Franziska Baier, Goethe-Universität Frankfurt, Germany; Ulrike Hartmann, German Institute for International Educational Research (DIPF), Germany; Stefanie Gaeckle, German Centre for Higher Education Research and Science Studies (DZHW), Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

**The development of students' ideas during group conversations in secondary education.**

Martina van Uum, Radboud Teachers Academy, Netherlands; Petrie van der Zanden, Educational Institute of Social Sciences, Radboud University, Netherlands

**Associations between 3-5-year-olds' motivational, metacognitive, and self-regulatory processes**

Loren Marulis, Connecticut College, United States; Megan Bidgood, Connecticut College, United States

**The influence of enjoyment on self-regulated learning from texts**

Celina Safferthal, University of Education Karlsruhe, Germany; Anja Prinz-Weiß, University of Education Karlsruhe, Germany

Session J: 27

Time: 14:45-16:15

Location: AUTH\_T202

**WORKSHOP: DAISY ROBOT AND ARROW METHOD AIMING TO ASSIST CHILDREN WITH AUTISM SPECTRUM DISORDERS****Daisy Robot and ARRoW Method aiming to assist children with Autism Spectrum Disorders**

Nikolaos Fachantidis, University of Macedonia, Greece; Sofia Pliasa, University of Macedonia, Greece; Evgenia Soumelidou, University of Macedonia, Greece

Session J: 28

Time: 14:45-16:15

Location: UOM\_A04

**ICT DEMONSTRATION: REAL-TIME CODING OF LESSON ACTIVITIES WITH A MOBILE WEB APPLICATION****Real-time coding of lesson activities with a mobile web application**

Miikka Turkkila, University of Helsinki, Finland

Session K: 1

Time: 17:00-18:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: A LOOK INTO THE CRYSTAL BALL: WHICH DIRECTIONS SHOULD METACOGNITION AND SRL RESEARCH TAKE?****Chairs**

Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Charlotte Dignath, TU Dortmund University, Germany

**Organisers**

Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Charlotte Dignath, TU Dortmund University, Germany

**Discussants**

Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Charlotte Dignath, TU Dortmund University, Germany

**Looking Backwards to Move Forward: Missed Opportunities in Developing Metacognition and SRL Theory**

Daniel Dinsmore, University of North Florida, United States; Meghan Parkinson, University of North Florida, United States

**SRL and emotions: Social and emotional factors in metacognition in the age of AI**

Sanna Järvelä, University of Oulu, Finland; Márta Sobocinski, University of Oulu, Finland; Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland

**Looking into the future of metacognition and SRL research in early childhood**

Deborah Pino-Pasternak, University of Canberra, Australia

**From Intervention to Collaboration: Researchers Working With Teachers to Advance SRL in Classrooms**

Nancy Perry, University of British Columbia, Canada

**Assessing SRL and SRL implementation: A matter of multi?**

Hilde Van Keer, Ghent University, Belgium

ANNOTATIONS:  
SIG 16 INVITED SYMPOSIUM

Session K: 2

Time: 17:00-18:30

Location: AUTH\_DC2

**INVITED SYMPOSIUM: TRANSITIONS IN RESEARCHER EDUCATION AND CAREERS****Chair**

Erika Löfström, University of Helsinki, Finland

**Organiser**

Erika Löfström, University of Helsinki, Finland

**Discussant**

James Burford, University of Warwick, United Kingdom

**Transitions in the PhD**

Søren Bengtsen, Aarhus University, Denmark; Kelsey Inouye, University of Oxford, United Kingdom; Patrícia Alves, University of Porto, Portugal; James Burford, University of Warwick, United Kingdom; Montserrat Castelló Badia, Blanquerna, Universitat Ramon Llull, Spain; Dely Elliot, University of Glasgow, United Kingdom; Liezel Frick, Stellenbosch University, South Africa; Sofie Kobayashi, University of Copenhagen, Denmark; Lynn McAlpine, University of Oxford / McGill University, Canada; Paula Meesters, University Utrecht, Netherlands; Hatice Nuriler, Aarhus University, United Kingdom; Signe Skov, Aarhus University, Denmark

**Potentials, challenges, uncertainties: Cross-cultural transitions in doctoral/post-doctoral context**

Dely Elliot, University of Glasgow, United Kingdom

**Academic mid and late career transitions and supervision**

Irene Lokhtina, University of Central Lancashire Cyprus, Cyprus; Solveig Cornér, University of Helsinki, Finland; Cecilia Almlöv, Swedish University of Agricultural Sciences, Sweden; Erika Löfström, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Henrik Viberg, Swedish University of Agricultural Sciences, Sweden; Paula Meesters, University Utrecht, Netherlands

**Transitions in post-PhD careers**

Inge Van der weijden, Leiden University, Netherlands; Isabelle Skakni, University of Applied Sciences and Arts Western Switzerland, Switzerland; Anna Sala Bubaré, Ramon Llull University, Spain

**ANNOTATIONS:**

SIG 24 INVITED SYMPOSIUM

Session K: 3

Time: 17:00-18:30

Location: AUTH\_TE1

**SYMPOSIUM: INTEREST ON THE MOVE****Chair**

Sanne Akkerman, Utrecht University, Netherlands

**Organiser**

Sanne Akkerman, Utrecht University, Netherlands

**Discussant**

Roger Saljo, University of Gothenburg, Sweden

**Developmental dynamics of multiple interests**

Jael Draijer, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

**Developing interest pursuits during educational transitions**

Joris Beek, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

**Tracing objects of interest from school to out-of-school**

Jaakko Hilppö, University of Helsinki, Finland

**From interest to commitment towards sustainability. A critical psychology perspective.**

Alfredo Jornet, Universitat de Girona, Spain

Session K: 4

Time: 17:00-18:30

Location: UOM\_A03

**SYMPOSIUM: TEACHERS' WELLBEING, SOCIAL SELF-EFFICACY, BURNOUT AND JOB-SATISFACTION IN ECE ACROSS FOUR COUNTRIES****Chair**

Vasileios Grammatikopoulos, International Hellenic University, Greece

**Organiser**

Anastasia Vatou, International Hellenic University, Greece

**Discussant**

Eleni Tympa, International Hellenic University, Greece

**Testing the Construct Validity and Cross-Country Comparability of a Teacher Wellbeing Measure**

Demos Michael, Center for the Advancement of Research & Development in Educational Technology (CARDET), Cyprus; Andri Agathokleous, Institute of Development, Cyprus; Vicky Charalambous Charalambous, Institute of Development, Cyprus; Christos Pezirkianidis, Department of Psychology, Greece; Charalambos Vrasidas, CARDET - University of Nicosia, Cyprus

**Teachers' social self-efficacy in cross-national perspective**

Anastasia Vatou, International Hellenic University, Greece; George Manolitsis, University of Crete, Greece; Maria Evangelou-Tsitiridou, International Hellenic University, Greece; Vasiliou Oikonomides, University of Crete, Greece; Maria Kyriotaki, University of Crete, Greece; Angeliki Mouzaki, University of Crete, Greece; Evridiki Zachopoulou, International Hellenic University, Greece; Vasileios Grammatikopoulos, International Hellenic University, Greece

**Burnout in early childhood education: cross-cultural factorial validity of MBI-ES**

Ana Rodrigues de Lemos, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Filipe Piedade, University of Porto, Portugal; Tiago Ferreira, University of Porto, Portugal; Carolina Guedes, University of Porto, Portugal; Teresa Leal, University of Porto, Portugal; Catarina Grande, University of Porto, Portugal; Diana Alves, University of Porto, Portugal; Joana Cadima, University of Porto, Portugal

**Early childhood teachers' job-satisfaction across four countries**

Demos Michael, Center for the Advancement of Research & Development in Educational Technology (CARDET), Cyprus; Anastasia Vatou, International Hellenic University, Greece; Katerina Krousorati, International Hellenic University, Greece; Vicky Charalambous, Institute of Development, Cyprus; Maria Evangelou-Tsitiridou, International Hellenic University, Greece; Charalambos Vrasidas, CARDET - University of Nicosia, Cyprus; Evridiki Zachopoulou, International Hellenic University, Greece; Vasileios Grammatikopoulos, International Hellenic University, Greece

Session K: 5

Time: 17:00-18:30

Location: AUTH\_TE2

**SYMPOSIUM: LET'S PLAY – SOCIAL PLAY AS MEAN AND GOAL FOR LEARNING IN INCLUSIVE EDUCATION****Chair**

Lucas Deutzmann, University of Potsdam, Germany

**Organisers**

Florianne Rademaker, University of Groningen, Netherlands;  
 Maria Gladh, Stockholm University, Sweden; Hanna Ginner  
 Hau, Stockholm University, Sweden; Winnie-Karen Giera,  
 Institute of German Studies, University of Potsdam, Germany

**Discussant**

Elisa Kupers, University of Groningen, Netherlands

**Disabled in play? A multiple case study on SEN students' engagement in cooperative play activities**

Florianne Rademaker, University of Groningen, Netherlands; Elisa Kupers, University of Groningen, Netherlands

**Studying a peer-based intervention to test the concept of explicit teaching social play skills**

Maria Gladh, Stockholm University, Sweden; Eva Siljehag, Department of Special Education, Stockholm University, Sweden;  
 Mara Westling Allodi, Stockholm University, Sweden; Samuel L. Odom, Frank Porter Graham Child Development Institute,  
 Chapel Hill School of Education, University of North Carolina, Chapel Hill, NC, United States

**Everyone is playing! A participatory theater project to promote reading competence**

Winnie-Karen Giera, Institute of German Studies, University of Potsdam, Germany; Sara Hauser, Institute of German Studies,  
 University of Potsdam, Germany

**Guided play and narrative skills - promoting participation and engagement for each child**

Hanna Ginner Hau, Stockholm University, Sweden; Heidi Selenius, Stockholm University, Sweden; David Backlund,  
 Department of Special Education, Stockholm University, Sweden

Session K: 6

Time: 17:00-18:30

Location: AUTH\_T002

**SYMPOSIUM: NEW PERSPECTIVES IN UNRAVELING THE DIFFICULTIES IN FRACTION UNDERSTANDING****Chair**

Wim Van Dooren, KU Leuven, Belgium

**Organisers**

Wim Van Dooren, KU Leuven, Belgium; Jo Van Hoof,  
 University of Turku, Finland

**Discussant**

Xenia Vamvakoussi, University of Ioannina, Greece

**Equivalent fractions are not equal on the mental number line**

Georgios Thoma, Loughborough University, United Kingdom; Julia Bahnmüller, Loughborough University, United Kingdom;  
 Jessica Maisey, Tampere University, Finland; Antero Lindstedt, Tampere University, Finland; Kristian Kiili, Tampere University,  
 Finland; Manuel Ninaus, University of Graz, Austria; Korbinian Moeller, Loughborough University, United Kingdom

**The roles of magnitude processing, biases, and benchmarking in fraction comparison tasks**

Timo Leuders, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany; Frank  
 Reinhold, University of Education Freiburg, Germany

**Inhibition in the processing of rational numbers: A correlational study with fifth graders**

Karen De Keersmaecker, KU Leuven, Belgium; Wim Van Dooren, KU Leuven, Belgium; Jo Van Hoof, University of Turku,  
 Finland

**The link between conceptual change and mathematics anxiety: the case of fractions**

Jo Van Hoof, University of Turku, Finland; Hilma Halme, University of Turku, Finland; Minna Hannula-Sormunen, University of  
 Turku, Finland; Jake McMullen, University of Turku, Finland

Session K: 7

Time: 17:00-18:30

Location: AUTH\_CH

**SYMPOSIUM: USING DIGITAL TOOLS AND ANALYTICS TO PROMOTE REGULATION IN INDIVIDUAL AND COLLABORATIVE LEARNING****Chair**

Nikol Rummel, Ruhr University Bochum, Germany

**Organisers**

Nikol Rummel, Ruhr University Bochum, Germany; Inge  
 Molenaar, Radboud University Nijmegen, Netherlands

**Discussant**

Susanne Lajoie, McGill University, Canada

**Designing feedback interventions with learning analytics: Identifying students' information needs**

Jacqueline Wong, Utrecht University, Netherlands; Ioana Jivet, Goethe University Frankfurt, Germany & DIPF, Germany;  
 Manuel Valle Torre, Delft University of Technology, Netherlands; Gabriëlle Martins Van Jaarsveld, Erasmus University  
 Rotterdam, Netherlands; Ali Soleymani, Delft University of Technology, Netherlands; Martine Baars, Erasmus University  
 Rotterdam, Netherlands; Marcus Specht, TU Delft, Netherlands

**Automated feedback on causal diagrams for self-regulated learning at the metacomprehension level**

Héctor J. Pjeira-Díaz, Maastricht University, Netherlands; Behrooz Nikandish, University of Groningen, Netherlands; Gosse  
 Bouma, University of Groningen, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Anique de Bruin,  
 Maastricht University, Netherlands

**Boundary conditions for leveraging group-level feedback for regulation of collaborative learning**

Sebastian Strauß, Ruhr-University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany

**Modelling Metacognitive Awareness with Epistemic Emotions in Collaborative Learning**

Ahsen Çini, University of Oulu, Finland; Muhterem Dindar, Tampere University, Finland; Sanna Järvelä, University of Oulu,  
 Finland

Session K: 8

Time: 17:00-18:30

Location: AUTH\_DC3

**SYMPOSIUM: TEACHING THE GLOBAL GOALS: TEACHER EDUCATION PROGRAMMES AS A CONDUIT FOR ACHIEVEMENT OF AGENDA 2030****Chair**

Ann-Kathrin Dittrich, University Innsbruck, Austria

**Discussant**

Denis Francesconi, University of Vienna, Austria

**The integration of SDG 3 in Teacher Education for a sustainable future**

Irma Eloff, University of Pretoria, South Africa

**The integration of SDG 4 in Teacher Education for a sustainable future**

Ann-Kathrin Dittrich, University Innsbruck, Austria

**Forms of essentialisation of gender and culture in SDG 5 and the critical role of teacher(educators)**

Evi Agostini, University of Vienna, Austria

**Policies to address teacher shortages to achieve SDG 4 targets in Austria and South Africa**

Vasileios Symeonidis, University of Education Freiburg, Germany

Session K: 9

Time: 17:00-18:30

Location: AUTH\_DC1

**SYMPOSIUM: VISUALIZING LEARNING PROCESSES IN LEARNING FROM TEXT AND MULTIMEDIA: AN EYE-TRACKING APPROACH****Chair**

Emmelien Merchie, Ghent University, Belgium

**Organiser**

Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium

**Discussant**

Tamara Van Gog, Utrecht University, Netherlands

**How eye Read: A Social Network Approach**

Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Tine van Daal, University of Antwerp, Belgium; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Vincent Donche, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium

**How do Primary School Students Read Mind Maps? A Process Mining Analysis of Eye-Tracking Patterns**

Emmelien Merchie, Ghent University, Belgium; Sofie Heirweg, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Can Video Models Help Debunk the Learning Styles Misconception When Reading in L2?**

Ladislao Salmerón, University of Valencia, Spain; Juliana do Amaral, FEDERAL UNIVERSITY OF SANTA CATARINA, Brazil

**Look Where I Look! Real-time Eye Movement Modeling Examples (EMME) in the Classroom**

Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Diederick Niehorster, Lund University, Sweden; William Rosengren, Lund University, Sweden; Marcus Nyström, x, Sweden; Tamara Van Gog, Utrecht University, Netherlands

Session K: 10

Time: 17:00-18:30

Location: UOM\_A02

**SINGLE PAPER: MOTIVATION TO READ AND WRITE****Chair**

GIULIA VETTORI, University of Florence, Italy

**Relationships between motivational factors and reading comprehension in bilingual fourth-graders**

Choo Mui Cheong, The University of Hong Kong, Hong Kong; Yaping Liu, The University of Hong Kong, Hong Kong; Rex Hung Wai Ng, The University of Hong Kong, Hong Kong; Shek Kam Tse, The University of Hong Kong, Hong Kong

**Group-based motivational profiles and their association with students' writing performance**

Rui Alexandre Alves, University of Porto, Portugal; Ana Camacho, University of Porto, Portugal; Fien De Smedt, Ghent University, Belgium; Rui Maio, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Joana Cadima, University of Porto, Portugal; Hilde Van Keer, Ghent University, Belgium

**Writing Motivation and Ability Profiles and Transition after a Technology-Based Writing Intervention**

Tania Maria Cruz Cordero, University of Delaware, United States; Joshua Wilson, University of Delaware, United States; Corey Palermo, Measurement Incorporated, United States; Halley Eacker, Measurement Incorporated, United States; Matthew Myers, University of Delaware, United States; Andrew Potter, University of Delaware, United States; Jessica Coles, Measurement Incorporated, United States

**Exploring the relation between autonomy supportive teacher behavior and students' reading motivation**

Nele Bleukx, KU LEUVEN, Belgium; Katrijn Denies, KU LEUVEN, Belgium; Hilde Van Keer, Ghent University, Belgium; Koen Aesaert, K.U.Leuven, Belgium

Session K: 11

Time: 17:00-18:30

Location: UOM\_R09

**SINGLE PAPER: EDUCATIONAL POLICY AND SCHOOL REFORM****Chair**

Yves Mühlematter, PHBern, University of Teacher Education; University of Zürich, Switzerland

**The role and function of district superintendents: A systematic literature review**

Mona Holmqvist, Lund University, Sweden; Martin Lantz Ekström, Malmö University, Sweden

**School reform for the future? Change processes during the establishment of all-day schools**

Michelle Jutzi, University of Teacher Education Bern, Switzerland; Barbara Stampfli, PHBern – University of Teacher Education, Switzerland; Regula Windlinger, Institut für Forschung, Entwicklung und Evaluation, PHBern, Switzerland; Ulrich Hostettler, University of Teacher Education Bern (PHBern), Switzerland

**A Controversially Received Reform: The 2018 Renewal of Finnish Higher Education Student Admission**

Risto Hotulainen, University of Helsinki, Finland; Sirku Kupiainen, University of Helsinki, Finland; Irene Rämä, University of Helsinki, Finland

**Opportunities & Challenges of Two Policy Measures to Reduce Educational Inequalities in Switzerland**

Anja Winkler, University of Teacher Education Bern, Switzerland; Angela Rebecca Aegerter, University of Bern, Switzerland; Andrea Erzinger, University of Bern, Switzerland

Session K: 12

Time: 17:00-18:30

Location: UOM\_A13

**SINGLE PAPER: TECHNOLOGY-ENHANCED INSTRUCTIONAL DESIGN****Chair**

Karin Street, Western Norway University of Applied Sciences, Norway

**Active Integration of Representations in Augmented Reality**

Jule Krüger, University of Potsdam, Germany; Franziska Schacht, University of Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany

**Learning by Explaining in School: Testing the Generalizability within a ManyClasses Study**

Leonie Sibley, University of Tübingen, Germany; Heike Russ, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany

**Do distributed practice reminders promote children's learning with a digital learning app?**

Lea Nobbe, DIPF Frankfurt, Germany; Jasmin Breitwieser, DIPF | Leibniz Institute for Research and Information in Education, Germany; Daniel Biedermann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Implementing metacognitive prompts in segmented dynamic visualizations - Beneficial for learning?**

Felix Krieglstein, Chemnitz University of Technology, Germany

Session K: 13

Time: 17:00-18:30

Location: UOM\_R08

**SINGLE PAPER: TEACHERS' PROFESSIONAL DEVELOPMENT: THE ROLE OF REFLECTIVE PRACTICES****Chair**

Ana Costa, University of Lisbon, Linguistics Center and Polytechnic Institute of Setúbal, Portugal

**Role of impasse in teacher learning**

Roman Švaříček, Masaryk University, Czech Republic; Klara Sedova, Masaryk University, Czech Republic; Zuzana Salamounova, Masaryk University, Czech Republic; Martin Sedlacek, Masaryk University, Czech Republic

**I reflect today, this week, or never? An experience sampling study of teacher activities**

Miriam Compagnoni, University of Zurich, Switzerland; Beat Rechsteiner, University of Zurich, Institute of Education, Switzerland; Flurin Gotsch, University of Zurich, Institute of Education, Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Andrea Wullschleger, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland

**"I know I don't know" - Does metacognitive accuracy moderate the validity of TPK self-assessments?**

Ulrike Franke, University of Tübingen, Germany; Iris Backfisch, University of Tuebingen, Germany; Armin Fabian, University of Tuebingen, Germany; Patrizia Breil, Ruhr-University of Bochum, Germany; Katharina Scheiter, University of Potsdam, Germany; Andreas Lachner, University of Tübingen, Germany

**Generative resistance as knowledge work: Teacher's Engagement with Assessment Criteria**

Eli Tronsmo, University of Oslo, Norway; Hege Hermansen, Oslo Metropolitan University, Norway

Session K: 14

Time: 17:00-18:30

Location: UOM\_CR

**SINGLE PAPER: TEACHERS' DIGITAL COMPETENCE AND CHALLENGES****Chair**

Mika Igarashi, Hosen College of Childhood Education, Japan

**Teacher Educators' positioning and task perception concerning the facilitation of digital competence**

Ilka Nagel, Østfold University College / University of Oslo, Norway

**Higher education teachers' profiles based on digital learning activities during online teaching**

Anne Lohr, Ludwig-Maximilians-University Munich, Germany; Michael Sailer, LMU Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Teacher Educators' Challenges in the Context of Digital Transformation: A Mixed Methods Study**

Marlene Wagner, University for Continuing Education Krems (Danube University Krems), Austria; Tobias Ley, Danube University Krems, Austria; Lydia Kammerer, Johannes Kepler University Linz, Austria; Christoph Helm, Johannes Kepler University Linz, Austria

**Still an instrumental endeavor? Developing professional digital competence in teacher education**

Synnøve H. Amdam, Volda University College, Norway; Toril Aagaard, University of Southeast Norway, Norway; Ilka Nagel, Østfold University College / University of Oslo, Norway; Karl Vika, NIFU, Norway; Fredrik Mørk Røkenes, Norwegian University of Science and Technology, Norway

Session K: 15

Time: 17:00-18:30

Location: AUTH\_T102

**SINGLE PAPER: MULTICULTURAL EDUCATION: TEACHERS' ATTITUDES, BELIEFS AND VALUES****Chair**

Gonny Schellings, Eindhoven University of Technology, Netherlands

**What predicts teachers' likeliness to intervene in situations of ethnicity-based exclusion?**

Daria Khanolainen, University of Jyväskylä, Finland; Elena Semenova, Independent researcher, Unknown; Elvira Fatkhulova, Independent researcher, Unknown; Yulia Nesterova, University of Glasgow, United Kingdom

**Norwegian preservice teachers' competence to teach in multicultural and multilingual classrooms.**

Wenche Elisabeth Thomassen, University of Stavanger, Norway

**Multicultural education, values and curriculum-content learning: a teacher training approach**

ELENI PAPAGEORGIOU, Cyprus Pedagogical Institute, Cyprus; Pavlina Hadjitheodoulou-Loizidou, Cyprus Pedagogical Institute, Cyprus

**International partnership in cooperation for democratic values in primary education**

Natalia Demeshkant, Pedagogical University of Krakow, Poland; Stefanie Schnebel, University of Education Weingarten, Germany; Katarzyna Potyrala, Andrzej Frycz Modrzewski Krakow University, Poland; Mareike Brehmer, University of Agder, Norway; Hilke Rapp, PH Weingarten, Germany; Aslaug Kristiansen, University of Agder, Norway; Inger Marie Dalehefte, University of Agder, Norway; kristin endresen-maharaj, University of Agder, Norway; Georg Kristoffer Fjalsset, Stiftelsen Arkivet, Norway; Marion Susanne Visotschnig, Paedagogische Hochschule Weingarten, Germany

Session K: 16

Time: 17:00-18:30

Location: UOM\_A11

**SINGLE PAPER: ASSESSMENT IN MATHEMATICS: NEW METHODS****Chair**

Claudia Reiter, Entrepreneurship Education, Germany

**Development and Validation of a Multiplicative Operation Sense Assessment Instrument in 5th Grade**

Eva Schultheis, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Frank Reinhold, University of Education Freiburg, Germany

**How PCK sharpens teachers' views when judging mathematical tasks: An eye-tracking study**

Kirsten Brunner, Pädagogische Hochschule Freiburg, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Timo Leuders, University of Education Freiburg, Germany

**On the Perception and Effectiveness of the Feedback Quality from a Digital Learning Platform**

Larissa Altenburger, Leuphana Universität Lüneburg, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany

**Formative assessment of early numerical concepts in Brazilian children**

Fernanda Rocha de Freitas, Universidade Federal de Minas Gerais, Brazil; Moritz Herzog, University of Wuppertal, Institute for Educational Research, Germany; Antje Ehlert, University of Potsdam / University of Johannesburg, Germany; Vitor Geraldi Haase, Universidade Federal de Minas Gerais, Brazil; Annemarie Fritz, Akademie Wort+Zahl, Germany

Session K: 17

Time: 17:00-18:30

Location: UOM\_R05

**SINGLE PAPER: READING DISABILITIES****Chair**

Mayra Mascareño Lara, University of Groningen, Netherlands

**Argumentative text comprehension by students with Reading Disabilities or Low Reading Achievement**

Anatoli Kirpouiki, University of Macedonia, Greece; IOANNIS AGALLOTIS, University of Macedonia, Greece

**Text Comprehension Improvement in Struggling Readers via Explicit Instruction and a Reading Strategy**

Anatoli Kirpouiki, University of Macedonia, Greece; IOANNIS AGALLOTIS, University of Macedonia, Greece

**Working memory mediating word problem solving in students with and without reading disabilities**

Anastasia Chideridou-Mandari, Aristotle University of Thessaloniki, Greece; Sophia Giazitidou, Dalhousie University, Canada; Susana Padeliadu, Aristotle University of Thessaloniki, Greece

**Effectiveness of drama pedagogical reader's theater programs in special education**

Jarkko Hautala, Niilo Mäki Institute, Finland; Enni Junttila, Niilo Mäki Institute, Finland; Miia Ronimus, University of Oulu, Finland; Roosa Karhunen, Niilo Mäki Institute, Finland

Session K: 18

Time: 17:00-18:30

Location: UOM\_A04

**SINGLE PAPER: LINGUISTIC DIVERSITY IN MULTICULTURAL EDUCATION****Chair**

Iwan Wopereis, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Associations of multilingualism with metalinguistic and cultural competence**

Thomas Canz, FernUniversität in Hagen, Germany; Kathrin Jonkmann, FernUniversität in Hagen, Germany

**Linguistic diversity in Austria: challenges of including Ukrainian students into schools**

Flora Woltran, University of Vienna, Austria

**Which turn to take? Using translanguaging to promote students' responsiveness in language classrooms**

Nienke Smit, Utrecht University, Netherlands; Jornt Holtman, Hanze University of Applied Sciences, Groningen, Netherlands; Marijn Van Dijk, University of Groningen, Netherlands; Wander Lowie, Faculty of Arts, University of Groningen, Netherlands; Marjolijn Verspoor, University of Pannonia, Veszprem, Hungary

**Translanguaging stance of preschool teachers in Luxembourg**

Gabrijela Aleksic, University of Luxembourg, Luxembourg

Session K: 19

Time: 17:00-18:30

Location: UOM\_A07

**SINGLE PAPER: SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION****Chair**

Dieuwer ten Braak, University of Stavanger, Norway

**Sustainable anchoring of assessment literacy in Higher Education**

Kyle Van den Langenberg, HAN University Nijmegen, Netherlands; Jeroen van der Linden, HAN University of Applied Sciences / Maastricht University, Netherlands; Kitty Meijer, HU University of Applied Sciences Utrecht; Open University of the Netherlands, Netherlands; Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands; Tamara Schilt-Mol, Hogeschool van Arnhem en Nijmegen, Netherlands

**Sustainability of teaching and learning innovations in higher education: a scoping review**

Margaret Bearman, Deakin University, Australia; Paige Mahoney, Deakin University, Australia; Helen Partridge, Deakin University, Australia; Harsha Chandir, Deakin University, Australia

**The impact of educational roles on student learning in transdisciplinary challenge-based learning**

Gemma O'Sullivan, Eindhoven University of Technology (TU/e), Netherlands; Cassandra Tho, Wageningen University and Research Centre, Netherlands; Yvette Baggen, Wageningen University and Research Centre, Netherlands; Despoina Georgiou, Utrecht University, Netherlands; Heleen Pennings, UMC Utrecht, Netherlands; Antoine van den Beemt, Eindhoven University of Technology, Netherlands

**Learning to work across boundaries: developing boundary crossing learning trajectories in HE**

Judith Gulikers, Wageningen University, Netherlands; Karen Fortuin, Wageningen University, Netherlands; Cassandra Tho, Wageningen University &amp; Research, Netherlands; Carla Oonk, Wageningen University, Netherlands



Session K: 20

Time: 17:00-18:30

Location: AUTH\_T202

**SINGLE PAPER: INTERVENTIONS TO REDUCE ANXIETY AND IMPROVE WELL-BEING****Chair**

Telle Haalikari, Häme University of Applied Sciences, Finland

**A Mindful Educational Intervention Program to Reduce Anxiety and Promote Self-esteem in Adolescence**

Victoria Zaroucha, The American College of Thessaloniki (ACT) - Anatolia College, Greece; EVANGELIA GIANNOULI, The American College of Thessaloniki (ACT), Greece

**Effect of a physical activity lifestyle intervention on mental wellbeing of VET students.**

Mara Kirschner, Open University of the Netherlands, Netherlands; Rianne Golsteijn, Open University of the Netherlands, Netherlands; Roelina Kikkert, Open University of the Netherlands, Netherlands; Hans Savelberg, Maastricht University, Faculty of Health, Medicine and Life Sciences, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands

**Active recovery? - Effects of a physical activity break on student's attention and mood**

Christian Müller, Freie Universität Berlin, Germany; Marianne Schuepbach, Freie Universität Berlin, Germany; Jil Wolf, Freie Universität Berlin, Germany; Sven Lindberg, University of Paderborn, Germany

**University Students' Descriptions of Behavioral Changes During ACT-based Well-being Course**

Kristiina Rähkä, University of Helsinki, Finland; Henna Asikainen, University of Helsinki, Finland; Nina Katajavuori, University of Helsinki, Finland

Session K: 21

Time: 17:00-18:30

Location: UOM\_R01

**POSTER PRESENTATION: ASSESSMENT METHODS AND EVALUATION****Chair**

Michalis Michaelides, University of Cyprus, Cyprus

**How Fair is my Test?: A Ratio Coefficient to Help Represent Consequential Validity**

Denis Dumas, University of Georgia, United States; Yixiao Dong, University of Denver, United States; Daniel McNeish, Arizona State University, United States

**Does assessors' expertise matter in comparative judgement of argumentative writing?**

Tine van Daal, University of Antwerp, Belgium; Marije Lesterhuis, UMC Utrecht, Netherlands

**How can feedback support wellbeing? Suggestions from primary and secondary school teachers**

Alessia Bevilacqua, University of Verona, Italy

**Bidirectional links between educator-child relationship and children's regulation across preschool**

Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal, Portugal; Joana Cadima, University of Porto, Portugal

**Developing Social Skills Universal Screeners for the Greek Elementary School**

Lito Eleni Michalopoulou, Aristotle University of Thessaloniki, Greece; Constantinos Vouyoukas, Aristotle University of Thessaloniki, Greece

**A cross-cultural examination of rapid guessing behavior in international large-scale assessments**

Michalis Michaelides, University of Cyprus, Cyprus; Militsa Ivanova, University of Cyprus, Cyprus

Session K: 22

Time: 17:00-18:30

Location: UOM\_GYM

**ROUNDTABLE: AT-RISK STUDENTS AND INCLUSIVE EDUCATION****Chair**

Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany

**Gender, multisensory books, and LGBTQ-themed books in ECEC and school: A two-pronged scoping review**

Radel James Gacumo, University of Stavanger, Norway

**Unraveling low-educated adults' motives for learning: a multidimensional perspective**

Bea Mertens, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium; Vincent Donche, University of Antwerp, Belgium

**Linguistic Complexity Analysis of English Bilingual Economics Materials from Germany**

Luisa Scherzinger, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany; Detmar Meurers, University of Tübingen, Germany

**Comparative analysis of integrated and non-integrated education for prevocational students**

Charlotte Arnou, KU Leuven (BE), Belgium; Ingeborg Placklé, Vrije Universiteit Brussel, Belgium; Machteld Vandecandelaere, KU Leuven, Belgium

Session K: 23

Time: 17:00-18:30

Location: UOM\_A10

**ICT DEMONSTRATION: DO 'EYE' SEE IT ALL? VISUALIZING GAZING PATTERNS IN A VR TO SUPPORT CLASSROOM MANAGEMENT DEVELOPMENT****Do 'eye' see it all? Visualizing gazing patterns in a VR to support classroom management development**

Jolien Mouw, University of Groningen, Faculty of Behavioural and Social Sciences, GION Education/Research, Netherlands;  
Marjon Fokkens-Bruinsma, University of Groningen, Netherlands

Session K: 24

Time: 17:00-18:30

Location: UOM\_A06

**ICT DEMONSTRATION: VIRTUAL REALITY AND THEATRE: LEVERAGING THE BEST OF BOTH WORLDS FOR FACULTY PROFESSIONAL DEVELOPMENT****Virtual Reality and Theatre: Leveraging the Best of Both Worlds for Faculty Professional Development**

Jason Chen, College of William and Mary, United States

Session K: 25

Time: 17:00-18:30

Location: UOM\_A05

**ICT DEMONSTRATION: SUPPORTING TEAMWORK IN TECHNOLOGY-ENHANCED ADULT LEARNING CONTEXTS****Supporting Teamwork in Technology-Enhanced Adult Learning Contexts**

Siem Buseyne, Faculty of Psychology and Educational Sciences, Centre for Instructional Psychology and Technology, KU Leuven Kulak, Belgium; Itec, imec research group at KU Leuven, Imec; CIREL, Centre Interuniversitaire de Recherche en Education de Lille, France, France; Annelies Raes, KU Leuven, Belgium; Robin De Croon, Augment, Department of Computer Science at KU Leuven, Leuven, Belgium, Belgium; Fien Depaep, KU Leuven, Belgium; Francisco Gutierrez Hernández, Augment, Department of Computer Science at KU Leuven, Leuven, Belgium, Belgium; Kamakshi Rajagopal, Faculty of Psychology and Educational Sciences, Centre for Instructional Psychology and Technology, KU Leuven Kulak, Kortrijk, Belgium; Itec, imec research group at KU Leuven, Imec, Leuven, Belgium, Belgium; Tim Van Lier, VRT Sandbox, Vlaamse Radio- en Televisieomroeporganisatie, Brussels, Belgium, Belgium; Stéphanie Vanneste, Itec, imec research group at KU Leuven, Imec, Leuven, Belgium, Belgium; Katrien Verbert, Augment, Department of Computer Science at KU Leuven, Leuven, Belgium, Belgium; Amelie Vrijdags, Hudson Belgium, Brussels, Belgium, Belgium; Ine Windey, KU Leuven, Belgium

Session L: 1

Time: 08:00-09:30

Location: AUTH\_DC3

**INVITED SYMPOSIUM: CREATING SPACES FOR CHILDREN TO MEET UNCERTAINTY THROUGH PLAY AND PLAYFUL LEARNING****Chair**

Valeska Grau Cardenas, Pontificia Universidad Católica de Chile, Chile

**Discussant**

Daniela Jadue Roa, Universidad de O'Higgins, Chile

**Making Learning through Play Contextually Relevant and Effective: Case studies in Mexican ECE**  
Dina Daniela Fajardo Tovar, University of Cambridge, UK, United Kingdom; Sara Baker, University of Cambridge, UK, United Kingdom

**Sociodramatic Play as a learning tool: developing mediation skills in ECE through drama techniques**

Valeska Grau Cardenas, Pontificia Universidad Católica de Chile, Chile; Fernanda Rufs, Pontificia Universidad Católica de Chile, Chile; Belen Herrera, Pontificia Universidad Católica de Chile, Chile; Javiera Gonzalez, Pontificia Universidad Católica de Chile, Chile; Agustín Ramos, Pontificia Universidad Católica de Chile, Chile; Carolina Castro, Pontificia Universidad Católica de Chile, Chile

**Teachers' views on implementing a playful approach to teaching writing skills**

Antonia Zachariou, Department of Psychology, Neapolis University Pafos, Cyprus / Faculty of Education, University of Cambridge, UK / Research Centre for Learning, Teaching and Human Development, School of Education, University of Roehampton, UK, Cyprus; Marisol Basilio, University of Cambridge, United Kingdom; David Whitebread, University of Cambridge, United Kingdom

**Fostering student engagement and technology comprehension through playful teaching and learning**

Hanne Jensen, The LEGO Foundation, Denmark; Lisbet Baad Pedersen, University College South Denmark, Denmark; Stine Rauff Bommersholdt, Ramboll, Denmark

ANNOTATIONS:  
SIG 28 INVITED SYMPOSIUM

Session L: 2

Time: 08:00-09:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: TO SEE THE YET UNSEEN – “CRITICAL ASPECTS” AS A KEY TO DEVELOPING TEACHING AND STUDENTS' LEARNING****Chair**

Ann-Sofie Jägerskog, Stockholm University, Sweden

**Discussant**

Camilla Björklund, University of Gothenburg, Sweden

**Critical aspects as a foundation for a teaching program for early arithmetic skills**

Angelika Kullberg, University of Gothenburg, Sweden; Anna-Lena Ekdahl, Jönköping University, Sweden

**Identifying critical aspects of picture book reading for kindergarteners as hope in uncertain times**

Wai Ming Cheung, The University of Hong Kong, Hong Kong; Serene Chan, University of Hong Kong, Hong Kong

**Using critical aspects in social science: Teacher conceptions of growth mindset in primary school**

Will Zoppellini, Solent University Southampton, United Kingdom

**Focal points for teaching the notion of critical aspects**

Malin Tväråna, Uppsala University, Sweden, Sweden; Anja Thorsten, Department of Behavioural Sciences and Learning, Sweden

ANNOTATIONS:  
SIG 9 INVITED SYMPOSIUM

Session L: 3

Time: 08:00-09:30

Location: UOM\_A04

**SYMPOSIUM: EXECUTIVE FUNCTIONS IN SCIENCE AND MATHEMATICS: FROM COGNITIVE NEUROSCIENCE TO APPLIED RESEARCH****Chair**

Reuven Babai, Tel Aviv University, Israel

**Organisers**

Reuven Babai, Tel Aviv University, Israel; Roland Grabner, University of Graz, Austria

**Discussant**

Iro Xenidou-Dervou, Loughborough University, United Kingdom

**Effect of COVID related school closure on kindergarten's math and executive functioning development**

Kerry Lee, The Education University of Hong Kong, Hong Kong; Jin Sun, The Education University of Hong Kong, Hong Kong; Sum Kwing Cheung, The Education University of Hong Kong, Hong Kong; Alfredo Bautista, The Education University of Hong Kong, Hong Kong

**Domain-specific and domain-general correlates of the conceptual interference effect in mathematics**

Roland Grabner, University of Graz, Austria; Tim Hohensinn, University of Graz, Austria; Katharina Longitsch, University of Graz, Austria; Simon Riedl, University of Graz, Austria; Johannes Woschizka, University of Graz, Austria; Stephan Vogel, University of Graz, Austria

**Overcoming misconceptions in scientific domains requires inhibitory control: overview and next steps**

Genevieve Allaire-Duquette, Université de Sherbrooke, Canada; Lorie-Marlène Brault Foisy, Université du Québec à Montréal (UQAM), Canada; Patrice Potvin, Université du Québec à Montréal, Canada

**Intuitive interference intervention improves junior high school students' achievement in chemistry**

Reuven Babai, Tel Aviv University, Israel; Najla Madback, Tel Aviv University, Israel

Session L: 4

Time: 08:00-09:30

Location: AUTH\_DC1

**SYMPOSIUM: PUT YOUR HANDS ON THE TASK! THE USE OF FINGER POINTING AND TRACING TO SUPPORT MULTIMEDIA LEARNING****Chair**

Björn de Koning, Erasmus University Rotterdam, Netherlands

**Organisers**

Shirong Zhang, Delft University of Technology, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands

**Discussant**

Cris Castro, University of Birmingham, United Kingdom

**Mouse Pointing to Support Learning From Labeled and Unlabeled Split-Attention Materials**

Shirong Zhang, Delft University of Technology, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam, Netherlands

**To Trace or Not to Trace: Mimicry in Timed Multimedia Lessons with Pointing and Tracing**

Stoo Sepp, University of New England, Australia, Australia; Shirley Agostinho, University of Wollongong, Australia; Sharon Tindall-Ford, University of Wollongong, Australia; Fred Paas, Erasmus University Rotterdam, Netherlands

**Tracing or Pointing? An eye-tracking study on how learners benefit from using the hands for learning**

Roland Bruenken, Saarland University, Germany; Babette Park, University of Education Freiburg, Germany, Germany; Andreas Korbach, Saarland University, Germany; Paul Ginns, The University of Sydney, Australia

**Multimedia learning through tracing and pointing: A meta-analysis**

Paul Ginns, The University of Sydney, Australia

Session L: 5

Time: 08:00-09:30

Location: UOM\_A12

**SYMPOSIUM: ANALOGY SUPPORTS INDIVIDUALS IN HARNESSING THE UNCERTAIN****Chair**

Katarzyna Bobrowicz, University of Luxembourg, FLSHASE, Luxembourg

**Organiser**

Jean-Pierre Thibaut, Université de Bourgogne / Lead - CNRS, France

**Discussant**

Anke Maria Weber, University of Luxembourg, Luxembourg

**Children and Adults Adapt their Search Strategy to Analogy Task Requirement. An Eyetracking Approach**

Jean-Pierre Thibaut, Université de Bourgogne / Lead - CNRS, France

**Distracted and Misled, Yet Capable of Transfer: Analogical Transfer in 2.5- to 5.5-Year-Olds**

Katarzyna Bobrowicz, University of Luxembourg, FLSHASE, Luxembourg; Anke Maria Weber, University of Luxembourg, Luxembourg; Angélica Mendes, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg; Alicja Jamroga, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg; Samuel Greiff, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg

**Explaining with Spontaneous Analogies**

Yang Gao, Tsinghua University, China; Kexing Que, Tsinghua Laboratory of Brain and Intelligence, Tsinghua University, China; Stella Christie, Department of Psychology, Tsinghua Laboratory of Brain and Intelligence, Tsinghua University, China

**Supporting Students' Mathematical and Analogical Thinking while Under Stress**

Lindsey Richland, University of California, Irvine, United States; Almaz Mesghina, Northwestern University, United States; Elayne Vollman, Lake Forest College, United States; Bella Lerner, University of California, Irvine, United States

Session L: 6

Time: 08:00-09:30

Location: UOM\_CH

**SYMPOSIUM: THE PHENOMENON OF SCHOOL ALIENATION UNDER THE MAGNIFYING GLASS****Chairs**

Julia Morinaj, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Organisers**

Julia Morinaj, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Discussant**

Barbara Schober, University of Vienna, Austria

**Teacher Justice Perception and School Alienation in Swiss Primary and Secondary Schools**

Julia Morinaj, University of Bern, Switzerland; Angela Rebecca Aegerter, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**The risk of school alienation after transition to upper secondary school in Austria**

Claudia Schreiner, University of Innsbruck, Austria; Fred Berger, University of Innsbruck, Department of Education, Austria; Livia Jesacher-Rössler, Friedrich-Alexander-University Erlangen-Nürnberg, Germany; Christian Kraler, Teacher Education and School Research, Austria; Wolfgang Hagleitner, University of Innsbruck, Department of Education, Austria; Susanne Roßnagl, University of Innsbruck, Department of Education, Austria

**Conditions for and expressions of alienation from learning in secondary school**

Alyssa Lauren Grecu, Center for Research on Education and School Development, Germany

**CANCELLED: Applying school alienation theory and (...)**

Trude Havik, University of Stavanger, Norway

Session L: 7

Time: 08:00-09:30

Location: AUTH\_T002

**SYMPOSIUM: UNDERSTANDING AND COMBATTING GENDER DIFFERENCES IN STUDENT MOTIVATIONAL FACTORS IN STEM****Chair**

Kaley Lesperance, Technical University of Munich, Germany

**Organiser**

Kaley Lesperance, Technical University of Munich, Germany

**Discussant**

Christian Thurn, ETH Zurich, Switzerland

**Gender difference in motivation profiles, achievement and STEM aspiration of primary school students**

Kezia Olive, University of Helsinki, Finland; Xin Tang, University of Helsinki, Finland; Anni Loukomies, University of Helsinki, Finland; Kalle Juuti, University of Helsinki, Finland; Katariina Salmela-Aro, Helsinki University, Finland

**Mathematically talented female and male students: Equally motivated in math and science?**

Lena Keller, University of Potsdam, Germany; Franzis Preckel, University of Trier, Germany; Jacquelynne S. Eccles, University of California Irvine, United States; Martin Brunner, University of Potsdam, Germany

**Does teacher support lessen gender differences in motivational outcomes in mathematics?**

Kaley Lesperance, Technical University of Munich, Germany; Jasmin Decristan, University of Wuppertal; IDEa-Research Center, Germany; Doris Holzberger, Technical University of Munich (TUM) & ZIB (Centre for International Student Assessment), Germany

**Promoting children's interests and ability beliefs in engineering and technology at a science museum**

Fidelia Law, University of Exeter, United Kingdom; Luke McGuire, University of Exeter, United Kingdom; Manuela Baretto, University of Exeter, United Kingdom; Adam Rutland, University of Exeter, United Kingdom

Session L: 8

Time: 08:00-09:30

Location: UOM\_A02

**SYMPOSIUM: ASSESSING SCIENTIFIC REASONING AND ARGUMENTATION SKILLS ACROSS DISCIPLINES****Chair**

Marleen Evers, KU LEUVEN, Belgium

**Organiser**

Marleen Evers, KU LEUVEN, Belgium

**Discussant**

Javier Fernández, Universidad de Leon, Spain

**Impact of teacher's epistemological beliefs on assessing scientific reasoning tasks in psychology**

Marleen Evers, KU LEUVEN, Belgium; Jan Elen, KU Leuven, Belgium; Machteld Vandecandelaere, KU Leuven, Belgium

**Assessing scientific reasoning skills and research competences in teaching-related fields of studies**

Anna Horrer, Institute of Medical Education, LMU Klinikum, Ludwig-Maximilians University Munich, Germany; Tolgonai Erkinova, Department of Psychology, LMU Munich, Germany; Insa Reichow, Educational Technology Lab, German Research Center for Artificial Intelligence, Berlin, Germany; Michael Sailer, LMU Munich, Germany; Maximilian Sailer, University of Passau, Germany; Moritz Heene, Department of Psychology, LMU Munich, Germany; Tamara Van Gog, Utrecht University, Netherlands; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany; Martin Fischer, LMU University Hospital, Institute of Medical Education, Germany; Jan Zottmann, Institute of Medical Education, University Hospital, LMU Munich, Germany

**Assessing students' causal historical reasoning ability with the use of writing tasks**

Gerhard Stoel, Radboud University, Nijmegen, Netherlands; J.P. van Drie, University of Amsterdam, Netherlands

**Measuring assessment skills in simulations: Influence of pre-service teacher characteristics**

Michael Nickl, Technical University of Munich (TUM), Germany; Daniel Sommerhoff, Leibniz Institute for Science and Mathematics Education, Germany; Elias Codreanu, Technische Universität München, Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany; Tina Seidel, Technische Universität München, Germany

Session L: 9

Time: 08:00-09:30

Location: UOM\_A03

**SYMPOSIUM: THE SOCIAL NATURE OF EDUCATION: A CLOSER LOOK AT PEER NETWORKS OF STUDENTS AND TEACHERS****Chair**

Julia Eberle, Ruhr-Universität Bochum, Germany

**Discussant**

Julia Eberle, Ruhr-Universität Bochum, Germany

**Examining Academic Diversity in Online Peer Interactions at Scale**

Oleksandra Poquet, TUM, Germany; Shane Dawson, University of South Australia, Australia; Vitomir Kovanovic, University of South Australia, Australia; Christopher Brooks, University of Michigan, United States

**The role of social capital in secondary school teachers' work socialization process**

Thibault Coppe, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Laura Thomas, Ghent University, Belgium

**How is the occurrence of collaborative activities related to teachers' collaborative attitudes?**

Julie Droissart, Ghent University, Belgium; Melissa Tuytens, Ghent University, Belgium

**The relationship between stress and perceived social support among university students**

Jasperina Brouwer, University of Groningen, Netherlands; Jannika Haase, Leibniz University Hannover, Germany; Lysann Zander, Leibniz University Hannover, Germany

Session L: 10

Time: 08:00-09:30

Location: AUTH\_TE2

**SYMPOSIUM: TEACHERS' ASSESSMENTS AND STUDENTS' EDUCATIONAL SUCCESS – INSIGHTS INTO A COMPLEX RELATION****Chair**

Katharina Molitor, Center for Research on Education and School Development, TU Dortmund University, Germany

**Organisers**

Katharina Molitor, Center for Research on Education and School Development, TU Dortmund University, Germany; Justine Stang-Rabrig, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Discussant**

Christine M Davies, University of Auckland, New Zealand

**Teachers' judgment accuracy: how is it related to teaching quality and student achievement?**

Dimitra Kolovou, St. Gallen University of Teacher Education (PHSG), Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Anna-Katharina Praetorius, University of Zurich, Switzerland

**Accuracy of teachers' perceptions on students' reading fluency.**

Maris Juhkam, Tallinn University, Estonia; Mikko Aro, University of Jyväskylä, Finland; Piret Soodla, Tallin University, Estonia

**Attending the academic track without teacher recommendation – predictors of educational attainment**

Katharina Molitor, Center for Research on Education and School Development, TU Dortmund University, Germany; Justine Stang-Rabrig, TU Dortmund University, Germany; Paul Fabian, CENTER FOR RESEARCH ON EDUCATION AND SCHOOL DEVELOPMENT, Germany; Nele McElvany, TU Dortmund University, Germany

**Lens model studies: Revealing teachers' judgments for teacher education**

Esther Kaufmann, University of Konstanz, Switzerland

Session L: 11

Time: 08:00-09:30

Location: AUTH\_T102

**SYMPOSIUM: COMPLEX DYNAMICAL SYSTEMS IN EDUCATIONAL RESEARCH: DIVERSE CONCEPTUAL AND EMPIRICAL APPLICATIONS****Chair**

Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece

**Organisers**

Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece; Avi Kaplan, Temple University, United States; Matthijs Koopmans, Mercy College, United States

**Discussant**

Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

**A Complexity Perspective on Researching Causality in Educational Phenomena**

Stephen Whitney, University of Missouri/Columbia, United States; Avi Kaplan, Temple University, United States; Joanna Garner, Old Dominion University, Norfolk, United States

**Complexity in Student Learning: An Example from Sign Networks in Learning**

Richard Taylor, University of Oxford, United Kingdom; Judith Hillier, University of Oxford, United Kingdom; Ann Childs, University of Oxford, United Kingdom

**A Complex Dynamic Systems Perspective on Identity, Motivation, and Learning**

Avi Kaplan, Temple University, United States; Joanna Garner, Old Dominion University, United States

**Investigating Educational Phenomena with Catastrophe Theory**

Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece

Session L: 12

Time: 08:00-09:30

Location: AUTH\_DC2

**SYMPOSIUM: CAUSES AND EFFECTS OF MATHEMATICS ANXIETY****Chair**

Florence Gabriel, University of South Australia, Australia

**Discussant**

Thomas Hunt, University of Derby, United Kingdom

**Math anxiety and math teaching anxiety: Are they independent and do they relate to pupils' outcomes?**

Kinga Morsanyi, Queen's University Belfast, United Kingdom; Andy Ash, Loughborough University, United Kingdom

**The influence of student and teacher gender on students' maths anxiety : A whole school study**

Rebecca Marrone, University of South Australia, Australia; Fernando Marmolejo-Ramos, University of South Australia, Australia; Florence Gabriel, University of South Australia, Australia

**Mathematics anxiety and positive attitudes towards mathematics are not mutually exclusive**

Krzysztof Cipora, Loughborough University, United Kingdom; Serena Rossi, Loughborough University, United Kingdom; Hannah Connolly, University of York, United Kingdom; Alexander von Bergen, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Vera Baumgartner, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland; Venera Gashaj, University of Bern, Switzerland

**Math self-efficacy, and not Math anxiety, steers students away from STEM**

Flávia H. Santos, University College Dublin, Ireland; Mariuche Gómezes, University College Dublin, Ireland; Claire Elliott, University College Dublin, Ireland; Sara Caviola, University of Padova, Italy; Krzysztof Cipora, Loughborough University, United Kingdom

Session L: 13

Time: 08:00-09:30

Location: UOM\_A13

**SINGLE PAPER: LEARNING TO READ AND WRITE****Chair**

Arniikka Kuusisto, University of Helsinki, Finland

**Reading and writing: The role of home literacy and emergent literacy skills**

GIULIA VETTORI, University of Florence, Italy; Oriana Incognito, University of Florence, Italy; Lucia Bigozzi, University of Florence, Italy

**Learning to read: From an umbrella review of reading research to an educator's practice guide**

Jordi Casteleyn, Antwerp University, Belgium; Mathea Simons, University of Antwerp, Belgium; Tom Smits, Antwerp University, Belgium

**The influence of writing medium and gesture modality on the development of early literacy skills**

Theresa Kalchhauser, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, Portugal; Mariana Silva, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, Portugal; Rui Alexandre Alves, University of Porto, Portugal

**Dot-to-dot Practice Enhances Children's Handwriting:**

Esther Adi-Japha, Bar-Ilan University, Israel; Rafat Ghanamah, Oranim Academic College of Education+ The University of Haifa, Israel; Hazar Eghbaria-Ghanamah, The University of Haifa, Israel; Avi Karni, Haifa University, Israel

Session L: 14

Time: 08:00-09:30

Location: UOM\_CR

**SINGLE PAPER: FOSTERING MOTIVATION THROUGH INSTRUCTIONAL DESIGN****Chair**

Bjorn Wansink, Utrecht University, Netherlands

**Automated, Negative Performance Feedback Harms Students' Emotions (Less when it is Elaborated)**

Livia Kuklick, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Dr. Marlit Annalena Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**The Relationships between Pedagogy, Motivation, and Perception of the Learning Environment**

Irit Sasson, Tel-Hai College, Israel; NETA GAVISH, Tel-Hai College and Shamir Research Institute, Israel; Joy Benatov, University of Haifa, Faculty of Education, Israel

**Making lectures more interesting? - Effects of a Utility Value Intervention**

Nathalie John, DIPF | Leibniz Institute for Research and Information in Education, Germany; Franziska Baier, Goethe-Universität Frankfurt, Germany; Sebastian Korinth, DIPF | Leibniz Institute for Research and Information in Education, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Multimedia Learning with Cartoons: A Test of the Emotional Design Hypothesis**

Fangzheng Zhao, University of California, Santa Barbara, United States; Richard Mayer, University of California, Santa Barbara, United States

Session L: 15

Time: 08:00-09:30

Location: UOM\_R05

**SINGLE PAPER: FEEDBACK IN TECHNOLOGY-ENHANCED LEARNING****Chair**

Sarah Crafter, The Open University, United Kingdom

**Effects of Computer-Based KCR and AUC Feedback on Affective-Motivational Outcomes**

Ute Mertens, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Marlit Annalena Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**Effects of feedback and cooperative learning on knowledge acquisition in online flipped classrooms**

Ruben Schlag, University of Passau, Germany; Karsten Stegmann, University of Passau, Germany; Maximilian Sailer, University of Passau, Germany

**Friends or Feedback?—Computer Science Students' Goals' and Their Intention to Use a Feedback-Tool**

Tugce Özbek, Augsburg University, Germany; Tobias Mömke, Augsburg University, Germany; Aida Roshany, Augsburg University, Germany; Ingo Kollar, Augsburg University, Germany

**Learning analytics supporting mathematical thinking**

Sanna Oinas, University of Helsinki, Finland; Mikko Asikainen, The University of Helsinki, Finland; Mari-Pauliina Vainikainen, Tampere University, Finland

Session L: 16

Time: 08:00-09:30

Location: UOM\_R09

**SINGLE PAPER: USING VIDEO TO SUPPORT THE SOCIAL ASPECTS OF LEARNING****Chair**

Esther Brunner, Thurgau University of Teacher Education, Kreuzlingen (PHTG), Switzerland

**Students' acceptance and confidence in the use of video pedagogy in higher education**

Anja Garone, University College Leuven Limburg, Belgium; Greet Fastré, University College Leuven Limburg, Belgium; Kiara Billiau, University College Leuven Limburg, Belgium; Steven Verjans, University College Leuven Limburg, Belgium; An Verburgh, University College Leuven Limburg, Belgium

**The Contribution of Narrative Video production to SEL in Education.**

Evanna Ratner, Gordon Academic College, Israel

**Using Video to Support Student-Teachers' Classroom Management During Early Field Placement**

George Olympiou, University of Cyprus, Cyprus

**A review of interactive use of video for learning and assessment in higher education**

Magnus Hontvedt, University of Southeastern Norway, Norway; Charlotte Beal, University of South-Eastern Norway, Norway; Thomas de Lange, University of South-Eastern Norway, Norway; Marit Skarbø Solem, Faculty of Humanities, Sports and Educational Science, Norway; Tonje Stenseth, University of South-Eastern Norway, Norway

Session L: 17

Time: 08:00-09:30

Location: UOM\_R08

**SINGLE PAPER: INSTRUCTIONAL QUALITY: TEACHER- AND TEACHING-RELATED FACTORS****Chair**

Carolina Rodríguez Llorente, Universidad de La Coruña, Spain

**The role of teacher characteristics for instructional quality: A meta-analysis**

Nicoletta Bürger, University of Hildesheim, Germany; Katharina Engelmann, Universität Hildesheim, Germany; Laura Schultze, Universität Hildesheim, Germany; Gabriele Prinz, University of Hildesheim, Germany; Marvin Scott Schlamelcher, University of Hildesheim, Germany; Jürgen Menthe, University of Hildesheim, Germany; Barbara Schmidt-Thieme, University of Hildesheim, Germany; Christof Wecker, Universität Hildesheim, Germany

**Teachers' attributes for academic optimism: understanding its development for equity and excellence**

Ruud Lelieur, University of Antwerp, Belgium; Ruben Vanrussett, University of Antwerp, Belgium; Noel Clycq, University of Antwerp, Belgium; Jan Vanhoof, University of Antwerp, Belgium

**Teacher Training for Whole Child Outcomes: Evidence of the impact of Teach For Nigeria**

Kata Mihaly, RAND Corporation, United States; Jonathan Schweig, RAND Corporation, United States; Elaine Wang, RAND Corporation, United States; Sabrina Lee, RAND Corporation, United States

**Adaptive Teaching: What Research on Learning and Instruction Can Learn from Schools**

Hanna Dumont, University of Potsdam, Germany; Jasmin Decristan, University of Wuppertal; IDeA-Research Center, Germany; Benjamin Fauth, Institute for Educational Analysis, Germany; Nora Fröhlich, Institute for Educational Analysis, Germany; Ann-Kathrin Jaekel, University of Tuebingen, Germany; Simon Ohl, University of Potsdam, Germany; Enkeleta Shtërbani, Bergische Universität Wuppertal, Germany



Session L: 18

Time: 08:00-09:30

Location: UOM\_A07

**SINGLE PAPER: PERSONALITY, MOTIVATIONAL AND EMOTIONAL ASPECTS IN TEACHING AND MENTORING****Chair**

Lito Eleni Michalopoulou, Aristotle University of Thessaloniki, Greece

**What do pre-service teachers' personality scores measure? A longitudinal study on college admission**

Georg Krammer, University College of Teacher Education Styria, Austria; Julie Aitken Schermer, The University of Western Ontario, Canada; Corinna Koschmieder, University College of Teacher Education Styria, Austria; Richard Goffin, The University of Western Ontario, Canada; Nhung Hendy, Department of Management, Towson University, United States; Michael Biderman, University of Tennessee at Chattanooga, United States

**Teacher emotions and their antecedents in the team-taught classroom from the teachers' perspective**

Franziska Muehlbacher, University of Salzburg, Austria; Gerda Hagenauer, University of Salzburg, Austria; Melanie M. Keller, IPN Leibniz Institute for Science Education, Germany

**Associations between mentor teachers' motivation and their behavior and enthusiasm in mentoring**

Clara Kuhn, University of Salzburg, Austria; Gerda Hagenauer, University of Salzburg, Austria; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Andreas Bach, University of Salzburg, Austria

**Beginning teachers' basic psychological needs: a multi-informant to optimize initial guidance**

Silke Hellebaut, University of Ghent, Belgium; Katrien De Cocker, Ghent University, Belgium; Leen Haerens, Ghent University, Belgium

Session L: 19

Time: 08:00-09:30

Location: UOM\_A10

**SINGLE PAPER: TECHNOLOGY USE FOR LEARNING, THINKING AND ASSESSMENT PURPOSES****Chair**

Maria A. Flores, University of Minho, Portugal

**BYOD and technology use in class: Does it really have an impact?**

Maria-Luisa Schmitz, University of Zurich, Institute of Education, Switzerland; Chiara Antonietti, University of Zurich, Institute of Education, Switzerland; Tessa Consoli, University of Zurich, Institute of Education, Switzerland; Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland; Philipp Gonon, University of Zurich, Institute of Education, Switzerland; Dominik Petko, University of Zurich, Switzerland

**Middle school Students Design Chemical Reactions through Computational Modeling using MMM Platform**

Sharona T Levy, University of Haifa, Israel; Asnat R. Zohar, University of Haifa, Faculty of Education, Israel

**Personalized Learning with Digital Technologies – A mixed-methods study in secondary schools**

Regina Schmid, Schwyz University of Teacher Education, Switzerland; Christine Pauli, University of Fribourg, Switzerland; Rita Stebler, University of Zurich (retired), Switzerland; Dominik Petko, University of Zurich, Switzerland

**How do test-takers rate their effort? A comparative analysis of self-report and log file data**

Róbert Csányi, SZTE, Hungary; Gyöngyvér Molnár, University of Szeged, MTA-SZTE Digital Learning Technologies Research Group, Hungary

Session L: 20

Time: 08:00-09:30

Location: AUTH\_TE1

**SINGLE PAPER: MOTIVATIONAL BELIEFS AND STRATEGIES IN HIGHER EDUCATION****Chair**

Armin Jentsch, University of Oslo, Norway

**Does frustration of students' needs matter in relation to burnout and engagement?**

Piermarco Consiglio, University of Groningen, Netherlands; Joke Fleer, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands

**Developing and validating a measure for the perceived civic and vocational relevance of studies**

Jonas Breetzke, University of Hamburg, Germany; Derya Özbacgi, University of Hamburg, Germany; Carla Bohndick, University of Hamburg, Germany

**Longitudinal associations between intrinsic study motivation and achievement at university**

Laura Aglaia Sophia Messerer, University of Mannheim, Germany; Ronny Scherer, University of Oslo, Norway; Stefan Janke, University of Mannheim, Germany

**(Help me to) motivate me: Promoting motivation and motivational regulation in higher education**

Sophie von der Mülbe, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

Session L: 21

Time: 08:00-09:30

Location: AUTH\_T202

**SINGLE PAPER: TEACHER AGENCY****Chair**

Tjitske de Groot, Utrecht University, Netherlands

**Early career teachers' professional agency and associations with leadership vision and school size**

Liyuan E, University of Helsinki, Finland; Auli Toom, University of Helsinki, Finland; Jenni Sullanmaa, Tampere University, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Tiina Soini-Ikonen, Tampere University, Finland; Kirsi Pyhälä, University of Helsinki, Finland

**Supporting Teacher Agency During a Collaborative Inquiry-based In-service Teacher Education Course**

Äli Leijen, University of Tartu, Estonia; Margus Pedaste, University of Tartu, Estonia; Liina Lepp, University of Tartu, Estonia

**Unpacking Relationships Among Teacher Agency, Attribution, and Resilience in an Age of Neoliberalism**

Ji Hong, University of Arizona, United States; Dionne Cross Francis, University of North Carolina at Chapel Hill, United States; Kelly Chong, Round Rock Children's Therapy Center, United States; Laura Lewis, University of Oklahoma, United States; Alex Parsons, Salt Lake City School District, United States; Crystal Recknagel, J.J. Pearce High School, United States; Qian Wang, University of Oklahoma, United States

**A questionnaire for assessing teacher agency across pre-service and in-service context**

Äli Leijen, University of Tartu, Estonia; Margus Pedaste, University of Tartu, Estonia; Aleksander Baucaal, University of Belgrade, Serbia

Session L: 22

Time: 08:00-09:30

Location: UOM\_A11

**SINGLE PAPER: MIGRANT AND REFUGEE STUDENTS: ACHIEVEMENT, SOCIAL AND MOTIVATIONAL ASPECTS****Chair**

Denis Dumas, University of Georgia, United States

**School Diversity Models and Relations with Achievement: Does the Domain Matter?**

Roy Konings, KU Leuven (BE), Belgium; Orhan Agirdag, KU Leuven / University of Amsterdam, Belgium; Jozefien De Leersnyder, KU Leuven / University of Amsterdam, Belgium

**Sense of belonging of children with and without a migration background in Austria**

Saranda Shabanhaxhaj, University of Graz, Institute of Education Research and Teacher Education, Austria; Heike Wendt, University of Graz, Austria

**Emotion Differentiation Ability & School Belonging among Flemish Multilingual and Monolingual Pupils**

Graziela N.M. Dekeyser, KU Leuven (BE), Belgium; Orhan Agirdag, KU Leuven / University of Amsterdam, Belgium; Jozefien De Leersnyder, KU Leuven (BE), Belgium

**Immigrant-Origin Youths' Aspirations – a Cross-National Analysis Comparing the U.S. and Switzerland**

Anita Caduff, University of California, San Diego, United States

Session L: 23

Time: 08:00-09:30

Location: UOM\_GYM

**ROUNDTABLE: LEARNING AND INSTRUCTIONAL TECHNOLOGIES****Chair**

Daniel Deimel, University of Duisburg-Essen, Germany

**Study-Buddy: An educational chatbot for study advice on effective learning strategies**

Tim Debets, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Martijn van Otterlo, Open Universiteit, Netherlands; Tanja Vos, Open Universiteit, Netherlands; Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands; Gino Camp, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Evaluating Elementary Student Experiences from Digital Safety Immersion Summer Camp**

Florence Martin, North Carolina State University, United States; Doreen Mushi, North Carolina State University, United States; Julie Bacak, University of North Carolina Charlotte, United States; Weichao Wang, University of North Carolina Charlotte, United States

**EU-FairPlay: Educational Equity and Digital Game-Based Learning. Current state of research.**

Zhitian Zhang, Hector Research Institute of Education Sciences and Psychology, University of Tübingen, Germany; Markus Suren, TU Chemnitz, Germany; Helge Fischer, TU Dresden, Germany; Katerina Tsarava, University of Tübingen, Germany; Martina Seemann, TU Chemnitz, Germany; Richard Joos, TU Dresden, Germany

**Identifying teachers' needs whilst working with a teacher dashboard: an explorative study**

Manel van Kessel, Leiden University, Netherlands; Nadira Saab, Leiden University, Netherlands; Inge Molenaar, Radboud Universiteit Nijmegen, Netherlands

Session L: 24

Time: 08:00-09:30

Location: UOM\_A05

**ICT DEMONSTRATION: HYBRID HUMAN-AI DRIVEN PERSONALIZED EDUCATION TOOL****Hybrid Human-AI Driven Personalized Education Tool**

Mohammadreza Molavi Hajiagha, Technical Information Library (TIB), Germany; Mohammadreza Tavakoli, German National Library for Science and Technology (TIB), Germany; Gábor Kismihók, Leibniz Information Centre for Science and Technology, Germany

Session L: 25

Time: 08:00-09:30

Location: UOM\_A06

**ICT DEMONSTRATION: AN R-BASED APPLICATION TO CODE TEXTS SEMI-AUTOMATICALLY****An R-Based Application to Code Texts Semi-Automatically**

Nico Andersen, DIPF | Leibniz Institute for Research and Information in Education, Germany; Fabian Zehner, German Institute for International Educational Research (DIPF), Centre for International Student Assessment (ZIB), Germany

Session L: 26

Time: 08:00-09:30

Location: UOM\_A09

**ICT DEMONSTRATION: MEET NEARPOD: A GAME-CHANGING TOOL FOR STUDENT ENGAGEMENT****Meet Nearpod: A game-changing tool for student engagement**

Nikki Aharonian, Oranim College of Education, Israel

Keynotes: 1

Time: 09:45-11:15

Location: AUTH\_CH

**KEYNOTE: ON THE NECESSITY OF MAJOR AND MINOR SYNÄNDOR IN THE EDUCATIONAL SCIENCES****Chair**

Roger Saljo, University of Gothenburg, Sweden

**On the necessity of major and minor synvänder in the educational sciences**

Sangeeta Bagga-Gupta, Jönköping University, Sweden

Keynotes: 2

Time: 09:45-11:15

Location: HELEXPO\_CC

**KEYNOTE: DEALING WITH DISAGREEMENT: COMING TO TERMS WITH THE SOCIAL NATURE OF KNOWLEDGE****Chair**

Raija Hämäläinen, University of Jyväskylä, Finland

**Dealing with Disagreement: Coming to Terms with the Social Nature of Knowledge**

Sarit Barzilai, University of Haifa, Israel; Eva Thomm, University of Erfurt, Germany

Keynotes: 3

Time: 09:45-11:15

Location: UOM\_CH

**KEYNOTE: CONSCIOUSNESS AS A COMPASS FOR NAVIGATING LEARNING IN UNCERTAIN TIMES****Chair**

Maria Platsidou, University of Macedonia, Greece

**Consciousness as a compass for navigating learning in uncertain times**

NIKOLAOS MAKRIS, Democritus University of Thrace, Greece

Session M: 1

Time: 12:00-13:30

Location: UOM\_CH

**INVITED SYMPOSIUM: DIFFERENT PERSPECTIVES ON MOMENTARY SITUATED ENGAGEMENT IN CLASSROOM CONTEXTS****Chair**

Raven Rinas, Augsburg University, Germany

**Organisers**Ricardo Böheim, Technical University of Munich, Germany;  
Jennifer Symonds, University College Dublin, Ireland**Discussant**Anastasia/Natassa Kyriakopoulou, National & Kapodistrian  
University of Athens, Greece**Optimal Learning Moments in Finnish and US Science Classrooms: A Network Analysis****Approach**

Xin Tang, Shanghai Jiao Tong University, China; I-Chien Chen, Michigan State University, United States; Jari Lavonen, University of Helsinki, Finland; Barbara Schneider, Michigan State University, United States; Joseph Krajcik, Michigan State University, United States; Katariina Salmela-Aro, Helsinki University, Finland

**Exploring Collaboration and Executive Functions in Open-Ended Problem-Solving in Mathematics**

K. Ann Renninger, Swarthmore College, United States; Ricardo Böheim, Technical University of Munich, Germany; Maria Consuelo De Dios, Swarthmore College, United States; Maeve R. Hogan, Swarthmore College, United States; Moe Htet Kyaw, Swarthmore College, United States; Ana G. Michels, Swarthmore College, United States; Marina Nakayama, Swarthmore College, United States; Pablo E. Torres, University of Cambridge, United Kingdom; Helena Werneck de Souza Dias, Swarthmore College, United States

**Class Size, Momentary Behavioural Engagement, and Low Income Schools: An Irish National Study**

Jennifer Symonds, University College Dublin, Ireland; Aisling Davies, University College Dublin, Ireland; Seaneen Sloan, University College Dublin, Ireland; Dymna Devine, University College Dublin, Ireland; Gabriella Martinez Sainz, University College Dublin, Ireland; Ricardo Böheim, Technical University of Munich, Germany; Matt Somerville, IOE, UCL's Faculty of Education and Society, United Kingdom; Edward Baines, UCL Institute of Education, London, United Kingdom; Xin Tang, Shanghai Jiao Tong University, China; Niamh Oeri, University of Bern, Switzerland; Raven Rinas, Augsburg University, Germany; Florian Bühler, University of Bern, Switzerland; Gertraud Benke, Klagenfurt University, Austria

**Peer Relations, Engagement and Achievement in Primary School Classrooms**

Edward Baines, UCL Institute of Education, London, United Kingdom; Matt Somerville, IOE, UCL's Faculty of Education and Society, United Kingdom; Ricardo Böheim, Technical University of Munich, Germany; Yue Zhao, University College London, United Kingdom; Jennifer Symonds, University College Dublin, Ireland; Aisling Davies, University College Dublin, Ireland; Peter Blatchford, UCL Institute of Education, United Kingdom

**ANNOTATIONS:**

EFG INVITED SYMPOSIUM

Session M: 2

Time: 12:00-13:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: SOCIAL NETWORK TOOLS: ADVANCED METHODS TO CONTEXTUALIZE LEARNING RESEARCH****Chair**

Laura Thomas, Ghent University, Belgium

**Organiser**

Jasperina Brouwer, University of Groningen, Netherlands

**Discussant**

Hanke Korpershoek, University of Groningen, Netherlands

**The social network of teachers guiding newly arrived migrant students: A qualitative study**

Laura Thomas, Ghent University, Belgium; Britt Adams, Ghent University, Belgium; Melissa Tuytens, University of Ghent, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**The development of peer support networks, self-efficacy, and drop-out intentions**

Julia Eberle, Ruhr-Universität Bochum, Germany; Jasperina Brouwer, University of Groningen, Netherlands

**Analysing teacher agency within school social structure: New uses of visual methods**

Natasa Pantic, University of Edinburgh, United Kingdom; Marc Sarazin, University of Edinburgh, United Kingdom; Thibault Coppe, University of Groningen, Netherlands

**A social network perspective on workplace learning and social capital formation in a medical team**

Jasperina Brouwer, University of Groningen, Netherlands; Bram Jacobs, University of Groningen, Netherlands

**ANNOTATIONS:**

SIG 17 INVITED SYMPOSIUM

Session M: 3

Time: 12:00-13:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: BUILDING A BETTER UNDERSTANDING OF TEACHERS' WELL-BEING****Chairs**

Robert Klassen, University of York, United Kingdom; Sophie Thompson-Lee, University of York, United Kingdom

**Discussant**

Courtney Bell, University of Wisconsin, United States

**The long-term trajectories of teachers' well-being: Results from a 10 year longitudinal study**

Uta Dr. Klusmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Thamar Voss, University of Freiburg, Germany; Dirk Richter, University of Potsdam, Germany; Mareike Kunter, German Institute for International Educational Research (DIPF), Germany

**Using a Nationally Representative Survey to Understand Post-Pandemic U.S. Teacher Well-Being**

V. Darleen Opfer, RAND Corporation, United States; Elizabeth Steiner, RAND, United States

**Revisiting Effects of Teacher Characteristics on Stress: A Virtual Reality Study**

Lisa Bardach, University of Tübingen, Germany; Yizhen Huang, University of Potsdam, Germany; Eric Richter, University of Potsdam, Germany; Robert Klassen, University of York, United Kingdom; Thilo Kleickmann, Kiel University, Germany; Dirk Richter, University of Potsdam, Germany

**Under Pressure: The Role of the Principal-Teacher Relationship in Teachers' Well-Being**

Mathias Dehne, Friedrich Schiller University Jena, Germany; Debora Roorda, University of Amsterdam, Netherlands; Helma Koomen, Research Institute of Child Development and Education, Netherlands; Marjolein Zee, Erasmus University Rotterdam, Netherlands

ANNOTATIONS:  
E-CER INVITED SYMPOSIUM

Session M: 4

Time: 12:00-13:30

Location: AUTH\_DC2

**SYMPOSIUM: PERSPECTIVES ON EMERGING TEACHER LEARNING RESEARCH****Chair**

Susan Yoon, University of Pennsylvania, United States

**Discussant**

Susan Goldman, University of Illinois at Chicago, United States

**Engaging teachers in dialogic discourse: PD effectiveness and teachers' individual learning**

Ricardo Böheim, Technical University of Munich, Germany; Ann-Kathrin Schindler, University of Augsburg, Germany; Tina Seidel, Technische Universität München, Germany

**The Role of Data Analytics Tools for Teachers Learning to Implement Student Collaboration**

Nikol Rummel, Ruhr University Bochum, Germany; Anouschka van Leeuwen, Utrecht University, Netherlands

**Investigating co-design as a professional development model to support teacher efficacy**

Eleni Kyza, Cyprus University of Technology, Cyprus; Andria Agesilaou, Cyprus University of Technology, Cyprus; Yiannis Georgiou, Cyprus University of Technology, Cyprus; Andreas Hadjichambis, Ministry of Education, Culture, Sports and Youth, Cyprus

**Teachers' Adaptive Expertise and Impacts on Student Experiences During STEM-Integrated Learning**

Susan Yoon, University of Pennsylvania, United States; Amanda Cottone, University of Pennsylvania, United States; Joeeun Shim, University of Pennsylvania, United States; Chad Evans, University of Pennsylvania, United States; Kate Miller, University of Pennsylvania, United States; Noora Noushad, University of Pennsylvania, United States; Blanca Himes, University of Pennsylvania, United States

Session M: 5

Time: 12:00-13:30

Location: AUTH\_T002

**SYMPOSIUM: ENJOYING COGNITIVE EFFORT: OUTCOMES AND DEVELOPMENT OF NEED FOR COGNITION IN YOUTH****Chair**

Jeroen Lavrijsen, KU Leuven, Belgium

**Discussant**

Astrid Poorthuis, Utrecht University, Netherlands

**Need for Cognition Predicts Academic Achievement Beyond Cognitive Ability, Openness and Persistence**

Jeroen Lavrijsen, KU Leuven, Belgium; Franzis Preckel, University of Trier, Germany; Karine Verschueren, KU Leuven, Belgium

**Need for Cognition Predicts Changes in Academic Interest but not the Other Way Round**

Franzis Preckel, University of Trier, Germany; Vsevolod Scherrer, Universität Trier, Germany

**Need for Cognition as a Resource for Coping with Everyday Challenges in School**

Johanna Bruchmann, Institute of Psychology, Faculty of Behavioural and Social Sciences, Chemnitz University of Technology, Germany; Alexander Strobel, Technische Universität Dresden, Germany; Antonia Martin, TU Chemnitz, Germany; Laura May Legler, TU Dresden, Germany; Anja Strobel, TU Chemnitz, Germany

**The Development of Need for Cognition: Longitudinal Differences across Secondary School Tracks**

Franzis Preckel, University of Trier, Germany; Joanne Colling, University of Luxembourg, Luxembourg; Rachel Wollschläger, University of Luxembourg, Luxembourg; Ulrich Keller, University of Luxembourg, Luxembourg; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg

Session M: 6

Time: 12:00-13:30

Location: UOM\_CR

**SYMPOSIUM: HOMEWORK: FAMILY INVOLVEMENT AND TEACHERS' ROLE****Chair**

Susana Rodríguez, University of A Coruña, Spain

**Organisers**

Lisa Benckwitz, IPN Leibniz Institute for Science Education, Germany; Konstantina Falanga, Aristotle University of Thessaloniki, Greece; Tania Vieites, Universidad de La Coruña, Spain; Jianzhong Xu, Mississippi State University, United States

**Discussant**

Carolina Rodríguez Llorente, Universidad de La Coruña, Spain

**Homework assistance provided by private tutors and students' outcomes – Does students' age matter?**

Lisa Benckwitz, IPN Leibniz Institute for Science Education, Germany; Katharina Kohl, Leibniz Institute for Science and Mathematics Education, Germany; Natalia Suárez-Fernández, University of Oviedo, Spain; José Carlos Núñez Pérez, University of Oviedo, Spain; Karin Guill, Leibniz Institute for Science and Mathematics Education, Germany

**Parent homework involvement, student motivation and performance: A person-centered longitudinal study**

Konstantina Falanga, Aristotle University of Thessaloniki, Greece; Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece

**MITCA: Homework Implementation Method improving student self-regulation and school engagement**

Tania Vieites, Universidad de La Coruña, Spain; Fátima María Díaz Freire, University of A Coruña, Spain; Lucía Díaz Pita, University of A Coruña, Spain; Susana Rodríguez, University of A Coruña, Spain; Antonio Valle Arias, University of A Coruña, Spain

**Student-Perceived Parental Help with Homework: Identifying Student Profiles**

Carolina Rodríguez Llorente, Universidad de La Coruña, Spain; Ruiping Yuan, University of Mississippi, United States; Jianzhong Xu, Mississippi State University, United States

Session M: 7

Time: 12:00-13:30

Location: UOM\_A02

**SYMPOSIUM: UNDERSTANDING STUDENTS' PERSPECTIVES ON LEARNING AND INSTRUCTION: A QUALITATIVE APPROACH****Chair**

Louise David, Maastricht University, Netherlands

**Organisers**

Felicitas Biber, Maastricht University, Netherlands; Marloes Broeren, Avans Hogeschool / Avans University of Applied Sciences, Netherlands; Morane Stevens, KU Leuven - University of Leuven, Belgium

**Discussant**

Matthias Nückles, University of Freiburg, Germany

**Imagining education: An exploration of students' prototypical ideas of instruction**

Morane Stevens, KU Leuven - University of Leuven, Belgium; Jan Elen, KU Leuven, Belgium

**How students apply learning strategies: A qualitative comparison between different strategy users**

Gabriel Taban, Fontys University of Applied Sciences, Netherlands; Felicitas Biber, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands

**Students' Habitual Use of Effective Learning Strategies**

Louise David, Maastricht University, Netherlands; Felicitas Biber, Maastricht University, Netherlands; Rik Crutzen, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands

**What factors influence higher education students' motivation to use cognitive learning strategies**

Marloes Broeren, Avans Hogeschool / Avans University of Applied Sciences, Netherlands; Peter Verkoeijen, Erasmus University Rotterdam, Netherlands; Guus Smeets, Erasmus University Rotterdam, Netherlands; Arends Lidia, Erasmus University Rotterdam, Netherlands

Session M: 8

Time: 12:00-13:30

Location: UOM\_A03

**SYMPOSIUM: PHYSICAL ACTIVITY AND EXECUTIVE FUNCTIONS: FROM KINDERGARTEN TO SECONDARY SCHOOL****Chair**

Kristin Kolloff, University of Bern, Switzerland

**Organiser**

Christina Heemskerk, University of Bern, Switzerland

**Discussant**

Ulrich Dettweiler, University of Stavanger, Norway

**Reciprocal associations between Physical Activity, Motor Skills and Executive Functions**

Anssi Vanhala, University of Helsinki, Finland; Anna Widlund, Åbo Akademi University, Finland; Johan Korhonen, Åbo Akademi University, Finland; Pirjo Aunio, University of Helsinki, Finland

**Primary school children's physical activity and executive functioning: An intraindividual study**

Lars-Erik Malmberg, University of Oxford, United Kingdom; Christina Heemskerk, University of Bern, Switzerland; Henry Lo, Oxford University, United Kingdom; Patrick Esser, Oxford Brookes University, United Kingdom; Helen Dawes, Oxford Brookes University, United Kingdom; Stefan Kodzhabashev, University of Bern, Switzerland; Claudia Roebbers, University of Bern, Switzerland

**Movement-based learning support in the classroom**

Jennifer Liersch, University of Duisburg-Essen, Germany; Karin Eckenbach, University of Duisburg-Essen, Germany; Michael Pfitzner, University of Duisburg-Essen, Germany

**Physical activity, behaviour, and executive functions in primary school**

Christina Heemskerk, University of Bern, Switzerland; Lars-Erik Malmberg, University of Oxford, United Kingdom; Claudia Roebbers, University of Bern, Switzerland

Session M: 9

Time: 12:00-13:30

Location: AUTH\_DC1

**SYMPOSIUM: PAYING ATTENTION TO (MATHEMATICAL) RELATIONS: RELATIONAL REASONING IN MATHEMATICAL DEVELOPMENT****Chair**

Patricia Alexander, University of Maryland, United States

**Organiser**

Jake McMullen, University of Turku, Finland

**Discussant**

Minna Hannula-Sormunen, University of Turku, Finland

**Exploring the Role of Relational Attention in Math Learning**

Lindsey Richland, University of California, Irvine, United States; Hongyang Zhao, University of California Irvine, United States

**Multiplicative and analogical reasoning support the learning of fraction arithmetic**

Hilma Halme, University of Turku, Department of Teacher Education, Finland; Minna Hannula-Sormunen, University of Turku, Department of Teacher Education, Finland; Jake McMullen, University of Turku, Finland

**Profiles of mathematical relational reasoning and students' motivation in fifth grade**

Kaja Mädamürk, Tallinn University, Estonia; Jüri Kurvits, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia

**How a relational preference predicts 6-7-year olds' performance on word problems**

Wim Van Dooren, KU Leuven, Belgium; Elien Vanluydt, KU Leuven - University of Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

Session M: 10

Time: 12:00-13:30

Location: AUTH\_DC3

**SYMPOSIUM: IDENTIFYING AND ASSESSING COMPUTATIONAL THINKING****Chair**

Niels Dohn, Aarhus University, Denmark

**Organiser**

Nina Bonderup Dohn, University of Southern Denmark, Denmark

**Discussant**

Crina Damsa, University of Oslo, Norway

**A holistic approach to identifying computational thinking in preschool settings**

Ane Bjerre Odgaard, University College South Denmark, Denmark

**Computational thinking through sewing: Translating across approaches to algorithms**

Anna Keune, Technical University of Munich, Germany

**Identifying and assessing Computational Thinking in three Danish L1 classrooms**

Roland Hachmann, University College South Denmark, Denmark

**Developing a sociocultural framework for identifying and assessing Computational Thinking**

Nina Bonderup Dohn, University of Southern Denmark, Denmark; Stig Børsen Hansen, University of Southern Denmark, Denmark

Session M: 11

Time: 12:00-13:30

Location: AUTH\_T202

**SINGLE PAPER: TEAM TEACHING****Chair**

Penelope Watson, University of Auckland, New Zealand

**Empirical Research on the Effectiveness of Team Teaching: Conceptual and Methodological Essentials**

Dries De Weerd, University of Antwerp, Belgium; Mathea Simons, University of Antwerp, Belgium; Elke Struyf, University of Antwerp, Belgium; Hanne Tack, Ghent University, Belgium

**Effective Teaching Behaviour: a Comparison between Individual Teaching and Team Teaching**

Aron Decuyper, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium; Mathea Simons, University of Antwerp, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**Collaboration and Shared Responsibility in Team Teaching: Development of an Instrument**

Aron Decuyper, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium; Mathea Simons, University of Antwerp, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**Student teachers' peer team teaching experiences: perceptions, profiles and transition probabilities**

Loan De Backer, University of Antwerp, Belgium; Wouter Schelfhout, University of Antwerp, Belgium; Mathea Simons, University of Antwerp, Belgium; Ellen Vandervieren, University of Antwerp, Belgium

Session M: 12

Time: 12:00-13:30

Location: UOM\_R09

**SINGLE PAPER: MOTIVATIONAL AND METACOGNITIVE BELIEFS IN SELF-REGULATED LEARNING****Chair**

Michael Weinstock, Ben-Gurion University of the Negev, Israel

**When high confidence in the group and your peers negatively impacts group performance**

Jose Hanham, Western Sydney University, Australia; Adam Hendry, Parramatta Marist High School, Australia

**Effects of Feedback Valence and Self-Efficacy on Students' Challenge-Threat Responses**

Florence Lucas, Utrecht University, Netherlands; Eva Janssen, Utrecht University, Netherlands; Maaikje Taheij, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Patterns of social interaction and regulation in CL: The role of groups' metacognitive evaluations**

Eija Vuorenmaa, University of Oulu, Finland, Finland; Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

**Educational Findings = Common Sense? The Interplay of Hindsight Bias and Educational Misconceptions**

Stephanie Pieschl, Technical University of Darmstadt, Germany; Emma L. Goldstein, Technical University of Darmstadt, Germany; Leon Scholz, Technical University of Darmstadt, Germany

Session M: 13

Time: 12:00-13:30

Location: AUTH\_TE2

**SINGLE PAPER: STUDENT ENGAGEMENT, EXPERIENCES, PERFORMANCE AND LEARNING LOSS DURING COVID-19****Chair**

Christian Hartmann, Technical University Munich, Germany

**University students' engagement during the pandemic: The role of organization-based self-esteem**

Jannika Haase, Leibniz University Hannover, Germany; Elisabeth Höhne, Leibniz Universität Hannover, Germany; Lysann Zander, Leibniz University Hannover, Germany

**COVID-19-related school closures and mathematical performance of grade 3 students in Germany**

Hedwig Gasteiger, Osnabrück University, Germany; Karoline M. Sachse, Institut für Qualitätsentwicklung im Bildungswesen, Humboldt-Universität zu Berlin, Germany; Kristoph Schumann, Institut für Qualitätsentwicklung im Bildungswesen, Humboldt-Universität zu Berlin, Germany; Mona Gerve, Osnabrück University, Germany; Axel Schulz, University of Bielefeld, Germany; Maria Engelbert-Kocher, Institut für Qualitätsentwicklung im Bildungswesen, Humboldt-Universität zu Berlin, Germany

**Disabled students' educational and psycho-social experiences during the COVID-19 pandemic crisis**

Filippos Papazis, National and Kapodistrian University of Athens, Greece; Anastasia Toulia, Department of Special Education, University of Thessaly, Greece; Anastasia Vlachou, Department of Educational Studies, National and Kapodistrian University of Athens, Greece; Theodora Papazoglou, Department of Educational Studies, National and Kapodistrian University of Athens, Greece; Aristeia Fyssa, Department of Educational Sciences and Early Childhood Education, University of Patras, Greece; Lia Tsermidou, Department of Educational Studies, National and Kapodistrian University of Athens, Greece; Stavroula Kalaitzi, Department of Educational Studies, National and Kapodistrian University of Athens, Greece

**Catching up after Covid-19: Do school programs for remediating pandemic-related learning loss work?**

Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

Session M: 14

Time: 12:00-13:30

Location: UOM\_A04

**SINGLE PAPER: PROGRAMS AND TOOLS SUPPORTING STUDENTS WITH SPECIAL EDUCATIONAL NEEDS****Chair**

Albert Logtenberg, ICLON-Leiden University Graduate School of Teaching, Netherlands

**The Effectiveness of Feuerstein's Instrumental Enrichment Programme: A Systematic Review**

Jo Van Herwegen, UCL Institute of Education, United Kingdom; Petri Partanen, Mid Sweden University, France

**The use of ICT in Special Needs Education – a systematic review**

Daniela Nussbaumer, University of Applied Sciences of Special Needs Education, Switzerland

**The Good Behavior Game for children with Special Educational Needs: A scoping review**

Maria Jornevald, Stockholm University, Department of Special Education, Sweden; Hanna Ginner Hau, Stockholm University, Sweden; Lise Roll-Pettersson, Stockholm University, Department of Special Education, Sweden

**A large-scale Check in Check out study in Finnish PBS schools: Intervention response and moderators**

Mika Paananen, University of Jyväskylä, Finland; Anne Karhu, University of Eastern Finland, Finland; Asko Tolvanen, University of Jyväskylä, Finland



Session M: 15

Time: 12:00-13:30

Location: UOM\_A10

**SINGLE PAPER: LIFELONG LEARNING IN THE WORKPLACE: MOTIVATIONAL AND BEHAVIOURAL FACTORS****Chair**

Anoush Margaryan, Copenhagen Business School, Denmark

**The Effect of Goal-Setting on Work Environment, Transfer Motivation and Transfer of Training**

Bastian de Jong, University of Amsterdam, Netherlands; Frank Cornelissen, University of Amsterdam, Netherlands; Joost Jansen in de Wal, University of Amsterdam, Netherlands; Thea Peetsma, University of Amsterdam, Netherlands

**Socially shared regulation of learning in workplace teams – When and how does it appear?**

Niina Palmu, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Piet Van den Bossche, University of Antwerp, Belgium

**Academic teams – a space for individual and cooperative competence development**

Franziska Zellweger, Zurich University of Teacher Education, Switzerland; Mirjam Kocher, University of Education Zurich, Switzerland

**Exploring qualitative differences in motivation and learning among low-educated adults**

Bea Mertens, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium; Vincent Donche, University of Antwerp, Belgium

Session M: 16

Time: 12:00-13:30

Location: UOM\_A11

**SINGLE PAPER: ARGUMENTATION AND REASONING: EDUCATIONAL ASPECTS****Chair**

Jeff Vomund, George Mason University, United States

**Perspective-taking and -getting's impact on learning and attitudes in a text-based context**

Paulo Jose Medeiros dos Santos, Saarland University, Germany; Armin Weinberger, Saarland University, Germany

**Promoting Knowledge Acquisition through Argumentation**

Kalyпсо Iordanou, University of Central Lancashire, Cyprus

**The impact of inductive reasoning on school achievements**

Benő Csapó, University of Szeged, Hungary; Edit Tóth, SZTE Institute of Education, Hungary

**Microblogging and classroom talk**

Anja Amundrud, University of Oslo, Norway; Maren Omland, Oslo Metropolitan University, Norway; Ingvill Rasmussen, University of Oslo, Norway

**Deepening and Broadening the Dialogue of Collaborative Learners with Conversational Agents**

Armin Weinberger, Saarland University, Germany; Birk Thierfelder, Universität des Saarlandes, Germany

**ANNOTATIONS:**

DUE TO THE UNTIMELY PASSING OF PROF. BENŐ CSAPÓ, HIS PRESENTATION ENTITLED "THE IMPACT OF INDUCTIVE REASONING ON SCHOOL ACHIEVEMENTS" WILL NOT BE PRESENTED AT THE CONFERENCE. IN RESPECT AND HONOUR OF HIM, IT WILL REMAIN LISTED AS PART OF THE CONFERENCE PROGRAMME.

Session M: 17

Time: 12:00-13:30

Location: AUTH\_TE1

**SINGLE PAPER: SCHOOLS AS SUPPORTIVE CONTEXTS FOR STUDENTS AT-RISK****Chair**

Bob Kapteijns, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**Support for Children from Low-Income Families by Promoting Effective Learning Strategy Use**

Yuri Uesaka, The University of Tokyo, Japan

**How can schools protect immigrant students from depressive symptoms?**

Rekar Abdulhamed, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Reija Klemetti, Finnish Institute for Health and Welfare, Finland

**How do teachers deal with non-suicidal self-injurious behavior of students? A case-based study**

Baerbel Kracke, University of Jena, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany; Franziska Greiner, Universität Leipzig, Germany

**A New Instrument to Assess Trauma-related Components of Teachers' Competencies**

Friedrich Linderkamp, University of Wuppertal, School of Education, Germany; Bodo Przibilla, University of Wuppertal, School of Education, Germany; Gino Casale, University of Wuppertal, Germany

**Pedagogy of hope in prison? The case of emotional education in a prison – a therapeutic community**

Sergio Grossi, Researcher (Marie Curie Fellow) - Complutense University of Madrid, Spain

Session M: 18

Time: 12:00-13:30

Location: UOM\_R05

**SINGLE PAPER: LEARNING AND ASSESSMENT IN SCIENCE EDUCATION****Chair**

Jennifer Meyer, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Teacher professionalization in integrating literacy and science education: A design-based research**

Hilde Kooiker, Utrecht University/HZ University of Applied Sciences, Netherlands; Ted Sanders, Utrecht University, Netherlands; Jacqueline Evers-Vermeul, Utrecht University, Netherlands

**Does using real-world contexts in science teaching improve learning? A field study on electricity**

Benedikt Gottschlich, University of Tübingen, Germany; Jan-Philipp Burde, University of Tuebingen, Germany; Thomas Wilhelm, Goethe University Frankfurt, Germany; Liza Dopatka, TU Darmstadt, Germany; Verena Spatz, TU Darmstadt, Germany; Thomas Schubatzky, University of Innsbruck, Austria; Claudia Haagen-Schützenhöfer, University of Graz, Austria; Lana Ivanjek, TU Dresden, Germany; Martin Hopf, University of Vienna, Austria

**Developing and Validating Representational Competence Test to Assess Multiple Representations**

Fitria Arifiyanti, University of Szeged, Doctoral School of Education, Hungary; Soeharto Soeharto, University of Szeged, Doctoral School of Education, Hungary

**The Use of Formative Peer Assessment as a Scaffold during Inquiry Learning in STEM Education**

Amber Van Hoe, Ghent University, Belgium; Tijs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium

**Do we all have the same understanding of subject-specificity in research on teaching quality?**

Armin Jentsch, University of Oslo, Norway

Session M: 19

Time: 12:00-13:30

Location: UOM\_A13

**SINGLE PAPER: TEACHERS' SOCIO-EMOTIONAL COMPETENCIES AND MOTIVATIONAL BELIEFS****Chair**

Idit Katz, Ben-Gurion University of the Negev, Israel

**Social-emotional competencies of Austrian primary school teachers**

Barbara Gasteiger-Klicpera, University of Graz, Austria; Christina Oswald, University of Graz, Austria; Lisa Paleczek, University of Graz, Austria

**Implicit theories of intelligence in German student teachers**

Franziska Froberg, Universität Leipzig, Germany; Christin Lotz, University Leipzig, Germany; Anne Deiglmayr, University of Leipzig, Germany

**The role of education in early childhood educators' skills in self- and co-regulation of emotions**

Kristiina Mänty, University of Oulu, Finland; Susanna Kinnunen, University of Oulu, Finland; Outi Rinta-Homi, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Jouni Peltonen, University of Oulu, Finland

**Changes in student teachers' self-efficacy and relations to emotion words in written reflections**

Anja Henke, University of Potsdam, Germany; Andrea Westphal, Universität Greifswald, Germany; Isabell Hußner, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany

Session M: 20

Time: 12:00-13:30

Location: UOM\_R08

**SINGLE PAPER: EYE TRACKING STUDIES IN TEACHER PROFESSIONAL DEVELOPMENT****Chair**

Kasia Banas, University of Edinburgh, United Kingdom

**Perceptions of classroom disruptions among (prospective) teachers: a mixed methods approach**

Ann-Sophie Grub, Saarland University, Germany; Roland Bruenken, Saarland University, Germany; Doris Lewalter, Technical University of Munich (TUM), Germany; Antje Biermann, Saarland University, Germany

**Teachers' stress influences the effect of visual focus of attention on child-centred practices**

Anna-Liisa Jögi, Tallinn University, Estonia; Saswati Chaudhuri, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Pipelines and initial reports from machine learning classification of teacher gaze in the classroom**

Nora McIntyre, University of Southampton, United Kingdom

**A Meta-Analytic Review of Eye-Tracking Studies to Investigate Teachers' Professional Vision**

Özün Keskin, University of Augsburg, Germany; Andreas Gegenfurtner, University of Augsburg, Germany; Tina Seidel, Technische Universität München, Germany; Kathleen Stürmer, University of Tübingen, Germany

Session M: 21

Time: 12:00-13:30

Location: UOM\_A07

**SINGLE PAPER: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION: FACTORS THAT MATTER****Chair**

Sunet Grobler, University of Innsbruck - Institute for Teacher Education and School Research, Austria

**Adapting the Technological Pedagogical and Content Knowledge (TPACK) survey for higher education**

Ha Nguyen, University of Groningen, Netherlands; Jolien Mouw, University of Groningen, Faculty of Behavioural and Social Sciences, GION Education/Research, Netherlands; Angeliki Mali, University of Crete, Greece; Hanke Korpershoek, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

**TPACK and the design of teaching against misinformation in five school subjects**

Thomas Nygren, Uppsala University, Sweden; Malin Tväråna, Uppsala University, Sweden; Carl-Anton Werner Axelsson, Uppsala University, Sweden

**The Interplay Between Technology-Enhanced Item Formats and Test-Taker Cognition**

Burcu Arslan, ETS Global, Netherlands; Blair Lehman, ETS, United States; Madeleine Keehner, ETS, United States; Marlit Annalena Lindner, IWM - Leibniz-Institut für Wissensmedien, Universität Tübingen, Germany

**Both quantity and quality of technology integration matter**

Tessa Consoli, University of Zurich, Institute of Education, Switzerland; Maria-Luisa Schmitz, Institute of Education, University of Zurich, Switzerland; Chiara Antoniotti, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland; Dominik Petko, University of Zurich, Switzerland; Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland; Philipp Gonon, Institute of Education, University of Zurich, Switzerland

Session M: 22

Time: 12:00-13:30

Location: AUTH\_T102

**SINGLE PAPER: TEACHER ENTHUSIASM****Chair**

Antti Laherto, University of Helsinki, Finland

**How to become an enthusiastic teacher?—Motivational antecedents in early stages of teacher education**

Christin Lotz, University Leipzig, Germany; Patrick Hawlitschek, Institute for Educational Quality Improvement (IQB), Germany; Anne Deiglmayr, University of Leipzig, Germany

**Influence of students' performance and teachers' enthusiasm on teachers' use of engaging messages**

Samuel Falcón, University of Las Palmas de Gran Canaria, Spain; Jaime Leon, University of Las Palmas de Gran Canaria, Spain; Wilfried Admiraal, Oslo Metropolitan University, Centre for the Study of Professions, Norway

**Promoting student enthusiasm: The role of teacher enthusiasm, teaching methods and time schedule**

Eline Camerman, KU Leuven, Belgium; Jeroen Lavrijsen, KU Leuven, Belgium; Peter Kuppens, KU Leuven, Belgium; Karine Verschuere, KU Leuven, Belgium

Session M: 23

Time: 12:00-13:30

Location: UOM\_R03

**POSTER PRESENTATION: DIGITAL LITERACY AND LEARNING****Chair**

Marjaana Puurtinen, University of Turku, Finland

**The Changing Demands on Diverse Faculty's Digital Competence in Hybrid Learning Environments**

Natalia Auer, Malmö University, Sweden; Katherine Doerr, Faculty of Education and Society, Malmö University, Sweden

**What happens when the Novelty wears off? An empirical investigation of learning with Virtual Reality**

Sara Klingenberg, University of Copenhagen, Denmark; Guido Makransky, University of Copenhagen, Denmark

**(How) can word processors improve writing in secondary classes? Results of an Intervention Study.**

Viktoria Michels, Universität zu Köln/ University of Cologne, Germany; Till Woerfel, Mercator Institute for Language and Literacy Education, Germany; Michael Becker-Mrotzek, Mercator Institute for Language and Literacy Education, Germany

**Visual behavior of students differing in justification beliefs when reading conflicting reports**

Meng-Jung Tsai, National Taiwan Normal University, Taiwan; Ching-Yeh Wang, National Kaohsiung University of Hospitality and Tourism, Taiwan; An-Hsuan Wu, National Taiwan Normal University, Taiwan; Ivar Bråten, University of Oslo, Norway

**Regular media use and learning effects on the ability to critically reason with digital media**

Dominik Braunheim, Johannes Gutenberg-Universität, Germany

**Designing for learning in the digital transformation: a design-based research**

Monique Docter, University of Twente, Netherlands; Maaïke Endedijk, University of Twente, Netherlands

Session M: 24

Time: 12:00-13:30

Location: UOM\_R02

## POSTER PRESENTATION: SUPPORTING EARLY CHILDHOOD EDUCATION

## Chair

Victoria Johansson, Kristianstad University, Sweden

**Supporting knowledge transfer in early childhood education – a longitudinal evaluation study**

Daniela Ulber, HAW Hamburg, Germany; Nina Hogrebe, University of Applied Sciences Hamburg, Germany; Valerie Bergmann, HAW Hamburg, Germany

**Cross-cultural differences in preschool teachers' perceptions of teacher-child emotional dependency**

Sofie Hendrix, KU Leuven, Belgium; Jantine Spilt, KU Leuven, Belgium; Joana Cadima, University of Porto, Portugal; Ana Camacho, University of Porto, Portugal; Tiago Ferreira, University of Porto, Portugal; Athanasios Gregoriadis, Aristotle University of Thessaloniki, Greece; Helma Koomen, Research Institute of Child Development and Education, Netherlands; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Andrea Eva Otero Mayer, National Distance Education University, Spain; Iwona Omelanczuk, Faculty of Education, University of Warsaw, Poland; Eija Pakarinen, University of Jyväskylä, Finland; Jochem Thijs, University Utrecht, Netherlands; Olga Wyslowska, Faculty of Education, University of Warsaw, Poland; Karine Verschueren, KU Leuven, Belgium

**Effect of childcare teachers' positions on their attribution of responsibility for problems.**

Maori Urakawa, Nagasaki Junshin Catholic University, Japan

**The Relationship between Educator-Child-Ratio and Pedagogical Quality in ECEC Explained**

Kristina Hausladen, Otto-Friedrich-University Bamberg, Germany; Katrin Wolf, Otto-Friedrich-University of Bamberg, Germany

**E-assessment instrument for assessing children's development and the feedback it offers**

Anne-Mai Meesak, Tallinn University, Institute of Educational Sciences, Estonia

**'A story a day': a study on implicit learning of syntactic structures**

Athina Ntalli, University of Oxford, United Kingdom; Jelena Mirkovic, University of York, United Kingdom; Akhila Pydah, Independent researcher, India; Adhvikha Shetty, Promise Foundation, India; Pooja Pandith, Promise Foundation, India; Usha M N, The Promise Foundation, India; Sanjana Nagendra, The Promise Foundation, India; Kala B., Promise Foundation, India; Chandana S., Promise Foundation, India; Gideon Arulmani, Promise Foundation, India; Sonali Nag, University of Oxford, United Kingdom

Session M: 25

Time: 12:00-13:30

Location: UOM\_R01

## POSTER PRESENTATION: E-LEARNING AND ONLINE LEARNING IN STUDYING METACOGNITION, EMOTION AND BEHAVIOUR

## Chair

Joni Lämsä, University of Oulu, Finland

**Fostering self-regulated learning with metacognitive prompts in an online learning environment**

Rebecca Pape, Catholic University of Eichstätt-Ingolstadt, Germany

**Sparking enjoyment in online synchronous education: The function of emotional mimicry**

Muhterem Dindar, Tampere University, Finland; Anne Christiane Frenzel, Ludwig-Maximilians-Universität München, Germany

**Self or System – Who regulates? The Effects of Prompts in Adaptive Learning**

Aileen Schlichting, Universität Ulm / Institute of Psychology and Education, Germany; Tina Seufert, Ulm University, Germany

**Improving students' Life Skills to seed for the future. An Italian Faculty Development program**

Roberta Silva, University of Verona, Italy; Luigina Mortari, University of Verona, Italy; Alessia Bevilacqua, University of Verona, Italy

**The facilitators and barriers of online-delivered teacher training**

Catalina Lomos, LISER - Luxembourg Institute for Socio Economic Research, Luxembourg; Hans Luyten, University of Twente, Netherlands; Filipe Lima da Cunha, SCRIPT (Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques), Luxembourg; Frauke Kesting, SCRIPT (Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques), Luxembourg

**Anthropomorphism and Emotional Valence in Instructional Images**

Sascha Schneider, University of Zurich, Switzerland; Nadine Scheller, Technische Universität Chemnitz, Germany; Sebastian Jansen, Technische Universität Chemnitz, Germany

Session M: 26

Time: 12:00-13:30

Location: UOM\_A06

## WORKSHOP: ANALYSIS OF HIGH-AROUSAL TEACHING EPISODES THROUGH VIDEO-RECORDED DATA

**Analysis of high-arousal teaching episodes through video-recorded data**

Liisa Postareff, HAMK University of Applied Sciences, Finland; Heta Rintala, Häme University of Applied Sciences, Finland; Anna Parpala, University of Helsinki, Finland; Petri Nokelainen, Tampere University, Finland; Milla Räisänen, University of Helsinki, Finland; Anna Wallin, University of Tampere, Finland; Ilmari Puhakka, Tampere University, Finland

Session M: 27

Time: 12:00-13:30

Location: UOM\_A05

**ICT DEMONSTRATION: WIKADOE: A DUTCH WEBSITE TO MONITOR AND INCREASE THE SELF-REGULATED LEARNING OF PRIMARY SCHOOL PUPILS****Wikadoe: a dutch website to monitor and increase the self-regulated learning of primary school pupils**

Natalie Boelen, Hogeschool PXL, Belgium; Jolien Quinten, Hogeschool PXL, Belgium

Lunch / Sponsored Session: 1

Time: 13:30-14:30

Location: UOM\_CR

**SPONSORED SESSION: MDPI – ACADEMIC OPEN ACCESS PUBLISHING****MDPI – Academic Open Access Publishing**

Nemou Mihai-Alexandru, MDPI AG, Romania; Aleksandar Antić, MDPI, Switzerland

**ANNOTATIONS:**

THIS SESSION WILL TAKE PLACE IN AUTH\_T.EVENTSROOM (10TH FLOOR) INSTEAD OF UOM\_CR.

Session N: 1

Time: 14:45-16:15

Location: UOM\_CH

**INVITED SYMPOSIUM: AVENUES TO IMPROVE STUDENTS' LEARNING WITH MULTIPLE DOCUMENTS****Chairs**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Cornelia Schoor, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**Organisers**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Cornelia Schoor, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**Discussant**

Ladislao Salmerón, University of Valencia, Spain

**Students Engaging in Multiple Texts Literacy Task: Investigation of Integration**

Eiina Hämäläinen, University of Jyväskylä, Finland; Carita Kili, Tampere University, Finland

**Students' task model before and after working on a multiple-document task**

Cornelia Schoor, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Jean Francois Rouet, University of Poitiers, Center for Research on Cognition and Learning, France; MaryAnne Britt, Northern Illinois University, United States

**Seems like a difficult task! Monitoring accuracy in multiple document comprehension**

Huib Tabbers, Erasmus University Rotterdam, Netherlands; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Daniel Schiffrer, DIPF | Leibniz Institute for Research and Information in Education, Germany; Cornelia Schoor, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**Does individualized feedback promote favorable behaviors in multiple document reading?**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Daniel Bengs, DIPF | Leibniz Institute for Research and Information in Education, Germany; Daniel Biedermann, DIPF | Leibniz Institute for Research and Information in Education, Germany; George-Petru Ciordas-Hertel, DIPF | Leibniz Institute for Research and Information in Education, Germany; Beate Eichmann, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Ilka Wolter, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Cordula Artelt, Leibniz Institute for Educational Trajectories, Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

**ANNOTATIONS:**

SIG 2 INVITED SYMPOSIUM

Session N: 2

Time: 14:45-16:15

Location: AUTH\_CH

**INVITED SYMPOSIUM: SPONTANEOUS MATHEMATICAL FOCUSING TENDENCIES IN EARLY CHILDHOOD****Chair**

Minna Hannula-Sormunen, University of Turku, Finland

**Organiser**

Jake McMullen, University of Turku, Finland

**Discussant**

Riikka Mononen, University of Oulu, Finland

**Spontaneous focusing on number in parent-child interactions**

Alex Silver, University of Pittsburgh, United States; Melissa Libertus, University of Pittsburgh, United States

**Spontaneous Focusing on Magnitudes and the development of numerical abilities and arithmetic**

Arnaud Viarouge, Paris Cité University CNRS UMR 8240, France; Nydia Vurdah, Paris Cité University, France

**Longitudinal assessment of attention to numerosity**

Michele Mazzocco, University of Minnesota, United States; Jeffrey Bye, University of Minnesota, United States

**SFON and Spontaneous Focusing On Numerical Order as predictors of early numerical development**

Minna Hannula-Sormunen, University of Turku, Finland; Jo Van Hoof, University of Turku, Finland; Heidi Harju, University of Turku, Finland; Cristina Nanu, University of Turku, Finland; Jake McMullen, University of Turku, Finland

**ANNOTATIONS:**

E-CER INVITED SYMPOSIUM

Session N: 3

Time: 14:45-16:15

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: OPPORTUNITIES & CHALLENGES OF LEARNING AND ASSESSMENT IN DEMOCRATIC CITIZENSHIP EDUCATION IN SCHOOLS****Chair**

Lihong Huang, Oslo Metropolitan University, Norway

**Organiser**

Lihong Huang, Oslo Metropolitan University, Norway

**Discussant**

Jens Bruun, Aarhus University, Denmark

**Generational differences in Institutional Trust among Adolescents in Flanders**

Ellen Claes, KU Leuven, Belgium; Maria Magdalena Isac, University of Groningen, Netherlands; Linde Stals, KU LEUVEN, Belgium

**“We just try to learn as much as possible” in Norwegian Social Science Classrooms**

Anders Kjøstvedt, Oslo Metropolitan University, Norway; Evy Jøsok, Oslo Metropolitan University, Norway

**The effect of cooperative learning on student political efficacy: A formative intervention study**

Eva Kosberg, OsloMet, Norway

**Challenges & possibilities teachers face when assessing to promote democratic citizenship competence**

Nanna Paaske, OsloMet, Norway; Siri Mohammad-Roe, Oslo Metropolitan University, Norway; Wouter Smets, Karel de Grote University college, Belgium; Ama Amitai, Karel de Grote Hogeshoo, Belgium; Naomi Alexia Randazzo, Centro Iniziative Ricerche e Programmazione economica, Italy; Lihong Huang, Oslo Metropolitan University, Norway

## ANNOTATIONS:

SIG 13 INVITED SYMPOSIUM

Session N: 4

Time: 14:45-16:15

Location: AUTH\_T002

**SYMPOSIUM: ADOLESCENTS' MOTIVATIONAL PROFILES IN DIFFERENT LEARNING AREAS. RELATIONS WITH STUDENT OUTCOMES****Chair**

Eve Kikas, Tallinn University, Estonia

**Discussant**

Anastasia Efklides, Aristotle University of Thessaloniki, Greece

**Adolescents' motivational profiles in Math and relations with metacognition, emotions & achievement**

Dimitrios Moustakas, Aristotle University of Thessaloniki, Greece; Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece

**Expectancy-value-cost profiles in math and language arts, behavioral engagement, and achievement**

Kukka-Maaria Polso, University of Helsinki, Finland; Heta Tuominen, University of Eastern Finland, Finland; Petri Ihantola, University of Helsinki, Finland; Markku Niemivirta, University of Eastern Finland, Finland

**Motivational profiles in biology and physics, relations with learning and need satisfaction**

Kati Aus, Institute of Educational Sciences, Estonia; Ita Puusepp, University of Helsinki, Finland; Eve Kikas, Tallinn University, Estonia

**Profiles of learning motivation and strategies related to grades and psychological well-being**

Eliis Härma, Tallinn University, Estonia; Aleksander Pulver, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia

Session N: 5

Time: 14:45-16:15

Location: UOM\_CR

**SYMPOSIUM: MEASURING EMOTIONS IN EDUCATION – POSSIBILITIES AND LIMITS OF NEW APPROACHES****Chair**

Matthias Huber, University College for Teacher Education Carinthia, Austria

**Organiser**

Kerstin Helker, Eindhoven University of Technology, Netherlands

**Discussant**

Julia Morinaj, University of Bern, Switzerland

**The robust implicit beliefs about emotions scale (R-IBES) for primary school students**

Daniela Raccanello, University of Verona, Italy; Giada Vicentini, University of Verona, Italy; Angelica Moè, University of Padova, Italy; Stephanie Lichtenfeld, Universität Hamburg, Germany; Roberto Burro, University of Verona, Italy

**The sense of security and comfort in the classroom – validation of a new questionnaire**

Matthias Huber, University College for Teacher Education Carinthia, Austria; Markus Herrmann, University College of Teacher Education Carinthia, Austria

**The development of a measure to investigate dealing with emotions in teams**

Sebastian Gerbeth, University Regensburg, Germany; Elena Stamouli, University of Regensburg, Faculty of Human Sciences, Germany; Regina Mulder, University of Regensburg, Germany

**Teachers' intrinsic orientation for the profession: Scale development and validation**

Xiangyuan Feng, University of Groningen, Netherlands; Michelle Helms-Lorenz, University of Groningen, Netherlands; Ridwan Maulana, GION - University of Groningen, Netherlands

Session N: 6

Time: 14:45-16:15

Location: UOM\_A02

**SYMPOSIUM: TACKLING POLARIZATION IN EDUCATION: TEACHER PRACTICES, INTERVENTIONS AND PARADIGMS****Chairs**

Geerte Savenije, University of Amsterdam, Netherlands;  
Bjorn Wansink, Utrecht University, Netherlands

**Organiser**

Lee Jerome, Middlesex University, United Kingdom

**Discussant**

Geerte Savenije, University of Amsterdam, Netherlands

**From “Flat” to “Deep” Multiperspectivity: Discussing Controversial Issues in Classrooms**

Bjorn Wansink, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Saro Lozano Parra, Utrecht University, Netherlands

**Avoidance and risk-taking in teaching controversial history: Competing voices**

Judith Pace, University of San Francisco, United States

**The Impact of a Political Simulation Game on Informed Citizenship (and Against Polarization)**

Jeremy Stoddard, University of Wisconsin - Madison, United States

**Education for peace and hope: review of interventions to counter polarization**

Semihä Sözeri, Utrecht University, Netherlands; Maria De Haan, Utrecht University, Netherlands

Session N: 7

Time: 14:45-16:15

Location: AUTH\_DC2

**SYMPOSIUM: IDENTIFYING DIGITAL READING STRATEGIES IN ORDER TO FACILITATE DIGITAL READING****Chair**

Aurora Troncoso-Ruiz, Behavioural Science Institute,  
Radboud University Nijmegen, Netherlands

**Discussant**

Carita Kiili, Tampere University, Finland

**Operationalization and Effectiveness of Reading Strategies in Digital Reading – A research synthesis**

Lisa Ziernwald, Technical University of Munich, Centre for International Student Assessment (ZIB), Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Frank Reinhold, University of Education Freiburg, Germany; Doris Holzberger, Technical University of Munich (TUM) & ZIB (Centre for International Student Assessment), Germany

**The impact of audio support on reading strategies in students with dyslexia**

Eliane Segers, Radboud University, Netherlands; Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands

**Hyperlink structures is crucial for attention and comprehension during hypertext reading**

Bertram Opitz, Brandenburg Medical School, Germany

**Explaining individual differences in digital reading: digital media, attention and print exposure**

Aurora Troncoso-Ruiz, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Naomi van Bergen, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Anouk Bakker, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Liesbeth Craje, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Marco Van de Ven, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Eliane Segers, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

Session N: 8

Time: 14:45-16:15

Location: UOM\_A03

**SYMPOSIUM: CAN EDUCATIONAL APPS SUPPORT EARLY LEARNING? CURRENT EVIDENCE ON APP DESIGN AND EVALUATION****Chair**

Jo Van Herwegen, UCL Institute of Education, United Kingdom

**Discussant**

Laura Outhwaite, University College London, IOE, United Kingdom

**Understanding How Educational Maths Apps Can Enhance Learning: A Content Analysis and QCA**

Laura Outhwaite, University College London, IOE, United Kingdom; Erin Early, QUB, United Kingdom; Christothea Herodotou, Open University, United Kingdom; Jo Van Herwegen, UCL Institute of Education, United Kingdom

**Evaluation of Digital Interventions Fostering Early Reading Skills: A Meta-Analysis**

Fien Depaepe, KU Leuven, Belgium; Stefanie Vanbecelaere, KU Leuven, Belgium; Sameh Said-Metwaly, KU LEUVEN, Belgium; Wim Van den Noortgate, KU LEUVEN, Belgium; Bert Reynvoet, KU LEUVEN, Belgium

**Understanding Early Mathematical Development using Large Scale Educational App Data**

Zahra Siddiqui, UCL, United Kingdom; Laura Outhwaite, University College London, IOE, United Kingdom; Jo Van Herwegen, UCL Institute of Education, United Kingdom

**Evaluating the Effectiveness and Design of an Educational Spelling Application for First Graders**

Cynthia Boggio, Grenoble Alpes University, France; Ahmed Zaher, Université Grenoble Alpes, France; Marie-Line Bosse, Université Grenoble Alpes, France

Session N: 9

Time: 14:45-16:15

Location: UOM\_A10

**SINGLE PAPER: BLENDED AND HYBRID LEARNING****Chair**

Panayioti Metallidou, Aristotle University of Thessaloniki, Greece

**Blended Learning Quality as Crucial Factor for an Effective Flexible Learning Study Program**

Claude Müller, Zurich University of Applied Sciences, Switzerland; Thoralf Mildenerger, Zurich University of Applied Sciences, Switzerland; Daniel Steingruber, std@zhaw.ch, Switzerland

**Students' sidetalk in parallel to co-occurring teaching. Changing participation in hybrid classrooms**

Fritjof Sahlström, University of Helsinki, Finland; Marie Nilsberth, Karlstad University, Sweden

**Reducing motivational costs of STEM students – a blended learning program in higher education**

Lena Sofie Kegel, Educational Psychology, University of Münster, Germany; Derya Turhan, Educational Psychology, University of Münster, Germany; Carola Grunschel, Educational Psychology, University of Münster, Germany

**Hybrid learning as a tool to ensure education: a long-term perspective from German pilot schools**

Can Küplüce, Ruhr-University Bochum, Germany; Denise Demski, Ruhr-University Bochum, Institute of Educational Sciences, Germany; Philipp Matthes, Ruhr-University Bochum, Institute of Educational Sciences, Germany; Grit Im Brahm, Ruhr-University Bochum, Institute of Educational Sciences, Germany; Gabriele Bellenberg, Ruhr-University Bochum, Institute of Educational Sciences, Germany

Session N: 10

Time: 14:45-16:15

Location: AUTH\_TE1

**SINGLE PAPER: TEACHERS AND TEACHING DURING THE COVID-19 PANDEMIC I****Chair**

Elisabeth Mundt, University of Kassel, Germany

**Teachers' online readiness in times of crises: Experience from Norway and US**

Greta Björk Gudmundsdottir, University of Oslo, Faculty of Education. Department of Teacher Education and School Research., Norway; Dawn Hathaway, Georg Mason University, Division of Learning Technologies, School of Education, United States

**Online Faculty Mentoring: Creating a holding environment in times of crisis**

Helga Dörner, Eötvös Loránd University, Hungary; Kinga Kaplar-Kodacsy, Eötvös Loránd University, Hungary

**Teaching Practicum During Pandemic**

Seda Saraç, Bahcesehir University, Türkiye; Betül Tarhan, University of Georgia, United States; Hülya Gülay Ogelman, Sinop University, Türkiye

**New methods; new insights: Making sense of teachers' experiences with online education**

Fazilat Siddiq, University of South-Eastern Norway, Norway; Jo Tondeur, Vrije Universiteit Brussel, Belgium; Sarah Howard, University of Wollongong, Australia; Ronny Scherer, University of Oslo, Norway

Session N: 11

Time: 14:45-16:15

Location: UOM\_A04

**SINGLE PAPER: LEARNING AND TEACHING IN CULTURALLY DIVERSE SETTINGS****Chair**

Doris Kristina Raave, University of Tartu, Estonia

**Linguistic, affective, and educational contributions to bicultural identity in minority adolescents**

Elisavet Chrysochoou, Aristotle University of Thessaloniki, Greece; Aleksandra Laketa, South East European Research Center (SEERC), Greece; Arvesa Studenica, South East European Research Center (SEERC), Greece; Ana B. Vivas, CITY College, University of York Europe Campus, Greece

**Beyond the Binary Classification– Testing a Disparity-Weighted Indicator of Cultural Diversity**

Merle-Sophie Thielmann, University of Mannheim, Germany; Karina Karst, University of Mannheim, Germany; Benedict C. O. F. Fehring, University of Mannheim, Germany

**Conditions for the implementation of intercultural practices in educational settings in Portugal**

Rui Maio, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Sofia Guichard, University of Porto - Faculty of Psychology and Educational Sciences, Portugal; Joana Cadima, University of Porto, Portugal

**Multiply Marginalized and Underrepresented Teachers' Intersecting Identities**

Ji Hong, University of Arizona, United States; Dionne Cross Francis, University of North Carolina at Chapel Hill, United States; Faqryza Ab Latif, University of Arizona, United States; Taylor Roloff, University of Arizona, United States; Kelly Chong, Round Rock Children's Therapy Center, United States; Paul Schultz, University of Arizona, United States



Session N: 12

Time: 14:45-16:15

Location: UOM\_A05

**SINGLE PAPER: CHOOSING THE TEACHING PROFESSION, PREPAREDNESS AND FUTURE VISION****Chair**

Rui WANG, University of Cambridge, China

**Who becomes a teacher and why?**

Elaine Munthe, University of Stavanger, Norway; Beng Huat See, Durham University, School of Education, United Kingdom; Sarah Ross, Durham University, United Kingdom; Loraine Hitt, Durham University, School of Education, United Kingdom; Nada El Soufi, Durham University, School of Education, United Kingdom

**Do student teachers' FIT-Choice motives explain how they study during teacher education?**

Michael Goller, University of Kassel, Germany; Carina Caruso, University of Paderborn, Germany; Heidi Hyytinen, University of Helsinki, Finland; Jani Ursin, University of Jyväskylä, Finland; Katja Vähäsantanen, Häme University of Applied Sciences, Finland

**Investigating the Impact of a Year-Long Internship on Candidates' Perceptions of Preparedness**

Michael Putman, University of North Carolina Charlotte, United States

**Future Vision of Teacher Education Students**

Christian Kraller, Teacher Education and School Research, Austria; Sabrina Bacher, University of Innsbruck, Austria, Austria; Claudia Schreiner, University of Innsbruck, Austria

Session N: 13

Time: 14:45-16:15

Location: AUTH\_DC3

**SINGLE PAPER: SECONDARY EDUCATION STUDENTS' MATHEMATICAL THINKING****Chair**

Alfredo Jornet, Universitat de Girona, Spain

**On noticing and framing of student mathematical thinking**

Thorsten Scheiner, Institute for Learning Sciences and Teacher Education, Australia

**Eliciting and Attending to Students' Mathematical Thinking in Clinical Interviews**

Nicora Placa, Hunter College, City University of New York, United States

**Is the correlation between fraction and algebra knowledge based more on concepts than procedures?**

Claire Forsmann, University of Trier, Germany; Michael D'Erchie, Technical University of Munich, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Michael Schneider, University of Trier, Germany

**The trade-off between complexity and accuracy in computer-based adaptive instruction on fractions**

Timo Leuders, University of Education Freiburg, Germany; Antje Boomgaarden, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany

Session N: 14

Time: 14:45-16:15

Location: UOM\_R05

**SINGLE PAPER: EDUCATION FOR SUSTAINABLE DEVELOPMENT****Chair**

Charleen Brand, Ruhr University Bochum, Institute of Educational Research, Germany

**A Systematic Review on Sustainable Educational Innovations: The Role of (Distributed) Leadership**

Christa Krijgsman, Fontys Hogeschool/Kenniscentrum Youth Education for Society, Netherlands; Marco Snoek, Hogeschool van Amsterdam, Netherlands; Marieke Thurlings, Eindhoven University of Technology, Netherlands

**Sustainability and STEM Education: STEM Teachers' contextualization of sustainable development goals**

Zerrin Doganca Kucuk, Maynooth University, Ireland; Defne Yabas, Bahcesehir University, Turkiye; Gaye Defne Ceyhan, Bogazici University, Turkiye; Mehmet Sencer Corlu, Oslo Metropolitan University, Norway

**Pedagogical Pattern Navigator in Education for Sustainable Development**

Bernadette Dilger, University of St.Gallen, Switzerland

**The Necessity of Utopia for Education for Sustainable Development**

Yves Mühlematter, PHBern, University of Teacher Education; University of Zürich, Switzerland

Session N: 15

Time: 14:45-16:15

Location: UOM\_A11

**SINGLE PAPER: TEACHERS' PROFESSIONAL DEVELOPMENT: RECIPROCAL PEER OBSERVATION AND TEAM TEACHING****Chair**

Georg Krammer, University College of Teacher Education Styria, Austria

**Teachers' closeness of professional relationships and learning in reciprocal peer observation**

Jesús Ribosa, UAB Universitat Autònoma de Barcelona, Spain; Ingrid Noguera, UAB Universitat Autònoma de Barcelona, Spain; Meritxell Monguillot, UB Universitat de Barcelona, Spain; Begoña De la Iglesia Mayol, Universitat de les Illes Balears, Spain

**Impact of Reciprocal Peer Observation on teacher perception of collaboration among teachers**

Ester Miquel, Universitat Autònoma de Barcelona, Spain; Mariona Corcelles, Universitat Ramon Llull, Spain; Ingrid Sala, Universitat Ramon Llull, Spain; Mireia Soler, Universitat Autònoma de Barcelona, Spain; David Duran Gisbert, Universitat Autònoma de Barcelona, Spain

**Professional development: Teachers' reasons for peer selection for classroom observations**

Irene Douwes-van Ark, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Ine Noben, University of Groningen, Netherlands

**The teaching behaviour of beginning team teachers at the beginning of a team teaching intervention**

Dries Mariën, University of Antwerp, Belgium; Elke Struyf, University of Antwerp, Belgium; Ruben Vanderlinde, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium

Session N: 16

Time: 14:45-16:15

Location: UOM\_A06

**SINGLE PAPER: LEARNING ANALYTICS IN SELF-REGULATED LEARNING****Chair**

Margarida Margarida Romero, Université Côte d'Azur, France

**Understanding and supporting writing processes with trace data**

Lyn Lim, Technical University of Munich, Germany; Mladen Raković, Monash University, Australia; Sehrish Iqbal, Monash University, Australia; Tongguang Li, Monash University, Australia; Yizhou Fan, Peking University, China; Shaveen Singh, Monash University, Australia; Surya Surendrannair, Monash University, Australia; Jonathan Kilgour, Edinburgh University, United Kingdom; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Maria Bannert, Technical University of Munich (TUM), Germany; Johanna Moore, Edinburgh University, United Kingdom; Dragan Gasevic, Monash University, Australia

**Evaluating the Effectiveness of Personalized Scaffoldings on SRL using Ordered Network Analysis**

Yizhou Fan, Peking University, China; Tongguang Li, Monash University, Australia; Yuanru Tan, University of Wisconsin-Madison, United States; Mladen Raković, Monash University, Australia; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Lyn Lim, Technical University of Munich, Germany; Shaveen Singh, Monash University, Australia; Johanna Moore, University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Maria Bannert, Technical University of Munich (TUM), Germany; Dragan Gasevic, Monash University, Australia

**Promoting effective use of domain information in simulation-based scientific inquiry learning**

Mari Fukuda, Simon Fraser University, Canada; John Nesbit, Simon Fraser University, Canada; Philip Winne, Simon Fraser University, Canada

**Developmental Differences in Students' Self-Regulated Learning with Game-based Learning Environments**

Saerok Park, University of Central Florida, United States; Daryn Dever, University of Central Florida, United States; Megan Wiedbusch, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

Session N: 17

Time: 14:45-16:15

Location: UOM\_A13

**SINGLE PAPER: TEAM WORK IN DIFFERENT EDUCATIONAL SETTINGS****Chair**

Carlos González, Pontificia Universidad Católica de Chile, Chile

**Physics and Engineering Students' Teamwork: Examining Boundary Processes**

Canan Mesutoglu, Erasmus University Rotterdam, Netherlands; Dury Bayram-Jacobs, Eindhoven University of Technology, Netherlands; Annemieke Vennix, Eindhoven University of Technology, Netherlands; Jan van der Veen, Eindhoven University of Technology, Netherlands

**Using interaction dynamics to study intra- and inter-team processes of team learning**

Lida Zoi David, University of Twente, Netherlands; Marcella Hoogetboom, University of Twente, Netherlands; Maaïke Endendijk, University of Twente, Netherlands; Jan Maarten Schraagen, Netherlands Organisation for Applied Scientific Research (TNO), Netherlands

**From decoration to documentantion: a collaborative action research at a Greek kindergarten.**

Alexandra Gkloumpou, Aristotle University of Thessaloniki, Greece; DOMNA KAKANA, Aristotle University of Thessaloniki, Greece

**The Importance of a Homogeneous Problem Perception for Successful Problem Regulation in CSCL**

Laura Spang, University of Augsburg, Germany; Martin Greisel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

Session N: 18

Time: 14:45-16:15

Location: AUTH\_DC1

**SINGLE PAPER: CLASSROOM MANAGEMENT****Chair**

Emely Hoch, Leibniz-Institut für Wissensmedien, Germany

**Teachers' classroom management competences at their entry into the teaching profession**

Lena Hollenstein, University of Teacher Education St.Gallen, Switzerland; Christian Bruehwiler, University of Teacher Education St.Gallen, Switzerland; MANUELA HALDIMANN, University of Teacher Education St.Gallen, Switzerland; Doreen Holtsch, University of Teacher Education St.Gallen, Switzerland

**Preservice Teachers' Lesson Planning Competence and Teaching Quality Regarding Classroom Management**

Madeleine Müller, University Erfurt, Germany; Isabell Tucholka, TU Dortmund University, Germany

**Professional Vision in the Classroom: Teachers' Knowledge-Based Reasoning and Visual Attention**

Heli Muhonen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Under Which Conditions Do Teachers Label Students as Having Behavior Problems?**

Boris Eckstein, University of Teacher Education Zurich, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Kurt Reusser, University of Zurich, Switzerland; Alexander Wettstein, PHBern / University of Bern, Switzerland

**How Language Shapes Our Views: A Study of Work with Language Awareness in a Year 7 Class**

Ingvill Rasmussen, University of Oslo, Norway; Kari Anne Rødnes, University of Oslo, Norway

Session N: 19

Time: 14:45-16:15

Location: AUTH\_TE2

**SINGLE PAPER: FEEDBACK IN HIGHER EDUCATION: PREDICTORS AND OUTCOMES****Chair**

Olga Chernikova, Ludwig Maximilian University, Germany

**Do achievement goals and self-efficacy matter for students' perception and use of feedback?**

Melanie V. Keller, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany

**The Effects of Free-Selection Peer Feedback Activities on Self-Efficacy of University Students**

Natasha Dmoshinskaia, University of Twente, Netherlands; Hannie Gijlers, University of Twente, Netherlands; Pantelis M. Papadopoulos, University of Twente, Netherlands; Aliëke M. van Dijk, University of Twente, Netherlands

**Unpacking Emotional and cognitive responses to feedback in teams**

Catherine Gabelica, IESEG School of Management, France; Vitaliy Popov, University of Michigan, United States

**What changed my mind – Impact of feedback in online-self-assessments for study choice orientation**

Belinda Merkle, University of Mannheim, Germany; Hanna Buerkle, University of Mannheim, Germany; Karina Karst, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany

Session N: 20

Time: 14:45-16:15

Location: AUTH\_T202

**SINGLE PAPER: EDUCATIONAL TECHNOLOGIES IN VOCATIONAL EDUCATION****Chair**

Stephan Vogel, University of Graz, Austria

**Technology use in vocational education: Teachers' competence and beliefs, and school-related factors**

Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland; Chiara Antonietti, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland

**Stress-related psycho-physiological activation in emergency simulations using a 360° Video**

Rita Cosoli, The Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland; Francesca Amenduni, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland; Vito Candido, SFUVET, Switzerland; Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland

**Fostering Virtual Teamwork – Shedding Light on Apprentices in VET using PLS-SEM**

Frank Hiller, LMU Munich School of Management, Germany; Stefanie Zarnow, LMU Munich, Germany

**S-EBPQ tool validation to measure EBP behaviours in nursing students during clinical internships**

Anja Garone, University College Leuven Limburg, Belgium; Carla Quesada-Pallarès, Universitat Autònoma de Barcelona, Spain; Marlies Baeten, University College Leuven Limburg, Belgium

Session N: 21

Time: 14:45-16:15

Location: UOM\_R08

**SINGLE PAPER: SCHOOL LEADERSHIP****Chair**

Leena Paakkari, University of Jyväskylä, Faculty of Sport and Health Sciences, Finland

**Key factors of effective professionalisation programmes for school leaders**

Els Tanghe, University of Antwerp, Belgium; Wouter Schelfhout, University of Antwerp, Belgium

**Leading the School Change: Leadership Patterns and Implementation of Best Pedagogical Practices**

Irit Sasson, Tel-Hai College, Israel; Yael Grinshtain, Tel-Hai Academic College, Israel; Tamir Ayali, Tel-Hai Academic College, Israel; Itamar Yehuda, Tel Hai Academic College, Israel

**Teachers' and principals' use of results from nationwide achievement tests: A mediation analysis**

Patrick Hawlitschek, Institute for Educational Quality Improvement (IQB), Germany; Sofie Henschel, Institute for Educational Quality Improvement (IQB), Germany; Dirk Richter, University of Potsdam, Germany; Petra Stanat, Institute for Educational Quality Improvement (IQB), Germany

**Emotional intelligence as game changer in school leadership: Notes from the Covid-19 pandemic.**

Stella Jackman-Ryan, North Carolina State University, United States; Lisa Bass, North Carolina State University, United States; Mario Jackson, North Carolina State University, United States

Session N: 22

Time: 14:45-16:15

Location: UOM\_A07

**SINGLE PAPER: PRE-SERVICE TEACHERS' MOTIVATIONAL BELIEFS****Chair**

Charles Selorm Dzormeku, University of Turku, Finland

**Brilliance Beliefs of German Pre-Service Teachers: A longitudinal analysis**

Katharina Asbury, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Bastian Carstensen, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Uta Dr. Klusmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Finnish pre-service science and primary teachers' motivations and perceptions of teaching**

Antti Lehtinen, University of Jyväskylä, Finland; Tomi Jaakkola, Tampere University, Finland; Koen Veermans, University of Turku, Finland

**Basic Needs Satisfaction During a Teaching Practicum: An Intraindividual Perspective**

Mathias Dehne, Friedrich Schiller University Jena, Germany; Miriam Jähne, Friedrich-Schiller-University Jena, Germany; Susi Klaß, Friedrich Schiller University Jena, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany

**Predicting student's basic needs through motivational appeals: Outcomes on grit and well-being**

Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Juan L. Núñez, University of Las Palmas de Gran Canaria - Faculty of Educational Sciences, Spain; Jaime León, Universidad de Las Palmas de Gran Canaria, Spain

Session N: 23

Time: 14:45-16:15

Location: AUTH\_T102

**SINGLE PAPER: READING AND WRITING IN A FOREIGN LANGUAGE****Chair**

Jean-Francois Rouet, University of Poitiers, France

**The relationship between reading, spelling, writing fluency, and text quality**

Eva Lindgren, Umeå University, Sweden; Christian Waldmann, Linnaeus University, Sweden; Maria Levlin, Umeå University, Sweden

**How can feedback improve L1, L2, and FL learners' writing? A systematic review**

Sina Scherer, Westfälische Wilhelms-Universität Münster, Germany; Steve Graham, Arizona State University, United States; Vera Busse, Westfälische Wilhelms-Universität Münster, Germany

**EFL/ESL Teachers' and Students' Perceptions and Practices of Written Feedback: A Systematic Review**

Abderrahim Mamad, University of Szeged, Doctoral School of Education, Hungary; Tibor Vigh, University of Szeged, Hungary

**Investigating the Effects of Linguistic Distance on German and English Reading and Mathematics**

Daria Ferencik-Lehmkuhl, University of Cologne, Germany; Nils Jaekel, University of Oulu, Finland; Michael Schurig, Technical University Dortmund, Germany; Sandra Schwinning, University of Wuppertal, Germany

**Non-native pupil motivation in spoken English: learning English with an embodied phonology method**

NATHALIE HUET, University of Toulouse 2, France; Marie-Hélène Hana Younan, University of Toulouse, France; Julie Rouaud, University of Paris-Sorbonne Nouvelle, PRISMES-SeSyliA, France; Victoria O'Callaghan, University of Toulouse 2, CLLE-UMR 5263 CNRS, France; Anne Przewozny, University of Toulouse 2, CLLE UMR 5263 CNRS, France

Session N: 24

Time: 14:45-16:15

Location: UOM\_R02

## POSTER PRESENTATION: WRITING AND LITERACY DEVELOPMENT

## Chair

Jarkko Hautala, Niilo Mäki Institute, Finland

**The Contributions of Executive Functioning to Handwritten and Keyboarded Compositions in Year 2**

Deborah Pino-Pasternak, University of Canberra, Australia; Debora Valcan, Murdoch University, Australia; Anabela Malpique, Edith Cowan University, Australia; Timothy Teo, The Chinese University of Hong Kong, Hong Kong; Mustafa Asil, University of Otago, New Zealand

**Identifying Negative Language Transfer in the English Writing of Chinese and Farsi Native Speakers**

Maria Cutumisu, University of Alberta, Canada; Mohammad Karimiabdolmaleki, University of Alberta, Canada; Leticia Farias Wanderley, University of Alberta, Canada; Carrie Demmans Epp, University of Alberta, Canada

**Modelling writing competence**

Rebecca Kreuz, Universität zu Köln/ University of Cologne, Germany; Julie Philippek, Universität zu Köln/ University of Cologne, Germany; Ann-Kathrin Hennes, University of Cologne, Germany; Barbara Schmidt, University of Cologne, Germany; Alfred Schabmann, University of Cologne, Germany

**Benefits of Image Interpretation Models on Adolescents' Historical Reasoning**

Kevin van Loon, University of Applied Sciences Northwestern Switzerland FHNW School of Education, Switzerland; Monika Waldis, University of Applied Sciences Northwestern Switzerland, Switzerland

**The promotion of writing strategies and the evaluation of the implementation process**

Seda Yilmaz Würfel, TU Chemnitz, Germany; Simone Jambor-Fahlen, University of Cologne, Mercator Institute for Literacy and Language Education, Germany; Nora Fröhlich, Institute for Educational Analysis (IBBW), Germany; Benjamin Fauth, Institute for Educational Analysis (IBBW), Germany; Alexandra Dehmel, Institute for Educational Analysis (IBBW), Germany; Michael Becker-Mrotzek, University of Cologne, Mercator Institute for Literacy and Language Education, Germany

**Writing-to-learn: Effects of writing compared to speaking on memory for text.**

David Galbraith, University of Southampton, United Kingdom; Amy Peters, University of Southampton, United Kingdom; Roberto Limongi, University of Western Ontario, Canada

Session N: 25

Time: 14:45-16:15

Location: UOM\_R03

## POSTER PRESENTATION: (SELF-)ASSESSMENT METHODS

## Chair

Ioannis Dimakos, University of Patras, Greece

**Standardization of Metacognition in Creative Problem-Solving (MCPS) Scale**

Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Marek Urban, Institute of Psychology of Czech Academy of Sciences, Czech Republic

**Teaching Analysis Poll (TAP) in SQUARE: Insights into a Joint Practice and Research Project**

Stefan T. Siegel, University of St.Gallen, Switzerland

**Talking Transactivity: Various Perspectives and a Possible Direction for Automated Analysis**

David Otten, University of Twente, Netherlands; Pantelis Papadopoulos, University of Twente, Netherlands; Maaïke Endendijk, University of Twente, Netherlands

**Using students' interaction with self-assessments during the semester for predicting course success**

Clara Schumacher, Humboldt Universität zu Berlin, Germany; Dirk Ifenthaler, University of Mannheim, Germany; Jakub Kuzilek, Humboldt Universität zu Berlin, Germany

**Analysis of Creativity in Collaborative Writing Texts Using the T-CREANT Assessment Tool**

Noemí Font-Piqué, University of Lleida, Spain; Manoli Pifarré Turmo, University of Lleida, Spain

Session N: 26

Time: 14:45-16:15

Location: UOM\_R01

**POSTER PRESENTATION: DIGITAL LITERACY, TEACHING AND TEACHER EDUCATION AND PROFESSIONAL DEVELOPMENT****Chair**

Päivi Hökkä, University of Tampere, Finland

**Digital team collaboration in kindergartens: An investigation using the Will-Skill-Tool Model**  
Sebastian Then, University of Bamberg, Germany; Matthias Borgstede, Otto-Friedrich-University of Bamberg, Germany; Yvonne Anders, Otto-Friedrich-University of Bamberg, Germany

**Exploring the intentions and digital competence of pre-service primary school teachers in Ireland**  
Denis Moynihan, Dublin City University, Ireland

**Teachers' digital competence - a broad set of comprehensive attitudes, skills, and knowledge**  
Susanna Pöntinen, University of Eastern Finland, Finland; Sini Kontkanen, University of Eastern Finland, Finland; Sinikka Rätty-Záborszky, University of Eastern Finland, Finland; Mira Kummunmäki, University of Eastern Finland, Finland

**Effects of an ICT course on pre-service teachers' self-efficacy: A quasi-experimental study**  
Sonja Hahn, Darmstadt University of Applied Sciences, Germany; Samuel Merk, PH Karlsruhe, Germany; Olga Kunina-Habenicht, Technical University of Dortmund, Germany

**The effectiveness of long-term in-service training on teachers' professional development**  
Sini Kontkanen, University of Eastern Finland, Finland; Susanna Pöntinen, University of Eastern Finland, Finland; Satu Piispa-Hakala, University of Eastern Finland, Finland

**What do we do when we simulate? - a design-based research study**  
Sonja Bleymehl, Pädagogische Hochschule Ludwigsburg, Germany; Christine Bescherer, Pädagogische Hochschule Ludwigsburg, Germany

Session N: 27

Time: 14:45-16:15

Location: UOM\_GYM

**ROUNDTABLE: FEEDBACK AND ASSESSMENT****Chair**

Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

**The effects of standardized and individualized feedback on self-efficacy and anxiety in writing**  
Katrin Peltzer, Westfälische Wilhelms-Universität Münster (Münster University), Germany; Alina Lira Lorca, Department of Educational Sciences, Oldenburg University, Germany; Ulrike-Marie Krause, University of Oldenburg, Germany; Vera Busse, Westfälische Wilhelms-Universität Münster, Germany

**A valid and reliable assessment tool of competencies in higher education**  
Kris Janssens, Hasselt University, Belgium; Annelies Vanheel, Hasselt University, Belgium; Bert Brône, Hasselt University, Belgium

**The influence of item design on test performance**  
Tamara Schleepen, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands

**Automated Feedback and Learning Design for Collaborative Problem Solving in Simulation Scenarios**  
Daniel Sanchez, University of Oslo, Norway; Rachelle Esterhazy, University of Oslo, Norway; Crina Damsa, University of Oslo, Norway

Session N: 28

Time: 14:45-16:15

Location: UOM\_R09

**ICT DEMONSTRATION: A DEMONSTRATION AND TUTORIAL OF OPEN CREATIVITY SCORING: FREWARE FOR EDUCATIONAL RESEARCHERS**

**A Demonstration and Tutorial of Open Creativity Scoring: Freeware for Educational Researchers**  
Denis Dumas, University of Georgia, United States; Peter Organisciak, University of Denver, United States; Selcuk Acar, University of North Texas, United States

Session O: 1

Time: 17:00-18:30

Location: HELEXPO\_CC

**INVITED SYMPOSIUM: INTENSIVE LONGITUDINAL METHODS – THE WAY FORWARD IN RESEARCHING PROFESSIONAL LEARNING****Chair**

Michael Goller, University of Kassel, Germany

**Organisers**

Michael Goller, University of Kassel, Germany; Maaïke Endedijk, University of Twente, Netherlands; Andreas Rausch, University of Mannheim, Germany

**Discussant**

Littlejohn Allison, University College London, United Kingdom

**Time for change: The promises of intensive longitudinal methods for the field of workplace learning**

Maaïke Endedijk, University of Twente, Netherlands

**Autonomy, emotions, arousal and development of competence in daily work situations**

Petri Nokelainen, Tampere University, Finland; Ilmari Puhakka, Tampere University, Finland; Eija Lehtonen, Tampere University, Finland

**Two microgenetic studies on teacher learning: Investigating learning in process**

Alba Vallés, University of Lleida, Spain; Marc Clarà, University of Lleida, Spain

**Replicating and extending a diary study on emotions, coping and learning in error situations at work**

Andreas Rausch, University of Mannheim, Germany

ANNOTATIONS:  
SIG 14 INVITED SYMPOSIUM

Session O: 2

Time: 17:00-18:30

Location: UOM\_CH

**INVITED SYMPOSIUM: FUNDAMENTAL ACADEMIC LEARNING IN STUDENTS WITH VARIOUS EDUCATIONAL NEEDS - LONGITUDINAL EVIDENCE****Chair**

Pirjo Aunio, University of Helsinki, Finland

**Organiser**

Pirjo Aunio, University of Helsinki, Finland

**Discussant**

Kerry Lee, The Education University of Hong Kong, Hong Kong

**The Cognitive Profile of Preschoolers at Risk for Dyslexia and ADHD**

Silke Kellens, Katholieke Universiteit Leuven, Belgium; Dieter Baeyens, KU Leuven, Belgium; Pol Ghesquière, KU Leuven, Belgium

**Linguistic Precursors of Advanced Math Growth in Children with and without DLD**

Eliane Segers, Radboud University, Netherlands; Constance Vissers, Radboud University, Netherlands; Tijs Kleemans, Radboud University, Netherlands

**Developmental trajectories of math anxiety and performance in lower secondary education**

Johan Korhonen, Åbo Akademi University, Finland; Anna Widlund, Åbo Akademi University, Finland; Pekka Räsänen, University of Turku, Finland

**Mathematical Abilities in Williams syndrome: Longitudinal findings from the WisDom Database**

Jo Van Herwegen, UCL Institute of Education, United Kingdom; Stella Xu, UCL- Institute of Education, United Kingdom; Harry Purser, The Nottingham Trent University, United Kingdom; Michael Thomas, Birkbeck College, University of London, United Kingdom

ANNOTATIONS:  
SIG 15 INVITED SYMPOSIUM

Session O: 3

Time: 17:00-18:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: SOCIAL SUSTAINABILITY EFFORTS AND LEARNING EXPERIENCES IN DIVERSE AND MULTICULTURAL PRACTICES****Chairs**

Gudrun Ziegler, Ministère de l'éducation nationale / Luxembourg multi-LEARN Institute, Luxembourg; Andreas Gegenfurtner, University of Augsburg, Germany

**Organiser**

Maria Bäcke, University of Jönköping, School of Education and Communication, Sweden

**Discussant**

Sikunder Ali, Norwegian University of Science and Technology (NTNU), Norway

**Individualising Swedish for Immigrants: Tensions and innovations in teachers' professional practice**

Dimitrios Papadopoulos, University of Gothenburg, Sweden

**Transmedia Educommunication Method for Social Sustainability**

Maria Bäcke, University of Jönköping, School of Education and Communication, Sweden; Renira Gambarato, Jönköping University, Sweden; Lorena Tárca, Centro Universitário de Belo Horizonte, Brazil; Geane Alzamora, Universidade Federal de Minas Gerais, Brazil; Leo Cunha, Puc-MG, Brazil

**Invisible and unrecognised global citizenship and diversity among students at upper secondary level**

Maria Bäcke, University of Jönköping, School of Education and Communication, Sweden; Sylvi Vigmo, University of Gothenburg, Sweden

**Reading for pleasure and reading for school – Student agency vs normative curricula**

Sylvi Vigmo, University of Gothenburg, Sweden; Maria Bäcke, University of Jönköping, School of Education and Communication, Sweden

ANNOTATIONS:  
SIG 21 INVITED SYMPOSIUM

Session O: 4

Time: 17:00-18:30

Location: AUTH\_DC3

**SYMPOSIUM: UNDERSTANDING TEACHING QUALITY IN THE NORDIC CONTEXT USING A SHARED OBSERVATION SYSTEM****Chair**

Kirsti Klette, University of Oslo, Norway

**Organiser**

Mark White, University of Oslo, Norway

**Discussant**

Pamela Grossman, University of Pennsylvania, United States

**Observation manuals as lenses into classroom teaching – towards a common language of instruction?**

Kirsti Klette, University of Oslo, Norway; Astrid Roe, University of Oslo, Faculty of Education, Norway; Marte Blikstad-Balas, University of Oslo, Norway; Mark White, University of Oslo, Norway; Michael Tengberg, Karlstad University, Sweden

**Stated Purpose and Feedback practices in Icelandic classrooms: Results from a video study**

Berglind Gísladóttir, University of Iceland School of Education, Iceland; Birna María Svanbjörnsdóttir, University of Akureyri, Iceland; Sólveig Zophoníasdóttir, University of Akureyri, Iceland

**Features of language arts classrooms with high-level classroom discourse across Nordic contexts**

Camilla Magnusson, University of Oslo, Norway; Kirsti Klette, University of Oslo, Norway; Jennifer Luoto, University of Oslo, Norway; Marte Blikstad-Balas, University of Oslo, Norway

**Characteristics of cognitively activating Nordic mathematics classrooms**

Jóhann Örn Sigurjónsson, University of Akureyri, Iceland; Alexander Selling, ILS, University of Oslo, Norway

Session O: 5

Time: 17:00-18:30

Location: AUTH\_DC2

**SYMPOSIUM: (INTELLIGENT) TUTORING SYSTEMS AND THEIR AFFORDANCES AS A RESEARCH TOOL FROM MULTIPLE PERSPECTIVES****Chairs**

Cora Parrisius, University of Education Karlsruhe, Germany; Hannah Deininger, University of Tübingen, Germany

**Discussant**

Vincent Alevan, Carnegie Mellon University, United States

**Analyzing Behavioral Trace Data with Machine Learning and Explainable AI to Predict Learning Success**

Hannah Deininger, University of Tübingen, Germany; Cora Parrisius, University of Education Karlsruhe, Germany; Leona Colling, University of Tübingen, Germany; Ines Pieronczyk, University of Tübingen, Germany; Detmar Meurers, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany; Gjergji Kasneci, University of Tübingen, Germany

**Effective Features of Feedback in an Intelligent Tutoring System: A Randomized Controlled Trial**

Cora Parrisius, University of Education Karlsruhe, Germany; Katharina Wendebourg, University of Tübingen, Germany; Sven Rieger, University of Tübingen, Germany; Ines Loll, University of Trier, Germany; Diana Pili-Moss, Leuphana University Lüneburg, Germany; Leona Colling, University of Tübingen, Germany; Carolyn Blume, TU Dortmund University, Germany; Ines Pieronczyk, University of Tübingen, Germany; Heiko Holz, Novatec Consulting GmbH, Germany; Stephen Bodnar, University of Tübingen, Germany; Torben Schmidt, Leuphana University Lüneburg, Germany; Ulrich Trautwein, University of Tübingen, Germany; Detmar Meurers, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany

**The Effect of Career-Personalized Mathematics Instruction on Students' Learning and Interests**

Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Candace Walkington, Southern Methodist University, United States; Vanessa Vongkulluksn, University of Nevada, Las Vegas, United States; Meghan J. Greene, University of North Carolina at Chapel Hill, United States; Taylor Darwin, Texas Tech University, United States; Brooke Iestas, Southern Methodist University, United States; Elizabeth Leyva, Texas A&amp;M University - San Antonio, United States

**Adaptive Learning Technologies and Dashboards as an Instrumentation Tool to Study Teachers**

Inge Molenaar, Radboud University Nijmegen, Netherlands; Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands

Session O: 6

Time: 17:00-18:30

Location: UOM\_A02

**SYMPOSIUM: TEACHER-STUDENT RELATIONSHIPS IN EDUCATION—WHAT WE KNOW AND WHAT WE DON'T (YET) KNOW****Chair**

Valentin Emslander, University of Luxembourg, Luxembourg

**Discussant**

Hinke Endedijk, Leiden University, Netherlands

**CANCELLED: A Systematic Review of Studies Examining School Climate and Student Outcomes**

Nani Teig, University of Oslo, Norway; Trude Nilsen, University of Oslo, Norway

**Reviewing Meta-Analyses on the Link Between Teacher-Student Relationships and Student Outcomes**

Valentin Emslander, University of Luxembourg, Luxembourg; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg; Ronny Scherer, University of Oslo, Norway

**Student-Teacher Relationship Trajectories and Secondary Students' School Engagement**

Debora Roorda, University of Amsterdam, Netherlands; Rianne Bosman, University of Amsterdam, Netherlands

**Teacher Support and Student Participation: Generalizability across Students and Subjects**

Simon Munk, Technical University of Munich, Germany; Ricardo Böheim, Technical University of Munich, Germany; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany



Session O: 7

Time: 17:00-18:30

Location: UOM\_A03

**SYMPOSIUM: CHILDREN'S SPATIAL SKILLS: RELATIONS TO COGNITIVE DEVELOPMENT AND EDUCATIONAL IMPLICATIONS****Chair**

Anke Maria Weber, University of Luxembourg, Luxembourg

**Organiser**

Anke Maria Weber, University of Luxembourg, Luxembourg

**Discussant**

Samuel Greiff, University of Luxembourg, Luxembourg

**The use of search strategy improves with age and visuospatial working memory in 2- to 4-year-olds**

Katarzyna Bobrowicz, University of Luxembourg, FLSHASE, Luxembourg; Anke Maria Weber, University of Luxembourg, Luxembourg; Samuel Greiff, University of Luxembourg, Luxembourg

**Young children's mental rotation and the relation with fluid intelligence, block play, and gender**

Anke Maria Weber, University of Luxembourg, Luxembourg; Katarzyna Bobrowicz, University of Luxembourg, FLSHASE, Luxembourg; Miriam Leuchter, RPTU Landau, Germany; Samuel Greiff, University of Luxembourg, Luxembourg

**Mental rotation and mathematics: A closer look at relations in primary school children**

Wenke Möhring, University of Basel, Switzerland; Léonie Moll, University of Basel, Switzerland; Marta Szewczyk, The John Paul II Catholic University of Lublin, Poland; Madga Szubielska, The John Paul II Catholic University of Lublin, Poland

**Domain-general and domain-specific competencies in children's spatial problem-solving**

Jonas Schäfer, University Kaiserslautern-Landau (RPTU), Germany; Timo Reuter, Rheinland-Pfälzische Technische Universität Kaiserslautern - Landau, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Miriam Leuchter, RPTU Landau, Germany

Session O: 8

Time: 17:00-18:30

Location: AUTH\_T002

**SYMPOSIUM: ADVANCING SELF-REGULATED LEARNING RESEARCH WITH AI: IMPLICATIONS FROM MULTIMODAL TRACE STUDIES****Chair**

Roger Azevedo, University of Central Florida, United States

**Organiser**

Maria Bannert, Technical University of Munich (TUM), Germany

**Discussant**

Jeff Greene, university of north carolina at chapel hill, United States

**Emotional Synchrony through Regulatory Triggers in Collaborative Learning**

Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Yante Li, University of Oulu, Finland; Yang Liu, University of Oulu, Finland; Eija Vuorenmaa, University of Oulu, Finland, Finland; Ahsen Çini, University of Oulu, Finland; Guoying Zhao, University of Oulu, Finland

**Measuring and understanding self-regulated learning with digital trace data**

Joni Lämsä, University of Oulu, Finland; Susanne de Mooij, Radboud University, Netherlands; Olli Aksela, University of Oulu, Finland; Inti Bistolfi, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University, Netherlands; Sanna Järvelä, University of Oulu, Finland

**Investigating How Real-Time Personalized Scaffolds Influence Self-Regulated Learning Processes**

Lyn Lim, Technical University of Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany; Joep van der Graaf, Radboud University, Netherlands; Yizhou Fan, Peking University, China; Mladen Raković, Monash University, Australia; Shaveen Singh, Monash University, Australia; Inge Molenaar, Radboud University, Netherlands; Johanna Moore, University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia

**Using Multimodal Data to Examine Self-regulated Learning Sequences during Game-based Learning**

Daryn Dever, University of Central Florida, United States; Nathan Sonnenfeld, University of Central Florida, United States; Megan Wiedbusch, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

Session O: 9

Time: 17:00-18:30

Location: UOM\_R05

**SINGLE PAPER: MATHEMATICS: FRACTIONS KNOWLEDGE****Chair**

Emmanuel Manalo, Kyoto University, Japan

**Examining the relation between algebra and different aspects of fraction knowledge**

Jo Van Hoof, University of Turku, Finland; Jake McMullen, University of Turku, Finland

**Cognitive activation within a dynamic learning environment and developing a basic fraction concept**

Rowena Merkel, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Frank Reinhold, University of Education Freiburg, Germany

**Adaptive teaching with fractions: a mixed method study**

Sara Becker, Freiburg University of Education, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Anika Dreher, Freiburg University of Education, Germany

Session O: 10

Time: 17:00-18:30

Location: UOM\_A07

**SINGLE PAPER: VIDEO-BASED LEARNING ACTIVITIES FOR TEACHERS****Chair**

Panagiotis Varsamis, University of Macedonia, Greece

**Effects of multiple video-based coachings on teachers' facilitation of dialogic classroom discourse**

Matthias Zimmermann, University of Teacher Education St.Gallen, Switzerland; Miriam Moser, University of Fribourg, Switzerland; Kurt Reusser, University of Zurich, Switzerland; Christine Pauli, University of Fribourg, Switzerland

**The Power of Framing: Support Teachers to Shift to Dialogic Discourse via Mixed-Reality Simulation**

Rupert Wegerif, University of Cambridge, United Kingdom; Lydia Cao, Harvard University, United States; Sara Hennessy, University of Cambridge, United Kingdom

**Video-based Evaluations of Cognitive Activation: An Explorative Study in Science Teacher Education**

Benjamin Heinitz, Leibniz University Hannover, Germany; Andreas Nehring, Gottfried Wilhelm Leibniz Universität Hannover, Germany

**The role of cooperative activities for differentiated instruction**

Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Alexandra Taras, University of Teacher Education St.Gallen, Switzerland

Session O: 11

Time: 17:00-18:30

Location: UOM\_A13

**SINGLE PAPER: ARGUMENTATION AND REASONING****Chair**

Monika Nerland, University of Oslo, Norway

**Students' use of connectives in argumentative writing – Which aspects of family background matter?**

Elisabeth Mundt, University of Kassel, Germany; Madeleine Domenech, University of Kassel, Germany

**Measuring students' argumentation skills: validation of a test instrument**

Yvonne Berkle, University of Koblenz - Landau, Germany; Andreas Janson, University of Kassel, Germany; Thiemo Wambsganß, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Denise Löfflad, University of Kassel, Germany; Jan Marco Leimeister, University of Kassel, Germany; Miriam Leuchter, RPTU Landau, Germany

**Noticing Confirmation Bias and Emphasizing Scientific Reasoning During Modeling**

Amanda Cottone, University of Pennsylvania, United States; Susan Yoon, University of Pennsylvania, United States; Clark Chinn, Rutgers University, United States; Noora Noushad, University of Pennsylvania, United States; Huma Hussain-Abidi, Rutgers University Graduate School of Education, United States; Thomas Richman, University of Pennsylvania, United States

**The Multiplicity, Adaptability, and Orientation of Teachers' Noticing of Proof-related Reasoning**

Mei Yang, University of Cambridge, China

Session O: 12

Time: 17:00-18:30

Location: AUTH\_TE2

**SINGLE PAPER: TEACHERS' DIGITAL LITERACY AND LEARNING****Chair**

Ilona Friso-van den Bos, University of Twente, Netherlands

**Didactical Design Dice - a meta-knowledge framework for (re)designing technology-mediated education**

Sylvana Sofkova Hashemi, University of Gothenburg, Sweden; Maria Spante, School of Business, Economics and IT Division of Informatics, Sweden

**Digital multimodal teaching and assessment: developing teachers' knowledge and competence**

Petra Magnusson, Kristianstad University, Sweden; Sylvana Sofkova Hashemi, University of Gothenburg, Sweden

**Remote digital assessment – variations in teachers' experiences**

Ida Naimi-Akbar, KTH Royal Institute of Technology, Sweden

**The discrepancy in the technology integration: teachers seek short-term, students long-term goals**

Doris Kristina Raave, University of Tartu, Estonia; Eric Roldan Roa, Center for Scalable Data Analytics and Artificial Intelligence, Germany; Margus Pedaste, University of Tartu, Estonia; Katrin Saks, University of Tartu, Estonia

Session O: 13

Time: 17:00-18:30

Location: UOM\_R08

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT****Chair**

Ana Paula S. Loures-Elias, Interdependent Researcher, Portugal

**Teachers' profiles of content knowledge, motivational and emotional orientations in statistics**

Sarah Huber, Technical University of Munich, Germany; Frank Reinhold, University of Education Freiburg, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Kristina Reiss, Technische Universität München (TUM), Germany

**Efficacy of induction elements on the development of beginning teachers' qualities**

Xiangyuan Feng, University of Groningen, Netherlands; Michelle Helms-Lorenz, University of Groningen, Netherlands; Ridwan Maulana, GION - University of Groningen, Netherlands

**Teachers' awareness of the generalising potential of school assignments**

Birgit Vogt, University of Koblenz, Germany; Markus Linnemann, University of Koblenz, Germany

**A positive impact of a PBL-based online course: A multidimensional model of identity construction**

Yulia Muchnik-Rozanov, Technion - Israel Institute of Technology, Achva Academic College, Israel; Dina Tsybulsky, Technion - Israel Institute of Technology, Israel

Session O: 14

Time: 17:00-18:30

Location: AUTH\_T202

**SINGLE PAPER: READING: COGNITIVE PROCESSES AND SKILLS****Chair**

Marielle Wittelings, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**Reading from Paper, Computers, and Tablets in First Grade: The Role of Comprehension Monitoring**

Elena Florit, University of Verona, Italy; Pietro De Carli, University of Milano-Bicocca, Italy; Kate Cain, Lancaster University, United Kingdom; Lucia Mason, University of Padova, Italy

**Reciprocal relations between morphological awareness and literacy among Greek Cypriot children**

Evdokia Pittas, University of Nicosia, Cyprus; Terezinha Nunes, University of Oxford, United Kingdom

**The role of task models and goal management in 6th graders' online reading strategies.**

Jean-Francois Rouet, University of Poitiers, France; Yann Dyoniziak, CeRCA UMR7295 Université de Poitiers, France; Mónica Macedo-Rouet, CY Cergy Paris Université, France; Émilie Dujardin, Université de Poitiers, France; Anna Potocki, Université Grenoble Alpes, France

**Compensation in children with (a risk of) reading difficulties: A scoping review**

Sanne Appels, University Utrecht, Netherlands; Sietske van Viersen, Utrecht University, Netherlands; Lisette Hornstra, Utrecht University, Netherlands; Sara van Erp, Utrecht University, Netherlands; Elise de Bree, Utrecht University, Netherlands

Session O: 15

Time: 17:00-18:30

Location: AUTH\_DC1

**SINGLE PAPER: TEACHERS' JOB SATISFACTION AND WELL-BEING****Chair**

Nienke Smit, Utrecht University, Netherlands

**Satisfied and High Performing? A Meta-Analysis on the Correlates of Teachers' Job Satisfaction**

Gyde Wartenberg, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karen Aldrup, IPN - Leibniz Institute for Science and Mathematics Education, Kiel, Germany; Simon Grund, University of Hamburg, Germany; Uta Klusmann, IPN - Leibniz Institute for Science and Mathematics Education, Kiel, Germany

**Teachers' Occupational Well-Being in Relation to Teacher-Student Interactions**

Sze Wah Chan, University of Jyväskylä, Finland; Sanni Pöysä, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland

**Investigating the interplay of teachers' emotions, subjective well-being, and daily work situations**

Tanja Bross, Augsburg University, Germany; Ulrike Nett, Augsburg University, Germany

**The impact of working time in the teaching profession: A systematic literature review**

Carmela Aprea, University of Mannheim, Germany

Session O: 16

Time: 17:00-18:30

Location: AUTH\_TE1

**SINGLE PAPER: SELF-REGULATED LEARNING AND BEHAVIOUR****Chair**

Sabrina Gerth, University College of Teacher Education Tyrol, Austria

**Student engagement and self-regulation in adolescence: A within-person reciprocal relation**

Kristján Ketill Stefánsson, University of Iceland, Iceland; Steinunn Gestsdóttir, University of Iceland, Iceland; Freyja Birgisdóttir, University of Iceland, Iceland

**“Don't Chat in Class!": Self-regulated School Engagement Profiles and Academic Achievement**

Ioannis Katsantonis, University of Cambridge, United Kingdom

**The Effect of Generalised and Personalised Scaffolds on Self-Regulated Learning**

Joep van der Graaf, Radboud University Nijmegen, Netherlands; Lyn Lim, Technical University of Munich, Germany; Yizhou Fan, Peking University, China; Shaveen Singh, Monash University, Australia; Mladen Raković, Monash University, Australia; Johanna Moore, University of Edinburgh, United Kingdom; Dragan Gasavic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

**Approaches to learning and self-regulation strategies among Chilean higher education students**

Carlos González, Pontificia Universidad Católica de Chile, Chile; Juan Pedro Ross, Universidad de Chile, Chile

Session O: 17

Time: 17:00-18:30

Location: AUTH\_T102

**SINGLE PAPER: CONCEPTUAL CHANGE AND EPISTEMIC BELIEFS****Chair**

Fotini Polychroni, NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, Greece

**Relation of conceptual understanding and epistemic beliefs in biology: A person oriented approach**

Vesta Aleknavičiūtė, Vytautas Magnus University, Lithuania; Ilona Södervik, University of Helsinki, Finland; Erno Lehtinen, University of Turku, Finland; Jake McMullen, University of Turku, Finland

**A Comprehensive Validation Study of an Instrument for Measuring Epistemic Beliefs**

Belinda Berweger, Friedrich-Schiller-University Jena, Germany; Florentine Diersch, Friedrich-Schiller-University Jena, Germany; Baerbel Kracke, University of Jena, Germany; Julia Dietrich, Friedrich-Schiller-University Jena, Germany

**R- and P-epistemic beliefs – On the inter- and intraindividual structure of epistemic beliefs**

Eric Klopp, Saarland University, Germany; Robin Stark, Saarland University, Germany

**The Study of Conceptual Change and the Diffusion of Knowledge across Disciplinary boundaries**

Gregg Solomon, National Science Foundation, United States

Session O: 18

Time: 17:00-18:30

Location: UOM\_R09

**SINGLE PAPER: MENTORING AND COACHING OF EARLY CAREER TEACHERS****Chair**

Jelena Radisic, University of Oslo, Norway

**University and school-based support for teachers in career entry**

Anja Winkler, University of Teacher Education Bern, Switzerland; Daniela Freisler, Pädagogische Hochschule, Institut Forschung &amp; Entwicklung, Bern, Switzerland

**Novice teachers' sense of professional identity explored through portrait methodology**

Ella AIT-ZAOUIT, Fontys University of Applied Sciences, Netherlands

**A systematic review of research on field practicum and professional identity development**

Elaine Munthe, University of Stavanger, Norway

**What themes do preservice teachers focus on in peer coaching dialogues? Results of a pilot study.**

Bettina Gautel, Gottfried Wilhelm Leibniz Universität Hannover, Germany; Katharina Mueller, Leibniz University Hannover, Germany

Session O: 19

Time: 17:00-18:30

Location: UOM\_A06

## SINGLE PAPER: PREDICTING ACHIEVEMENT AND MOTIVATION

## Chair

Winnie-Karen Giera, Institute of German Studies, University of Potsdam, Germany

**PISA Reading Achievement, Literacy Motivation and School Burnout Predicting Educational Outcomes**

Kati Vasalampi, University of Jyväskylä, Finland; Asko Tolvanen, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland; Anna-Maija Poikkeus, University of Jyväskylä, Finland; Kaisa Aunola, University of Jyväskylä, Finland

**How Does Studying Latin in Secondary Education Predict Study Achievement in Higher Education?**

Cathy Hauspie, Ghent University, Belgium; Stijn Schelfhout, Ghent University, Belgium; Nicolas Dirix, Ghent University, Belgium; Lot Fonteyne, Ghent University, Belgium; Mark Janse, Ghent University, Belgium; Arnaud Szmalec, Université catholique de Louvain (UCL), Belgium; Alexandra Vereeck, Universiteit Gent, Belgium; Wouter Duyck, Ghent University, Belgium

**English Media Use Predicts Skill and Motivation Development in English as a Foreign Language**

Jennifer Meyer, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Johanna Fleckenstein, University of Hildesheim, Germany; Maleika Krüger, University of Potsdam, Germany; Stefan Keller, Zürich University of Teacher Education, Switzerland; Nicolas Hübner, University of Tübingen, Germany

**Does the use of ICT at school predict lower PISA scores or vice versa?**

Nestori Kilpi, Tampere University, Finland; Ninja Hienonen, Tampere University, Finland; Mari-Pauliina Vainikainen, Tampere University, Finland

Session O: 20

Time: 17:00-18:30

Location: UOM\_A10

## SINGLE PAPER: ASPECTS OF HEALTHCARE EDUCATION

## Chair

Javier Fernández, Universidad de Leon, Spain

**Measuring communication competence of medical students: Validation of a situational judgment test**

Sabine Reiser, University of Erfurt, Germany; Laura Schacht, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Kristina Schick, Technical University of Munich, Germany; Pascal Berberat, TUM Medical Education Center, Germany; Martin Gartmeier, Technical University of Munich (TUM), Germany; Johannes Bauer, University of Erfurt, Germany

**"Am I being observed?": Medical students' perceptions about remote proctoring**

Vasiliki Andreou, KU LEUVEN, Belgium; Sanne Peters, University of Melbourne, Australia; Jan Eggermont, KU LEUVEN, Belgium; Birgitte Schoenmakers, KU LEUVEN, Belgium

**Context factors affecting experienced agency to engage in interprofessional feedback dialogues**

Marije Lesterhuis, UMC Utrecht, Netherlands; Marijke Eurelings, Spaarne Gasthuis, Netherlands; Marieke van der Schaaf, University Medical Center Utrecht / Utrecht University, Netherlands; Reinier Hoff, University Medical Center Utrecht, Netherlands

**The impact of paediatric public health degree programs: hope for South Africa.**

Danica Sims, University of the Western Cape, South Africa; Anthony Westwood, University of Cape Town, South Africa; Jawaya Shea, University of Cape Town, South Africa

Session O: 21

Time: 17:00-18:30

Location: UOM\_A05

## SINGLE PAPER: REMOTE LEARNING AND EVALUATION IN HIGHER EDUCATION

## Chair

Hanke Korpershoek, University of Groningen, Netherlands

**Students' experiences of remote online exams at a distance learning university**

Simon Cross, The Open University, United Kingdom; Maria Aristeidou, Institute of Educational Technology/The Open University, United Kingdom; Klaus-Dieter Rossade, The Open University, United Kingdom; Carlton Wood, The Open University, United Kingdom

**Reducing cheating behavior in online exams by considering students' needs, conceptions, and reasons**

Marco Rüdth, University of Cologne, Germany; Maria Jansen, University of Cologne, Germany; Kai Kaspar, University of Cologne, Germany

**Using a conversational agent to support goal setting amongst higher education students**

Gabrielle Martins Van Jaarsveld, Erasmus University Rotterdam, Netherlands; Jacqueline Wong, Utrecht University, Netherlands; Martine Baars, Erasmus University Rotterdam, Netherlands; Marcus Specht, TU Delft, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands

**Lessons from Learners: European Narratives of Hope and Belonging through MOOC Engagement**

Nathaniel Cradit, University of Michigan, United States; Caitlin Hayward, University of Michigan-Ann Arbor, United States

**Back to face-to-face teaching and learning: I (don't) want to!**

Elisabeth Seethaler, Pädagogische Hochschule Salzburg, Austria; Julia Klug, PH Salzburg, Austria

Session O: 22

Time: 17:00-18:30

Location: UOM\_CR

**SINGLE PAPER: LARGE-SCALE ASSESSMENTS OF MATHEMATICS AND NUMERACY****Chair**

Jolien Mouw, University of Groningen, Faculty of Behavioural and Social Sciences, GION Education/Research, Netherlands

**Learning Aids' Effect on Mathematics in Grade 8 of Vocational Education in Flanders (Belgium)**

Margo Vandebroek, KU LEUVEN (BE 0419.052.173), Belgium; Jonas Dockx, KU LEUVEN, Belgium; Rianne Janssen, KU LEUVEN, Belgium

**Not Adding It Up: Grade 1 mathematics outcomes in two South African provinces**

Irene Pampallis, University of the Witwatersrand, South Africa; Nic Spaul, Stellenbosch University, South Africa; Cally Ardington, University of Cape Town, South Africa; Ingrid Sapire, University of the Witwatersrand, South Africa; Permie Isaac, Funda Wande, South Africa

**Time on task in 9th grade low-stakes and high-stakes Math assessment**

Janica Vinni-Laakso, University of Helsinki, Finland; Risto Hotulainen, University of Helsinki, Finland; Sirku Kupiainen, University of Helsinki, Finland

**What explains the performance gap in mathematics between native and immigrant students in Finland?**

Faruk Nazeri, Tampere University, Finland; Mari-Pauliina Vainikainen, Tampere University, Finland

Session O: 23

Time: 17:00-18:30

Location: UOM\_A04

**SINGLE PAPER: METACOGNITIVE PROCESSES AND SELF-REGULATED LEARNING IN TEXT COMPREHENSION****Chair**

Yiannis Georgiou, Cyprus University of Technology, Cyprus

**A Comparison Between Rereading and Reading of Multiple Texts**

Peter Seban, Czech Academy of Sciences, Slovakia; Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Radovan Šikl, Institute of Psychology, Czech Academy of Sciences, Czech Republic

**The Role of Headings for Self-Regulated Learning From Texts**

Anja Prinz-Weiß, University of Education Karlsruhe, Germany; Aline König, University of Education Freiburg, Germany

**Do E-book interventions help promote near-transfer in first-grade students?**

GILA DUSHNITZKY, Talpiot College of Education, Israel; Adina Shamir, Faculty of Education, Bar-Ilan University, Israel

**Improving Monitoring Accuracy and Text Comprehension: Effects of Delayed and Immediate Diagramming**

Sophia Braumann, University Utrecht, Netherlands; Margot van Wermeskerken, Utrecht University, Netherlands; Héctor J. Piñeira-Díaz, Maastricht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

Session O: 24

Time: 17:00-18:30

Location: UOM\_R01

**POSTER PRESENTATION: SCIENCE AND STEM: ACHIEVEMENT AND INSTRUCTIONAL DESIGN****Chair**

Christian Leukel, University of Education Freiburg, Germany

**GaiaXus Citizen Science: New Avenues for Metacognition, STEM Career Motivation, and Achievement**

Suzanne Hiller, Blue Swallow Farm Foundation, Center for Research and Instruction in the Natural World, United States

**Concreteness in Quantum Chemistry**

Charlotte Müller, ETH Zurich, Switzerland; Markus Reiher, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland

**Is mathematics and science integration worth the cost?**

Patrice Potvin, Université du Québec à Montréal, Canada; Emmanuel Ahr, Université du Québec à Montréal (UQAM), Canada; Stéphane Cyr, Université du Québec à Montréal (UQAM), Canada; Martin Riopel, Université du Québec à Montréal (UQAM), Canada

**Effect of a Workshop Intervention on Faculty Instructional Practices: A Randomized Control Trial**

Jenefer husman, University of Oregon, United States; Maura Borrego, The University of Texas at Austin, United States; Cynthia Finelli, University of Michigan, United States; Michael Prince, Bucknell University, United States; Lea Marlor, University of Michigan, United States

**“you're supposed to be good at science”: Making Experiences of Asian-American Women in STEM Visible**

Dionne Cross Francis, University of North Carolina at Chapel Hill, United States; Jasmyne Yeldell, University of North Carolina Chapel Hill, United States; Pavneet Kaur Bharaj, University of North Carolina, United States; Anina Mahmud, University of North Carolina, United States; Kerrie Wilkins-Yel, University of Massachusetts Boston, United States

**Gender differences in adolescents' task value development based on dimensional comparison**

Kezia Olive, University of Helsinki, Finland; Janica Vinni-Laakso, University of Helsinki, Finland; Junlin Yu, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

Session O: 25

Time: 17:00-18:30

Location: UOM\_R03

## POSTER PRESENTATION: HIGHER AND DOCTORAL EDUCATION

## Chair

Koula Charitonos, The Open university UK, United Kingdom

**Exploring the dynamic features of team reflexivity in student project teams**

Lieke Lochten, University of Antwerp, Belgium; Piet Van den Bossche, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium

**Student Engagement and the Learning Environment in the First Year in HE – A Systematic Review**

Taiga Brahm, University of Tübingen, Germany; Mikaël De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l'Enseignement Supérieur (ARES), Belgium; Franziska Zellweger, Zurich University of Teacher Education, Switzerland

**Professional identity development and academic success during the transition to higher education**

Pieter van Lamoen, Erasmus University Rotterdam, the Netherlands, Netherlands; Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Annemarie Hiemstra, Erasmus University Rotterdam, Netherlands; Arends Lidia, Erasmus University Rotterdam, Netherlands; Sabne Severiens, Erasmus University Rotterdam, Netherlands

**Doctoral graduates in the eye of employers outside academia**

Lien Wille, Ghent University, Belgium; Anneleen Mortier, Ghent University, Belgium; Katia Levecque, Ghent University, Belgium

**Students' Intentions to Enrol in Higher Education: The Multilevel Effects of Grade Retention**

Natalie de Nóbrega dos Santos, ISPA-Instituto Universitário, Portugal; Vera Monteiro, ISPA- Instituto Universitário, Portugal; Carolina Carvalho, UIDEF, Instituto de Educação da Universidade de Lisboa, Portugal

**Career-related perceptions of the Atidim program graduates**

Or Shav-Artza, Technion, Israel; Shahaf Rocker Yoel, Technion, Israel; Yehudit Judy Dori, Technion and Samuel Neaman Institute, Israel

**Academic Writing Interventions in Higher Education: A Systematic Review**

Julianne van Meerten, University of Maryland, United States

Session O: 26

Time: 17:00-18:30

Location: UOM\_GYM

## ROUNDTABLE: COMMUNITIES OF LEARNERS/PRACTICE AND TEACHER EFFECTIVENESS

## Chair

Jolien Quinten, Hogeschool PXL, Belgium

**How Data Literate Is My School Team? Designing An Instrument To Measure Data Literacy**

Ariadne Warmoes, Vrije Universiteit Brussel (VUB), Belgium; Iris Decabooter, Hasselt University, Belgium; Els Consuegra, Vrije Universiteit Brussel, Belgium; Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium; Roos Van Gasse, University of Antwerp, Belgium

**Instructional Quality in Economics Education**

Stefanie Findeisen, University of Konstanz, Germany; Patricia Köpfer, University of Hohenheim, Germany; Liane Platz, University of Konstanz, Germany

**Practice-based educational research: making practice-research activities part of teacher's work**

Anna Åkerfeldt, Stockholm University, Sweden; Sylvana Sofkova Hashemi, University of Gothenburg, Sweden

Session O: 27

Time: 17:00-18:30

Location: UOM\_A11

## ICT DEMONSTRATION: TRANSLATING EVIDENCE INTO PRACTICE: A CLEARINGHOUSE APPROACH FOR (PRE-SERVICE) TEACHER EDUCATION

**Translating evidence into practice: A clearinghouse approach for (pre-service) teacher education**

Annika Diery, Technical University of Munich (TUM), Germany; Claudia Müller-Kreiner, Technische Universität München (TUM), Germany; Meg Farrell, Technische Universität München, Germany; Anastasia Asiedu, Technische Universität München (TUM), Germany; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany; Tina Seidel, Technische Universität München, Germany

Session O: 28

Time: 17:00-18:30

Location: UOM\_R02

## POSTER PRESENTATION: TEACHING APPROACHES

## Chair

Christa Krijgsman, Fontys Hogeschool/Kenniscentrum Youth Education for Society, Netherlands

**Enhancing GTAs' questioning techniques in a mandatory training course**

Peter Fat Man Lau, The University of Hong Kong, China

**Students' participation: how it is understood and experienced by second-year teacher students**

Irina Ivashenko Amdal, University of Agder, Norway; kristin endresen-maharaj, University of Agder, Norway

**Faculty participation in discipline-based education research in the neoliberal university**

Trisha Douin-Manning, University of Louisville, United States; Raymond Chastain, University of Louisville, United States; Jeffrey Hieb, University of Louisville, United States; Marci DeCaro, University of Louisville, United States; Linda Fuselier, University of Louisville, United States

**Routes to change: Development of teacher educators in an educational neuroscience program**

Efrat Luzzatto, MOFET Institute for Research, Israel; Gal Ben-Yehudah, The Mofet Institute, Israel; Orit Elgavi, Achva Academic College of Education, Israel; Ety Grobgeld, Achva Academic College, Israel

**Teachers' implicit and explicit knowledge of learning in daily classroom pedagogy**

Erik Meij, Windesheim University of Applied Sciences, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Anneke Smits, Windesheim University, Netherlands

Session P: 1

Time: 18:45-20:15

Location: HELEXPO\_CC

## INVITED SYMPOSIUM: PROCESS MEASURES IN THE ERA OF ARTIFICIAL INTELLIGENCE

## Chair

Kshitij Sharma, Norwegian University of Science and Technology (NTNU), Norway

## Organiser

Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium

## Discussant

Kshitij Sharma, Norwegian University of Science and Technology (NTNU), Norway

**Unfolding Socially Shared Regulation of Learning Processes with Multimodal Data and AI**

Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Carolyn Rose, Carnegie Mellon University, United States

**Using AI and Multimodal SRL Trace Data to Augment Clinical Reasoning with Holoportation Technology**

Roger Azevedo, University of Central Florida, United States; Megan Wiedbusch, University of Central Florida, United States; Daryn Dever, University of Central Florida, United States; Bari Hoffman, University of Central Florida, United States

**Reading Comprehension of Causal Relations With Diagrams: Toward Automated Feedback of Sequence Order**

Héctor J. Pjeira-Díaz, Maastricht University, Netherlands; Shashank Subramanya, Maastricht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands

**Using Learning Analytics and Artificial Intelligence (AI) to Scaffold Self-Regulated Learning**

Joep van der Graaf, Radboud University Nijmegen, Netherlands; Mladen Raković, Monash University, Australia; Yizhou Fan, Peking University, China; Lyn Lim, Technical University of Munich, Germany; Shaveen Singh, Monash University, Australia; Johanna Moore, The University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

ANNOTATIONS:  
SIG 27 INVITED SYMPOSIUM

Session P: 2

Time: 18:45-20:15

Location: UOM\_CH

## INVITED SYMPOSIUM: RECENT ADVANCES OF EYE-TRACKING METHODS APPLIED IN EDUCATIONAL RESEARCH

## Chair

Markku Hannula, University of Helsinki, Finland

## Discussant

Marjaana Puurtinen, University of Turku, Finland

**Histogram recognition - An algorithmic model of eye movement**

Markku Hannula, University of Helsinki, Finland; Enrique Garcia Moreno-Esteve, University of Helsinki, Finland; Lonneke Boels, Utrecht University, Netherlands

**Visual expertise in teachers' classroom management – a mobile eye tracking study**

Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Sharisse van Driel, Open University, Netherlands; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Frank Crasborn, Fontys University of Applied Sciences, Netherlands

**What can eye movements reveal about the cognitive processes underlying teachers' diagnoses?**

Sara Becker, Freiburg University of Education, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Anika Dreher, University of Freiburg, Germany; Birgit Spinath, Heidelberg University, Germany; Tobias Dörfler, Heidelberg University, Germany

**Using eye tracking and AI to identify student strategies: Illustrated by studies in math education**

Maike Schindler, Universität zu Köln/ University of Cologne, Germany; Erik Schaffernicht, Örebro university, Sweden, Sweden; Anna Lisa Simon, Universität zu Köln/ University of Cologne, Germany; Parviz Asghari, Universität zu Köln/ University of Cologne, Germany; Achim J. Lilienthal, TU Munich, Germany

ANNOTATIONS:  
EFG INVITED SYMPOSIUM



Session P: 3

Time: 18:45-20:15

Location: AUTH\_CH

**INVITED SYMPOSIUM: MULTIMODAL ANALYTICAL APPROACHES IN RESEARCHING COLLABORATIVE PROBLEM SOLVING****Chair**

Crina Damsa, University of Oslo, Norway

**Organiser**

Hanni Muukkonen, University of Oulu, Finland

**Discussant**

Nikol Rummel, Ruhr University Bochum, Germany

**Multimodal collaboration analytics in collaborative problem solving – a scoping review**

Rachelle Esterhazy, University of Oslo, Norway; Rogers Kalliisa, University of Oslo, Faculty of Education, Norway; Daniel Sanchez, University of Oslo, Norway; Malcolm Langford, Faculty of Law, UiO, Norway; Crina Damsa, University of Oslo, Norway

**Monitoring complex collaboration processes in HE contexts: conceptual challenges in data integration**

Hanni Muukkonen, University of Oulu, Finland

**Multimodal learning analytics of collaborative problem solving in embodied teamwork**

Dragan Gasevic, Monash University, Australia; Linxuan Zhao, Monash University, Australia; Vanessa Echeverria, Monash University, Australia; Lixiang Yan, Monash University, Australia; Roberto Martinez Maldonado, Monash University, Australia

**The conditions for collaborative groups' regulation: what multimodal data can showcase?**

Jonna Malmberg, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Kateryna Zabolotna, University of Oulu, Finland, Finland; Tatiana Shubina, University of Oulu, Finland

ANNOTATIONS:  
E-CER INVITED SYMPOSIUM

Session P: 4

Time: 18:45-20:15

Location: UOM\_A02

**SYMPOSIUM: PERCEPTIONS OF STUDENT ACHIEVEMENT: INSIGHTS ON TEACHER EXPECTATIONS AND PEER ACADEMIC REPUTATIONS****Chair**

Astrid Poorthuis, Utrecht University, Netherlands

**Organiser**

Astrid Poorthuis, Utrecht University, Netherlands

**Discussant**

Tim Mainhard, Leiden University, Netherlands

**The Formation of Peer Academic Reputations after the Transition to Secondary School**

Astrid Poorthuis, Utrecht University, Netherlands; María Belén Casala, Utrecht University, Netherlands

**Differential Need-Support: The Role of Teacher Expectations and Academic Achievement**

Astrid Poorthuis, Utrecht University, Netherlands; Iris Boer, Utrecht University, Netherlands; Anouke Bakx, Fontys University, Radboud University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands

**Peer Influence on (Dis)Engagement: The Role of Academic Reputation, Friendship and Social Status**

Karine Verschueren, KU Leuven, Belgium; Nina Steenberghs, KU Leuven, Belgium; Jeroen Lavrijsen, KU Leuven, Belgium; Noona Kiuru, University of Jyväskylä, Finland

**Relations Between Teacher Emotions and Expectations**

Christine M Davies, University of Auckland, New Zealand; Mengnan Li, University of Auckland, China

Session P: 5

Time: 18:45-20:15

Location: AUTH\_DC2

**SYMPOSIUM: EVIDENCE-BASED DEVELOPMENT OF SCHOOL & TEACHING: FOSTERING INFORMED DECISION-MAKING THROUGH DATA USE****Chair**

Luisa Grützmaier, University of Vienna, Austria

**Organisers**

Luisa Grützmaier, University of Vienna, Austria; Alexander Naumann, Friedrich-Schiller-University Jena, Germany

**Discussant**

Charalambos Charalambous, University of Cyprus, Cyprus

**A Bayesian multivariate multilevel modelling approach for analyzing classroom heterogeneity**

Alexander Naumann, Friedrich-Schiller-University Jena, Germany; Dimitra Kolovou, St. Gallen University of Teacher Education (PHSG), Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Anna-Katharina Praetorius, University of Zurich, Switzerland

**Orientation of development perspectives in the school improvement process**

Luisa Grützmaier, University of Vienna, Austria; Julia Holzer, University of Vienna, Austria; Marko Lüftenegger, University of Vienna, Austria; Barbara Schober, University of Vienna, Austria; Manfred Prenzel, University of Vienna, Austria

**On the Importance and Necessity of Multiple Informant Studies for Evidence-based School Development**

Christoph Helm, Johannes Kepler University Linz, Austria; Stephan Gerhard Huber, PH Zug, Switzerland

**Computer-based formative assessment and its potential for classroom and school development**

Julia Käfer, Institute for Educational Analysis (IBBW), Germany; Evelin Ruth-Herbein, Institute for Educational Analysis (IBBW), Germany, Germany; Eva-Maria Böker, Institute for Educational Analysis (IBBW), Germany, Germany; Benjamin Fauth, Institute for Educational Analysis (IBBW), Germany, Germany

Session P: 6

Time: 18:45-20:15

Location: AUTH\_DC1

**SYMPOSIUM: TRANSACTIVITY AND SHARED REGULATION IN COLLABORATIVE PROBLEM SOLVING: CONCEPTS, SCAFFOLDS, ANALYSES****Chair**

Freydis Vogel, Universität Hamburg, Germany

**Organisers**

Freydis Vogel, Universität Hamburg, Germany; Armin Weinberger, Saarland University, Germany; Miguel Angel Rejon Zamudio, Saarland University, Germany; Jun Oshima, Shizuoka University, Japan; Cindy Hmelo-Silver, Indiana University, United States; Chen Feng, Indiana University, United States

**Discussant**

Ingo Kollar, University of Augsburg, Germany

**Regulating transactive learning discourse: A new analytics framework using temporal network analysis**

Jun Oshima, Shizuoka University, Japan; Ritsuko Oshima, Shizuoka University, Japan; Shotaro Yamashita, Shizuoka University, Japan; Jun Lu, Shizuoka University, Japan

**Exploring Facilitation Strategies for Socially Shared Regulation in Game-based Problem-Solving**

Chen Feng, Indiana University, United States; Haesol Bae, Indiana University Bloomington, United States; Tianshu (Haley) Wang, Indiana University Bloomington, United States; Daeun Hong, Indiana University Bloomington, United States; Krista D. Glazewski, Indiana University Bloomington, United States; Cindy Hmelo-Silver, Indiana University Bloomington, United States; Thomas Brush, Indiana University Bloomington, United States; Seung Lee, North Carolina State University, United States; Bradford W. Mott, North Carolina State University, United States; James C. Lester, North Carolina State University, United States

**Effects of Transactive Sentence Starters on Knowledge Co-Construction Processes and Outcomes**

Freydis Vogel, Universität Hamburg, Germany; Miguel Angel Rejon Zamudio, Saarland University, Germany; Armin Weinberger, Saarland University, Germany

**Transactivity in collaborative learning processes: The complementary roles of novelty and reference**

Freydis Vogel, Universität Hamburg, Germany; Armin Weinberger, Saarland University, Germany

Session P: 7

Time: 18:45-20:15

Location: UOM\_CR

**SYMPOSIUM: TOWARDS A BETTER UNDERSTANDING OF EF AND ITS CLOSELY RELATED CONSTRUCTS IN SCHOOL-AGE CHILDREN****Chair**

Claudia Roebbers, University of Bern, Switzerland

**Organisers**

Claudia Roebbers, University of Bern, Switzerland; Ebru Ger, University of Bern, Switzerland

**Discussant**

Evelyn Kroesbergen, Radboud University, Netherlands

**Post-error slowing across inhibition and switching tasks: An explorative study**

Kerry Lee, The Education University of Hong Kong, Hong Kong; Xiaozhi Gao, The Education University of Hong Kong, Hong Kong

**Do Science and Non-science Students Similarly Use Executive Function Skills in Maths and Physics?**

Konstantinos G Tsigaridis, University of Cambridge, Greece; Rui Wang, University of Cambridge, United Kingdom; Jiayin Zheng, University of Cambridge, UK, United Kingdom; Michelle Ellefson, University of Cambridge, United Kingdom

**The role of Executive Function in math and literacy domains in young children**

Laura Traverso, Department of Education Sciences, University of Genoa, Italy; Paola Viterbori, Department of Education Sciences, University of Genoa, Italy; Elena Gandolfi, University of Turin, Italy; Irene Tonizzi, Department of Education Sciences, University of Genoa, Italy; Maria Carmen Usai, Department of Education Sciences, University of Genoa, Italy

**The relationship between executive functions, working memory, and intelligence in children**

Ebru Ger, University of Bern, Switzerland; Claudia Roebbers, University of Bern, Switzerland

Session P: 8

Time: 18:45-20:15

Location: AUTH\_T002

**SYMPOSIUM: NECESSARY SKILLS TO DEAL WITH UNCERTAINTIES: INSIGHTS FROM TEACHERS AND STUDENTS****Chair**

Meg Farrell, Technische Universität München, Germany

**Organiser**

Despoina Georgiou, Utrecht University, Netherlands

**Discussant**

Olga Ioannidou, University College Dublin, Ireland

**Learning about the Nature of Knowledge – Lessons in Teacher Education**

Olga Ioannidou, University College Dublin, Ireland; Alison Cullinane, University of Edinburgh, United Kingdom

**Dealing with Uncertainties in Teaching: Primary School Teachers' Skills, Attitudes, and Evidence Use**

Despoina Georgiou, Utrecht University, Netherlands; Maria Rodriguez Alcolea, Utrecht University, Netherlands

**Student Agency and Future Literacy Skills: A Case Study of Scenario-Based Teaching**

Olga Ioannidou, University College Dublin, Ireland; Liam Guilfoyle, University of Oxford, United Kingdom; Sibel Erduran, University of Oxford, United Kingdom

**Conditional Reasoning: Supporting Elementary Students' Skills in Mathematical and Everyday Contexts**

Anastasia Datsogianni, University of Cyprus, Cyprus; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

Session P: 9

Time: 18:45-20:15

Location: UOM\_A03

**SYMPOSIUM: SELF-REGULATION IN YOUNG LEARNERS****Chairs**

Charlotte Dignath, TU Dortmund University, Germany;  
Bernadette van Berk, Technical University of Dortmund,  
Germany

**Discussant**

Nancy Perry, University of British Columbia, Canada

**How do self-efficacy and procedural metacognition predict performance?**

Mariette van Loon, University of Zurich, Switzerland; Claudia Roebers, University of Bern, Switzerland

**What makes primary school students use SRL strategies? Expectancy and value to explain SRL**

Bernadette van Berk, Technical University of Dortmund, Germany; Charlotte Dignath, TU Dortmund University, Germany

**Longitudinal predictors of academic outcomes in the first year of school**

Elena Vasseleu, University of Wollongong, Australia; Steven Howard, University of Wollongong, Australia

**Examining environmental affordances for Self-Regulation in Australian Early Childhood settings**

Deborah Pino-Pasternak, University of Canberra, Australia

Session P: 10

Time: 18:45-20:15

Location: AUTH\_DC3

**SINGLE PAPER: DIFFERENT ASPECTS OF DOCTORAL EDUCATION****Chair**

Marco R  th, University of Cologne, Germany

**PhD Students' Acceptance of Teaching Culture and by the Teaching Community: a Phenomenographic Study**

Triinu Soomere, University of Tartu, Estonia; Mari Karm, University of Tartu, Estonia; Torgny Rox  , Lund University, Sweden

**Industrial PhD students' research communication practices in academia and the industry**

Mar  a Cervin-Ellqvist, Chalmers University of Technology, Sweden

**The Influence of Role Models on Women in Academia - an Interview Study**

Jule Hangen, Goethe University Frankfurt, Germany; Patricia K  pfer, University of Hohenheim, Germany

**Graduate school leadership: How Danish humanities research education leaders constitute their roles**

Lynn McAlpine, University of Oxford / McGill University, Canada; S  ren Bengtson, Aarhus University, Denmark; Andrew Gibson, Trinity College Dublin, Ireland

Session P: 11

Time: 18:45-20:15

Location: AUTH\_TE1

**SINGLE PAPER: FOSTERING TEACHERS' ATTITUDES TOWARDS RESEARCH AND SCIENTIFIC INQUIRY****Chair**

Jonas Dockx, KU LEUVEN, Belgium

**Research use in the teaching profession: A systematic review**

S  lvi Mausethagen, Oslo and Akershus University College of Applied Sciences, Norway; Hege Hermansen, Oslo Metropolitan University, Norway; Hanna Holmeide, Oslo Metropolitan University, Norway; Marte Lorentzen, Oslo Metropolitan University, Norway; Vera Niederberger, P  dagogische Hochschule Schwyz, Switzerland; Guri Skedsmo, P  dagogische Hochschule Schwyz, Switzerland

**Combining a utility value and a mindset intervention to foster teachers' research motivation**

Helene Zeeb, University of Erfurt, Germany; Tamar Voss, University of Freiburg, Germany

**Teachers' beliefs, attitudes and engagement towards educational research - A longitudinal study**

Karlien De Jaeger, KULeuven / EDU-Cel (main work address Kortrijk), Belgium; Mieke De Cock, KU Leuven - Department of Physics and Astronomy, Belgium; Wim Van Dooren, KU Leuven, Belgium

**Science Teachers' Beliefs about Teaching and Learning Science Content and Scientific Inquiry**

Verena Petermann, Justus Liebig University Giessen, Germany; Andreas Vorholzer, Technical University of Munich, Germany; Claudia von Aufschnaiter, Institute of Physics Education, Germany

**Don't we need two control groups in large Randomized Controlled Trials?**

Sarah Pariser, Universit   Paris 8, France; Andr   Tricot, University Paul Val  ry, Montpellier, France, France; Caroline Viriot-Goeldel, Universit   Paris Est Creteil, France

Session P: 12

Time: 18:45-20:15

Location: AUTH\_T102

**SINGLE PAPER: INFORMAL LEARNING IN VOCATIONAL AND WORKPLACE SETTINGS****Chair**

Natalie Boelen, Hogeschool PXL, Belgium

**Learning from errors in vocational education and training**

Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany

**In-service student teacher competency development: the impact of an adapted guidance approach**

Katrien Cuyvers, University of Antwerp, Belgium; Hannes Van der Linden, University of Antwerp, Belgium; Sabrina Govaerts, AP University of Applied Sciences and Arts Antwerp, Belgium; Barbra Schits, AP University of Applied Sciences and Arts Antwerp, Belgium; Tom Smits, University of Antwerp, Belgium

**A Diary Study on Formal and Informal Learning Opportunities for Teachers in Vocational Schools**

Manuel Böhm, Universität Mannheim, Germany; Andreas Rausch, University of Mannheim, Germany

**Exploring the integration of theory and practice in work-based learning**

Zsuzsa Kovács, Eötvös Loránd University, Budapest, Hungary; Emese Schiller, Eötvös Loránd University, Hungary; Nóra Hegyi-Halmos, Eötvös Loránd University, Budapest, Hungary

Session P: 13

Time: 18:45-20:15

Location: UOM\_A05

**SINGLE PAPER: TEACHERS AND TEACHING DURING THE COVID-19 PANDEMIC II****Chair**

Isabelle Kalkusch, University of Teacher Education of Special Needs, Switzerland

**A Systematic Review of Empirical Studies Examining the Teaching Profession in the COVID-19 Pandemic**

Sherry Shilon, the Open University of Israel, Israel; Ayelet Becher, the Open University of Israel, Israel; Tali Aderet-German, Ben Gurion University of Negev, Israel

**Teacher educators' experiences and well-being during COVID-19 online teaching**

Marjaana Veermans, University of Turku, Finland; Piia Naykki, University of Jyväskylä, Finland; Anne-Maria Korhonen, Hamk University of Applied Sciences, Finland; Eetu Lehtiö, University of Turku, Finland; Lauri Salo, University of Turku, Finland

**Effects of the COVID-19 pandemic on social-emotional skills of students from a teachers' perspective**

Birgitta Kopp, Ludwig-Maximilians-University, Germany; Annika Lueg, Ludwig-Maximilians-Universität (LMU), Germany

**Student perceptions of teaching quality during the COVID-19 pandemic in Indonesia**

Maria Teodora Ping, Mulawarman University, Indonesia; Anindito Aditomo, Educational Standards, Curriculum and Assessment Agency, MOECRT and University of Surabaya, Indonesia; Irsyad Zamjani, Centre for education standard and policy, MOECRT, Indonesia; Asrijanty Asrijanty, Center for Education Assessment, MOECRT, Indonesia; Tri Lestari, Widya Mandala Catholic University, Indonesia; Anita Lie, Widya Mandala Catholic University, Indonesia; Ridwan Maulana, GION - University of Groningen, Netherlands

Session P: 14

Time: 18:45-20:15

Location: UOM\_R08

**SINGLE PAPER: EYE TRACKING AND ONLINE MEASURES OF LEARNING PROCESSES****Chair**

Fien De Smedt, Ghent University, Belgium

**Culture, pedagogy, and cognition: Think-aloud analysis of cultural differences in teacher cognition**

Nora McIntyre, University of Southampton, United Kingdom; Phyllis Lau, University of Southampton, United Kingdom; Davy Tsz Kit Ng, The University of Hong Kong, Hong Kong

**Prior knowledge predicts students' learning and later systems thinking skills of wicked problems**

Tomi Kiviluoma, University of Helsinki, Finland; Ilona Södervik, University of Helsinki, Finland; Riitta Savolainen, University of Helsinki, Finland; Helena Åström, University of Helsinki, Finland

**Hybrid explanatory animations: Anti-cued context improves compositional design**

Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France; Richard Lowe, Curtin University, Australia

Session P: 15

Time: 18:45-20:15

Location: UOM\_R05

**SINGLE PAPER: ANXIETY AND STRESS IN STUDENTS WITH SPECIAL EDUCATIONAL NEEDS****Chair**

Judith Gulikers, Wageningen University, Netherlands

**School stressors in adolescents with Specific Learning Disorders: frequency and vulnerability**

Valentina Tobia, Vita-Salute San Raffaele University, Italy; Michela Moretti, Vita-Salute San Raffaele University, Italy; Martina Lattanzi, Vita-Salute San Raffaele University, Italy; Anna Lucia Ogliari, Vita-Salute San Raffaele University, Italy

**Anxiety in students with intellectual disabilities: The influence of social acceptance and rejection**

Verena Hofmann, University of Fribourg, Switzerland

**Resilience and its association to loneliness in adolescents with and without learning difficulties**

Filippos Papazis, National and Kapodistrian University of Athens, Greece; Anastasia Vlachou, Department of Educational Studies, National and Kapodistrian University of Athens, Greece; Panayiota Stavroussi, Department of Special Education, University of Thessaly, Greece

Session P: 16

Time: 18:45-20:15

Location: UOM\_A07

**SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS THROUGH MULTIMEDIA LEARNING****Chair**

Rui Maio, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal

**Reading research meets multimedia: text-picture combinations are validated automatically**

Anne Schueler, Leibniz-Institut für Wissensmedien, Germany; Pauline Frick, Leibniz-Institut für Wissensmedien (IWM), Germany

**The impact of information density in visual representations on learning in STEM**

Elisabeth Scheicher, Paris Lodron University Salzburg, Austria; Lena von Kotzebue, University of Salzburg, Austria; Jörg Zumbach, Paris Lodron University Salzburg, Austria

**Aesthetics of illustrations in emotional design: effects on user experience and multimedia learning.**

Julien Venni, University of Geneva, Switzerland; Mireille Bétrancourt, University of Geneva, Switzerland

**Interactive Dynamic Visualizations – Evidence from an Experimental Study**

Stefanie Findeisen, University of Konstanz, Germany; Josef Guggemos, University of Education Schwäbisch Gmünd, Germany

Session P: 17

Time: 18:45-20:15

Location: AUTH\_T202

**SINGLE PAPER: VIDEO-BASED LEARNING: SUPPORTING TEACHERS AND STUDENTS****Chair**

Juming Jiang, The University of Hong Kong, Hong Kong

**Fostering student teachers' expert-like video analyses to develop professional vision**

Jasmin Lilian Bauersfeld, TU Dortmund, Germany; Bernadette Gold, TU Dortmund University, Germany

**Using videos in training fourth grade children's inferencing skills**

Brechtje van Zeijls, Erasmus University Rotterdam, Netherlands; Dianne Venneker, Leiden University, Netherlands; Lesya Ganushchak, Erasmus University Rotterdam, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands; Huib Tabbers, Erasmus University Rotterdam, Netherlands

**Using a 360° hypervideo for peer analysis of healthcare professional practice. An explorative study**

Francesca Amenduni, Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland; Vito Candido, SFUVET, Switzerland; Rita Cosoli, SFUVET, Switzerland; Alberto Cattaneo, Swiss Federal University for Vocational Education and Training, Switzerland

**Effects of expert feedback type on students' professional vision and self-efficacy**

Christopher Neil Prilop, Aarhus University, Denmark

Session P: 18

Time: 18:45-20:15

Location: UOM\_A13

**SINGLE PAPER: STUDENT MOTIVATION AND ACHIEVEMENT: EVIDENCE FROM DIFFERENT THEORETICAL PERSPECTIVES****Chair**

Maria Cutumisu, University of Alberta, Canada

**On the Joint Effects of Social, Dimensional, and Temporal Comparisons: A Longitudinal Experiment**

Fabian Wolff, Universität of Koblenz, Germany

**Expectancy-Value Constructs and Basic Needs as Predictors for Performance in Data-Based Modeling**

Matthias Mohr, Ludwig-Maximilians-Universität (LMU), Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

**How Do Mindset Beliefs Relate to Other Forms of Motivation?**

BENGU CILALI, Bilkent University, Türkiye; Aikaterini Michou, University of Ioannina, Greece, Greece; Martin Daumiller, University of Augsburg, Germany; Chris S. Hulleman, University of Virginia, United States; Kenn Barron, James Madison University, United States; Claudia C. Sutter, University of Virginia, United States

**Motivation-effort-achievement cycle in learning: a short-range dynamic experiment**

TuongVan Vu, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Abe Hofman, Universiteit van Amsterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands; Lucía Magis-Weinberg, University of Washington, United States; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

Session P: 19

Time: 18:45-20:15

Location: UOM\_A04

**SINGLE PAPER: IMMERSIVE TECHNOLOGIES FOR LEARNING AND SOCIAL BEHAVIOUR****Chair**

Benedikt Gottschlich, University of Tübingen, Germany

**Co-designing for immersive learning experiences in multiple learning ecologies**

Hans Christian Arnseth, University of Oslo, Norway; Morgane Domanchin, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway; Rolf Steier, Oslomet, Norway

**Virtual Reality to support the development of student-teachers' classroom management skills**

Wilfried Admiraal, Oslo Metropolitan University, Norway; Nadira Saab, Leiden University, Netherlands; Deniz Atal, Ankara University, Türkiye; Brigitte Theeuwes, ICLON, Leiden University, Netherlands

**Preservice Teachers' Self-Regulated Learning in Immersive Virtual Environments: A Multimodal Study**

Engin Ader, Boğaziçi University, Türkiye; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Tova Michalsky, Bar Ilan University, Israel; Ipek Paksoy, Boğaziçi University, Faculty of Education, Türkiye; Florentine Hickethier, Friedrich-Schiller-University Jena, Germany; Mathias Dehne, Friedrich Schiller University Jena, Germany; Roger Azevedo, University of Central Florida, United States; Zorit Jassin, Bar Ilan University, Israel

**Children's and adults' spatial representations of a virtual environment.**

Sophie Bénard - Linh Quang, University of Geneva, Switzerland; Sandra Berney, University of Geneva, Switzerland; Mireille Bétrancourt, University of Geneva, Switzerland; Roland Maurer, University of Geneva, Switzerland

Session P: 20

Time: 18:45-20:15

Location: AUTH\_TE2

**SINGLE PAPER: CONCEPTUAL CHANGE AND KNOWLEDGE CONSTRUCTION****Chair**

Janneke stuelen, University Utrecht, Netherlands

**Diagnosing and Promoting the Understanding of Chemical Bonding Theory**

Adrian Zwyssig, ETH Zurich - Research on Learning and Instruction, Switzerland

**The Cronbach's Alphas of Domain-Specific Knowledge Tests Before and After Learning: A Meta-Analysis**

Michael Schneider, University of Trier, Germany; Peter Edelsbrunner, ETH Zurich, Switzerland; Bianca Simonsmeier, University of Trier, Germany

**Identifying central misconceptions via network analysis**

Christian Thurn, ETH Zurich, Switzerland

Session P: 21

Time: 18:45-20:15

Location: UOM\_A11

**SINGLE PAPER: CRITICAL COMPREHENSION OF TEXT AND GRAPHICS****Chair**

Åsa Wengelin, University of Gothenburg, Sweden

**Communicating scientific complexity encourages intellectual humility and epistemic trust**

Dorothe Kienhues, University of Münster, Germany; Nina Vaupotič, University of Vienna, Austria; Regina Jucks, WWU Münster, Germany

**Do students fall for the easiness effect of science popularization? An intervention study**

Marc Stadler, Ruhr-University Bochum, Institute of Educational Science, Germany; Lisa Scharrer, University of Frankfurt, Germany; Franca Urbisch, Ruhr-University Bochum, Institute of Educational Sciences, Germany

**Refuting educational myths: Do reading goals make a difference?**

Andreas Lederer, University of Erfurt, Germany; Jana Asberger, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

**Critical graph reading: Graphs can mislead adolescents**

Kristian Kiili, Tampere University, Finland; Jake McMullen, University of Turku, Finland; Antero Lindstedt, Tampere University, Finland; Tua Nylén, University of Helsinki, Finland; Petteri Muukkonen, University of Helsinki, Finland; Manuel Ninaus, University of Graz, Austria

Session P: 22

Time: 18:45-20:15

Location: UOM\_R09

**SINGLE PAPER: MUSIC EDUCATION****Chair**

Genevieve Allaire-Duquette, Université de Sherbrooke, Canada

**Evidence-based Music Teaching: a Systematic Review and a Meta-Analysis**

Daniela - Georgiana Valache (Voinescu), West University of Timisoara, Romania; Marian Ilie, West University of Timisoara, Romania

**Music Training Produces Near but not Far Transfer of Learning in School-age Children**

Leonor Neves, University Institute of Lisbon (ISCTE-IUL), Portugal; Marta Martins, University Institute of Lisbon (ISCTE-IUL), Portugal; Ana Isabel Correia, University Institute of Lisbon (ISCTE-IUL), Portugal; São Luís Castro, University of Porto - Portugal, Portugal; César Lima, University Institute of Lisbon (ISCTE-IUL), Portugal

**Music and Music Integration in Preschool Programs: A Scoping Review**

Ana Rodrigues de Lemos, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Teresa Leal, University of Porto, Portugal; Diana Alves, Centre for Psychology at University of Porto, Portugal; Isabel M.P. Abreu-Lima, University of Porto, Portugal

**Teaching Crows and Nightingales to Sing: Exploring Vocal Abilities in Primary School Music Education**

Zyxcban Wolfs, Open University of the Netherlands, Netherlands; Els Boshuizen, Open University of the Netherlands, Netherlands; Saskia Brand-Gruwel, Open University of the Netherlands, Netherlands

Session P: 23

Time: 18:45-20:15

Location: UOM\_R03

**POSTER PRESENTATION: TEACHERS' SELF-EFFICACY****Chair**

Frank Hellmich, Paderborn University, Germany

**Teachers' self-efficacy and attitudes towards gifted and talented education**

Lucía Barrenetxea-Mínguez, University of Deusto, Spain

**Teachers' Use of Informal Learning Opportunities in Germany**

Sebastian Röhl, University of Tübingen, Germany; Jana Groß Ophoff, University College of Teacher Education Vorarlberg, Austria; Colin Cramer, University of Tübingen, Tübingen School of Education, Germany

**Resilience, Self-Compassion and Self-Efficacy in Reducing Special Education Teachers Technostress**

Pierpaolo Limone, University of Foggia, Italy; Giusi Antonia Toto, University of Foggia, Italy; Benedetta Ragni, University of Foggia, Italy

**Motivational determinants of early-career teachers' work engagement**

Dora Petrović, Institute for Social Research in Zagreb, Croatia; Iris Marušić, Institute for Social Research, Croatia; Jelena Matić, Institute for Social Research - Zagreb, Croatia, Croatia

**Experiences fostering self-efficacy in teaching science among in-service elementary school teachers**

Estelle Desjarlais, Université du Québec à Montréal, Canada; Pierre Chastenay, Université du Québec à Montréal (UQAM), Canada; Jean-Philippe Ayotte-Beaudet, Université de Sherbrooke, Canada

Session P: 24

Time: 18:45-20:15

Location: UOM\_R04

## POSTER PRESENTATION: TEACHING APPROACHES, EMOTION, MOTIVATION AND ATTITUDES

**Chair**

Annette Busse, University of Kassel, Institute of Educational Science, Germany

**Enjoyment is Reciprocally Transmitted Between Teachers and Students**

Muhterem Dindar, Tampere University, Finland; Anne Christiane Frenzel, Ludwig-Maximilians-Universität München, Germany; Reinhard Pekrun, University of Essex, United Kingdom; Corinna Reck, Ludwig-Maximilians-Universität München, Germany; Anton Marx, Ludwig-Maximilians-Universität, Germany

**Student Perception of Empathy and Teacher Professional Development: A Model for Identity Exploration**

Joseph Eisman, Temple University, United States; Jeff Vomund, George Mason University, United States

**Instructional strategies as a moderator between self-regulated learning and academic achievement**

Yuichiro Sato, Keio University, Japan; Yuno Shimizu, Hyogo University of Teacher Education, Japan; Takashi Fukutomi, Minami Kyushu University, Japan

**Teachers' attitudes towards their responsibility and perceived use of motivational factors**

Asta B Schram, University of Iceland, Iceland; Abigail Snook, University of Iceland, Iceland

**Feeling Good while Motivating Students: The Role of Teaching Identity and Motivation to Teach**

Branko Vermote, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Bart Soenens, Ghent University, Belgium; Wim Beyers, Ghent University, Belgium

**Autonomy Support Begins with Understanding: Empathy and Students' Basic Psychological Needs**

Jeff Vomund, George Mason University, United States; Angela Miller, George Mason University, United States

Session P: 25

Time: 18:45-20:15

Location: UOM\_R01

## POSTER PRESENTATION: LEARNING ANALYTICS

**Chair**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

**Predictive modeling of problem-solving behavior in an office simulation to identify weak students**

Sabrina Ludwig, University of Mannheim, Germany; Andreas Rausch, University of Mannheim, Germany; Viola Deutscher, University of Mannheim, Germany; Jürgen Seifried, University of Mannheim, Germany

**A step forward: How stakeholders envision overcoming learning analytics' current challenges?**

Ancele Kaveri, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland

**University Students Experience Learning as View-Turns**

Kristina Ahlberg, University of Gothenburg, Sweden, Sweden

**Students' physiological arousal and synchrony in the presence of a manipulated cognitive challenge**

Joni Läämsä, University of Oulu, Finland; Andy (Khanh Xuan) Nguyen, University of Oulu, Finland; Márta Sobocinski, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

**Statistically Gauging Vital Subcomponents of Diagrammatic Competency**

Shun Saso, The University of Tokyo, Japan; Yuri Uesaka, The University of Tokyo, Japan

**Student summaries as performance predictors in online learning settings using NLP**

Ilias Karasavvidis, University of Thessaly, Greece; Vasiliki Ragazou, University of Thessaly, Greece; Charalampos Papadimas, University of Thessaly, Greece



Session P: 26

Time: 18:45-20:15

Location: UOM\_R02

**POSTER PRESENTATION: LEARNING AND DEVELOPMENTAL DISABILITIES****Chair**

Thomas Martens, Medical School Hamburg, Germany

**Participative autism research: reaching social validity through the participatory research index**

Katerina Dounavi, Queen's University Belfast, United Kingdom

**Experiences with individual accommodation for students with dyslexia perceived needs in HE**

Liv Häberg, Volda University College, Norway; beate farstad, Volda University College, Norway

**German Adaption and Psychometric Properties of the CERQ-kids**

Taina Marisa Gabriel, Leibniz Universität Hannover, Germany; Moritz Börner-Ringleb, Leibniz University Hannover, Germany

**ID-READ: Individual Differences in Reading Comprehension with Eye-tracking in AD(H)D and Dyslexia**

Ellen Kok, Utrecht University, Netherlands; Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands; Eliane Segers, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**Speech intelligibility: A latent variable approach on utterances' transcriptions**

Jose Manuel Rivera Espejo, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium; Steven Gillis, Antwerp University, Belgium

Session P: 27

Time: 18:45-20:15

Location: UOM\_A06

**WORKSHOP: TEACHING SEQUENCES ON SPATIAL ORIENTATION USING A VIRTUAL CITY ON COMPUTER IN GRADES 2-4 IN GENEVA****Teaching sequences on spatial orientation using a virtual city on computer in grades 2-4 in Geneva**

Sabrina Matri, University of Geneva, Switzerland; Jean-Luc Dorier, University of Geneva, Switzerland; Fatou-Maty Diouf, University of Geneva, Switzerland

Session P: 28

Time: 18:45-20:15

Location: UOM\_A10

**ICT DEMONSTRATION: SUPPORTING TEACHERS IN DESIGNING (DIGITAL) TEACHING AND LEARNING WITH MYSCRIPTING****Supporting teachers in designing (digital) teaching and learning with myScripting**

Claude Müller, Zurich University of Applied Sciences, Switzerland; Jennifer Erlemann, ZHAW School of Management and Law, Switzerland

Session Q: 1

Time: 08:00-09:30

Location: AUTH\_CH

**INVITED SYMPOSIUM: THE POTENTIAL OF BIOPHYSIOLOGY FOR UNDERSTANDING MOTIVATION, ENGAGEMENT, AND LEARNING****Chair**

Tim Mainhard, Leiden University, Netherlands

**Discussant**

Reinhard Pekrun, University of Essex, United Kingdom

**Cooperation in primary school children: Exploring cardiac vagal tone and cognitive control**

Benedetta Zagni, University of Padua - Italy, Italy; Libera Ylenia Mastromatteo, University of Padua, Italy; Sara Scrimin, University of Padova, Italy

**The effect of physiological stress on young students' achievement behaviour and learning**

Anna-Liisa Jögi, Tallinn University, Estonia; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Students' Psychological Orientations to Science Tests: An Educational and Bio Psychological Study**

Andrew Martin, University of New South Wales, Australia; Roger Kennet, The University of New South Wales, Australia; Emma Burns, University of New South Wales, Australia; Rebecca Collie, University of New South Wales, Australia; Joel Pearson, The University of New South Wales, Australia

**University Students' Emotional Responses to Immediate Feedback in Adaptive Learning Technologies**

Anne Horvers, Radboud University Nijmegen, Netherlands; Tibor Bosse, Radboud University, Netherlands; Ard Lazonder, Radboud University, Netherlands; Inge Molenaar, Radboud University, Netherlands

ANNOTATIONS:  
EFG INVITED SYMPOSIUM

Session Q: 2

Time: 08:00-09:30

Location: UOM\_CR

**SYMPOSIUM: ECOLOGY OF FAMILY-SCHOOL PARTNERSHIP WITHIN SOCIO-ECONOMICALLY AND ETHNICALLY DIVERSE CONTEXTS****Chair**

Alexandra Karousou, Democritus University of Thrace, Greece

**Organisers**

Pauline Slot, Utrecht University, Netherlands; Efthymia Penderi, Democritus University of Thrace, Greece

**Discussant**

Paul Leseman, Utrecht University, Netherlands

**Young children's "educational niche": Family-school partnership and culture responsive relationships**

Efthymia Penderi, Democritus University of Thrace, Greece

**Turkish and Maghreb parents' relations with ECEC teachers: Role of family and (country) context**

Ryenne Francot, University Utrecht, Netherlands; Katharina Ereky-Stevens, University of Oxford, United Kingdom; Martine Broekhuizen, Utrecht University, Netherlands; Hande Erdem-Möbius, Otto-Friedrich-Universität Bamberg, Germany; Paul Leseman, Utrecht University, Netherlands

**Teacher-parent relationship in ECE and primary education. A Cross-National Study in Six Countries**

Valentina Pagani, Università di Milano Bicocca, Italy; Pauline Slot, Utrecht University, Netherlands; Efthymia Penderi, Democritus University of Thrace, Greece; Helga Norheim, Faculty of Humanities, Sports and Educational Science, Norway; Olga Wysłowska, Faculty of Education, University of Warsaw, Poland; Krzysztof Bulkowski, University of Warsaw, Poland

**What aspects contribute to parent-professional relationships in a diverse (pre)school context?**

Pauline Slot, Utrecht University, Netherlands; Efthymia Penderi, Democritus University of Thrace, Greece; Helga Norheim, Faculty of Humanities, Sports and Educational Science, Norway; Valentina Pagani, Università di Milano Bicocca, Italy; Olga Wysłowska, Faculty of Education, University of Warsaw, Poland; Krzysztof Bulkowski, University of Warsaw, Poland

Session Q: 3

Time: 08:00-09:30

Location: AUTH\_T002

**SYMPOSIUM: THE INTERPLAY OF MOTIVATION, EMOTION, AND SELF-REGULATION IN DIVERSE POPULATIONS****Chairs**

Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Lihi Sarfaty, University of Haifa, Faculty of Education, Israel

**Discussant**

Matthew Bernacki, University of North Carolina at Chapel Hill, United States

**Relations Among College Science Students' Motivation, Belonging, Emotions, and Intentions to Persist**

Arianna White-Levatich, Old Dominion University, United States; Anthony Perez, Old Dominion University, United States; Lisa Linnenbrink-Garcia, Michigan State University, United States

**Students' Use of Self-Testing in STEM Programs: Interindividual Differences in Test Engagement**

Fani Lauermann, University of Bonn, Germany; Daria Katharina Benden, University of Bonn, Germany; Jeffrey DeVries, TU Dortmund University, Germany

**Metaprocesses and Self-Regulated Learning Among High School Students: A Latent-Profile Approach**

Alla Hemi, Bar Ilan University, Israel; Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Amit Meitar-Doron, University of Haifa, Faculty of Education, Israel; Kiril Shelachevitch, University of Haifa, Faculty of Education, Israel; Lihi Sarfaty, University of Haifa, Faculty of Education, Israel

**A Complex Dynamic Systems Perspective on Teacher Self-Regulation of Instructional Practice**

Joseph Eisman, Temple University, United States; Avi Kaplan, Temple University, United States; Lightning Jay, University of Pennsylvania, United States; Abby Reisman, University of Pennsylvania, United States; Timothy Patterson, Temple University, United States; Wendy Chan, University of Pennsylvania, United States; Jenni Conrad, Temple University, United States

Session Q: 4

Time: 08:00-09:30

Location: AUTH\_DC1

**SYMPOSIUM: COGNITIVE PROCESSES IN CRITICAL READING****Chair**

Alexandra List, The Pennsylvania State University, United States

**Organiser**

Patricia Alexander, University of Maryland, United States

**Discussant**

Alexandra List, The Pennsylvania State University, United States

**COMPREHENSION AND EVALUATION: ARGUMENT TYPE, BELIEF CONSISTENCY AND READING GOALS**

Sylvia Maria Savvidou, University of Cyprus, Cyprus; Irene Anna Diakidoy, University of Cyprus, Cyprus; Lucia Mason, University of Padova, Italy

**THE RELATIONSHIPS AMONG VISUAL BEHAVIOR, MULTIPLE-TEXT PROCESSING STRATEGY USE AND TASK OUTCOMES**

An-Hsuan Wu, National Taiwan Normal University, Taiwan; Meng-Jung Tsai, National Taiwan Normal University, Taiwan

**CRITIQUE, AND NOT SUMMARY, TASKS PROMOTE CRITICAL READING**

Gala Campos, The Pennsylvania State University, United States; Alexandra List, The Pennsylvania State University, United States; Lily A. Russell, The Pennsylvania State University, United States; Hongcui Du, The Pennsylvania State University, United States; Zheng Yao, The Pennsylvania State University, United States

**RECURSIVITY IN ARGUMENTATIVE WRITING BASED ON CONFLICTING SOURCES**

Christian Tarchi, University of Florence, Italy; Ruth Villalon, University of Cantabria, Spain; Nina Vandermeulen, Umeå University, Sweden; Lidia Casado Ledesma, University of Florence, Italy; Anna Paola Fallaci, University of Florence, Italy

Session Q: 5

Time: 08:00-09:30

Location: UOM\_A03

**SYMPOSIUM: PROCESSES AND EFFECTS OF TEACHER COLLABORATION ON SCHOOL IMPROVEMENT****Chairs**

Andrea Wullschleger, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland

**Discussant**

Eva Kyndt, Swinburne University of Technology, Australia

**Schools' collaborative practices during the COVID-19-pandemic and their longitudinal effects**

Francesca Suter, University of Teacher Education of the Grisons, PHGR, Switzerland; Tobias Feldhoff, Johannes Gutenberg University of Mainz, Germany; Katharina Maag Merki, University of Zurich, Switzerland; Falk Radisch, Institute of school education and educational research, Germany; Nina Jude, University Heidelberg, Germany; Stefan Brauckmann-Sajkiewicz, Alpen-Adria-University, Institute of instructional and school development, Austria

**How effective is a high amount of teacher collaboration that is perceived as useful?**

Andrea Wullschleger, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Beat Rechsteiner, University of Zurich, Switzerland

**Micro-processes of teacher collaboration: Professional communication related to teaching**

Julia Isabella Warwas, University of Hohenheim, Germany; Christian Schadt, University of Hohenheim, Germany

**Teacher Collaboration in Class Teams: Network characteristics and Typology**

Charlotte Baez, Sankt Gallen University of Teacher Organisation, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland; Doris Kunz Heim, PH FHNW, Switzerland

Session Q: 6

Time: 08:00-09:30

Location: AUTH\_DC3

**SINGLE PAPER: ONLINE TEACHING DURING COVID-19****Chair**

Maria De Haan, Utrecht University, Netherlands

**How does teacher adaptability influence positive attitudes towards online teaching during COVID-19?**

Mingyao Sun, The University of Hong Kong, Hong Kong; Xianhan Huang, The University of Hong Kong, Hong Kong; Chun Lai, The University of Hong Kong, Hong Kong; Caixia Sun, Huzhou University, China

**Experiences of teachers with digital learning during the COVID-19 pandemic: an exploratory research**

Adriaan Vervoort, UHasselt, Belgium; Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium; Wendy Schouteden, Hasselt University, Belgium; Mario Gielen, Hasselt University, Belgium

**Teaching online during the COVID-19 pandemic: an observational study**

Carlos González, Pontificia Universidad Católica de Chile, Chile; Daniel Ponce, Pontificia Universidad Católica de Chile, Chile; Macarena Yancovic, Universidad Finis Terrae, Chile

**Portuguese teachers' adaptation and pupil level of participation during the COVID-19 pandemic**

Maria A. Flores, University of Minho, Portugal; Alexandra Barros, University of Lisbon, Portugal; Ana Veiga Simão, Faculty of Psychology, University of Lisbon, Portugal; Eva Fernandes, University of Minho, Portugal; Paulo Flores, University of Minho, Portugal; Paula Costa Ferreira, University of Lisbon, Portugal

Session Q: 7

Time: 08:00-09:30

Location: UOM\_A10

**SINGLE PAPER: INSTRUCTIONAL DESIGN FOR MULTIMEDIA LEARNING****Chair**

Maria Birbili, Aristotle University of Thessaloniki, Greece

**Combining Physical and Mental Self-management Strategies in Multimedia Learning: Best of Both Worlds**

Björn de Koning, Erasmus University Rotterdam, Netherlands

**Effects of signaling in a collaborative virtual reality learning environment**

Patrick Albus, Ulm University, Germany; Tobias Drey, Institute of Media Informatics, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**Decreasing (passive) extraneous load without reducing (active) effort? - A signaling study**

Swantje Tannert, University of Erfurt, Germany; Mathias Berg, University of Erfurt, Germany; Meret Hanses, University of Erfurt, Germany; Friederike Luise Hahmann, University of Erfurt, Germany; Katharina Ockl, University of Erfurt, Germany; Inga Glogger-Frey, University of Erfurt, Germany

**Multimedia Effects in Testing: A Systematic Review and Meta-Analysis**

Marlit Annalena Lindner, IWM - Leibniz-Institut für Wissensmedien, Universität Tübingen, Germany; Lauritz Schewior, IPN - Leibniz Institute for Science and Mathematics Education, Germany

Session Q: 8

Time: 08:00-09:30

Location: AUTH\_TE2

**SINGLE PAPER: VOCATIONAL AND WORKPLACE LEARNING****Chair**

Nina Bonderup Dohn, University of Southern Denmark, Denmark

**Does reading help in choosing a career? A mixed-methods study in the vocational transition system**

Jule Hangen, Goethe University Frankfurt, Germany; Julia Gorges, Philipps-Universität Marburg, Germany; Eveline Wuttke, Goethe-Universität Frankfurt, Germany

**Macro-Scaffolding in Vocational Education: Coherence and Adaptivity of Instructional Design**

Manon Heuer-Kinscher, Goethe University Frankfurt, Germany; Gerhard Minnameier, Goethe-Universität Frankfurt, Germany; Rico Hermkes, Goethe-Universität Frankfurt, Germany; Benjamin Herbert, Goethe Universität Frankfurt a.M., Germany

**Informal Learning Strategies in the Workplace: What they are and how to foster them**

Katja Häußermann, Ulm University Institute of Psychology and Education, Germany; Anne Frieda Doris Kittel, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**Facilitator dialogical moves supporting learning and regulation in interprofessional teams**

Amber Kornet, Saxion University of Applied Sciences, Netherlands; Maaïke Endedijk, University of Twente, Netherlands; Sebastian Dennerlein, University of Twente, Netherlands; Tijmen Schipper, Windesheim University of Applied Sciences, Netherlands

Session Q: 9

Time: 08:00-09:30

Location: UOM\_R08

**SINGLE PAPER: ARGUMENTATION IN SCIENCE EDUCATION****Chair**

Daniela - Georgiana Valache (Voinescu), West University of Timisoara, Romania

**Learning through problem-based argumentation: the differential effects across educational levels**

Antonia Larrain, Universidad Alberto Hurtado, Chile; Paulina Freire, Pontificia Universidad Católica de Chile, Chile; Valeska Grau Cardenas, Pontificia Universidad Católica de Chile, Chile; Marisol Gómez, Universidad Alberto Hurtado, Chile; Patricia López, Universidad Alberto Hurtado, Chile; Diego Cosmelli, Pontificia Universidad Católica de Chile, Chile; Hernán Cofré, Pontificia Universidad Católica de Valparaíso, Chile

**Analysing argumentation episodes: a case study from physics teacher education**

Maija Nousiainen, University of Helsinki, Finland; Karoliina Vuola, University of Helsinki, Finland

**Learning and arguing about a socio-scientific issue in an informal learning setting**

Stephan Schwan, Leibniz-Institut für Wissensmedien, Germany; Magdalena Novak, Leibniz-Institut für Wissensmedien, Germany; Siëlle Gramser, Römisch-Germanisches Zentralmuseum, Leibniz-Forschungsinstitut für Archäologie, Germany; Sabine Gerber-Hirt, Deutsches Museum von Meisterwerken der Naturwissenschaften und Technik, Germany; Feliza Ceseña, Deutsches Museum von Meisterwerken der Naturwissenschaften und Technik, Germany; Annette Noschka-Roos, Freelancer, Germany; Doris Lewalter, Technical University of Munich (TUM), Germany

**Toulmin's argumentation model scaffolds the coordination class concept of force: a case study**

Costas Naoum, University of Thessaly, Greece; vassilis Kollias, University of Thessaly, Greece

Session Q: 10

Time: 08:00-09:30

Location: AUTH\_T102

**SINGLE PAPER: TEACHERS' EXPECTATIONS AND BELIEFS AND ASSOCIATIONS TO STUDENT ACADEMIC OUTCOMES****Chair**

ZOE KANTARIDOU, UNIVERSITY OF MACEDONIA, Greece

**Teacher expectations: Contributions to student academic outcomes and beliefs**

Christine M Davies, University of Auckland, New Zealand

**Teacher perceptions of student motivation: Contribution to differences in grades and achievement**

Katharina Schnitzler, University of Potsdam, Germany; Cornelius Brandmiller, DIPF | Leibniz Institute for Research and Information in Education, Germany; Hanna Dumont, University of Potsdam, Department of Education, Germany

**A Systematic Review of Teacher or Coach Expectation Effects on Children's Motor Skill Learning**

Xiaoyu Zhan, University of Groningen, Netherlands; Anne de Bruijn, Vrije Universiteit Amsterdam, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands

**Student Teachers' Beliefs about Digital-enriched Inclusive Teaching and Learning**

Felix Bernet, PH Weingarten, Germany; Stefanie Schnebel, University of Education Weingarten, Germany

Session Q: 11

Time: 08:00-09:30

Location: UOM\_R05

**SINGLE PAPER: MATHEMATICS UNDERSTANDING AND ENGAGEMENT: MEASUREMENT ISSUES****Chair**

Elisabeth Höhne, Leibniz Universität Hannover, Germany

**When to Measure? An Exploratory Study of the Predictive Validity of Student Ratings**

sergios sergiou, University of Cyprus, Cyprus; Charalambos Charalambous, University of Cyprus, Cyprus

**Using Longitudinal Data from a Digital Learning Environment to Predict Algebra Understanding**

Markus Spitzer, Martin-Luther Universität Halle, Switzerland; Korbinian Moeller, Centre for Mathematical Cognition, School of Science, Loughborough University, Loughborough, United Kingdom, United Kingdom

**Eye-tracking as a tool to study student cognitive engagement and attention in the math classroom**

Miitta Järvinen, University of Jyväskylä, Finland; Joni Lämsä, University of Oulu, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Janne Roslöf, Åbo Akademi, Finland; Sami Lehesvuori, University of Jyväskylä, Finland; Lauri Kettunen, University of Jyväskylä, Finland

**Effects of formative assessment on motivation via perceived competence support in 3rd graders**

Larissa Aust, University of Münster, Germany; Birgit Schütze, University of Münster, Germany; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Ralf Benölken, University of Wuppertal, Germany; Elmar Souvignier, University of Muenster, Germany

Session Q: 12

Time: 08:00-09:30

Location: UOM\_R09

**SINGLE PAPER: CRITICAL THINKING, TRUST IN SCIENCE AND SCIENTIFIC INQUIRY****Chair**

Katharina Asbury, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Students' assessment of authentic pedagogy when learning to evaluate the trustworthiness of sources**

Maartje van der Eem, University of Amsterdam, Netherlands; J.P. van Drie, University of Amsterdam, Netherlands; Saskia Brand-Gruwel, Zuyd, University of Applied Sciences, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Belief updating when confronted with scientific evidence: Examining the role of trust in science**

Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany; Sianna Grösser, Leibniz Institute for Psychology (ZPID), Germany

**Promoting evidence-informed reasoning in student teachers through peer feedback**

Julia Hornstein, University of Augsburg, Germany; Martin Greisel, University of Augsburg, Germany; Johanna Ott, University of Augsburg, Germany; Anna Weidenbacher, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

**Mapping student goal plans to scientific inquiry learning behaviors during inquiry-based learning**

Megan Wiedbusch, University of Central Florida, United States; Alex Goslen, North Carolina State University, United States; Dan Carpenter, North Carolina State University, United States; Roger Azevedo, University of Central Florida, United States

Session Q: 13

Time: 08:00-09:30

Location: AUTH\_T202

**SINGLE PAPER: EYE TRACKING AND GAZE****Chair**

Xiangyuan Feng, University of Groningen, Netherlands

**Player profiles in a mathematics educational game based on eye gaze and game log data**

Diana-Elena Gratie, University of Turku, Alexandru Ioan Cuza University of Iasi, Romania; Erno Lehtinen, University of Turku, Finland

**What was I doing? Gaze-display feedback to support students' monitoring and learning in radiology**

Ellen Kok, Utrecht University, Netherlands; Diederick Niehorster, Humanities Lab Lund, Sweden; Anouk van der Gijp, UMC Utrecht, Netherlands; Dik Rutgers, UMCU, Netherlands; William Auffermann, University of Utah, United States; Marieke van der Schaaf, UMCU, Netherlands; Liesbeth Kester, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Uncovering learning from video: Cued-retrospective Reporting vs. Concurrent-Retrospective Reporting**

Marijn Gijzen, University of Antwerp, Belgium; Charlotte Van Tricht, University of Antwerp, Belgium; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium; Sven De Maeyer, Antwerp University, Belgium; David Gijbels, University of Antwerp, Belgium

**Investigating student gaze synchrony in the classroom as indicator of student engagement**

Babette Bühler, Hector Research Institute of Education Sciences and Psychology, Germany; Efe Bozkir, University of Tübingen, Germany; Patricia Goldberg, University of Tübingen, Germany; Peter Gerjets, Leibniz-Institut für Wissensmedien, Germany; Ulrich Trautwein, University of Tübingen, Germany; Enkelejda Kasneci, Technical University of Munich, Germany

Session Q: 14

Time: 08:00-09:30

Location: UOM\_A02

**SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS****Chair**

Ilias Karasavvidis, University of Thessaly, Greece

**Ideally Easy and Scientific? Text Features, the Role of Reader Characteristics and Trustworthiness**

Mark Jonas, Leibniz Institute for Psychology (ZPID), Germany; Martin Kerwer, Leibniz Institute for Psychology (ZPID), Germany; Anita Chasiotis, Leibniz Institute for Psychology (ZPID), Germany; Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany

**Knowledge revision during reading – do pictures reduce the activation of outdated information?**

Pauline Frick, Leibniz-Institut für Wissensmedien (IWM), Germany; Panayiota Kendeou, University of Minnesota, United States; Anne Schueler, Leibniz-Institut für Wissensmedien, Germany

**Exploring students' use of self-constructed diagrams when writing answers to test questions**

Emmanuel Manalo, Kyoto University, Japan; Mari Fukuda, Simon Fraser University, Canada

**When is a scientist perceived to be credible? Trust and expertise in socio-scientific domains**

Victoria Johnson, University of Minnesota, United States; Rina Harsch, University of Minnesota, United States; Panayiota Kendeou, University of Minnesota, United States

Session Q: 15

Time: 08:00-09:30

Location: AUTH\_TE1

**SINGLE PAPER: EVOLVING CORE PRACTICES IN TEACHER EDUCATION****Chair**

Hege Hermansen, Oslo Metropolitan University, Norway

**Comparing Core Practices and Entrustable Professional Activities in Teacher and Medical Education**

Marieke van der Schaaf, University Medical Center Utrecht / Utrecht University, Netherlands; Martine van Rijswijk, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands

**At the Core of Core Practices: Conceptual Knowledge as an Enabling Factor for Successful Teaching**

Julia Kienzler, Universität Freiburg, Germany; Tim M. Steininger, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany

**A Learning Trajectory for Preservice Science Teacher Eliciting and Interpreting Student Thinking**

Courtney Bell, University of Wisconsin, United States; Mark Olson, University of Wisconsin-Madison, United States

**Dilemma Managing as a Core Practice in Teaching**

Roland Ebert-Glang, Albert-Ludwigs-University Freiburg, Germany; Ai Miyamoto, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

Session Q: 16

Time: 08:00-09:30

Location: UOM\_A04

**SINGLE PAPER: EDUCATION FOR SUSTAINABLE DEVELOPMENT****Chair**

Christine Edwards-Groves, Griffith University, Australia

**Future-oriented science education building sustainability competencies**

Antti Laherto, University of Helsinki, Finland; Tapio Rasa, University of Helsinki, Finland; Lorenzo Miani, University of Bologna, Alma Mater Studiorum, Italy; Sibel Erduran, University of Oxford, United Kingdom; Olivia Levrini, University of Bologna, Italy

**Education in the Anthropocene.**

Denis Francesconi, University of Vienna, Austria

**How teachers (can) make a difference for students' development of sustainability competencies**

Katja Scharenberg, University of Education Freiburg, Germany; Eva-Maria Waltner, University of Education Freiburg, Germany; Christoph Mischo, University of Education Freiburg, Germany; Werner Rieß, PH Freiburg, Germany

**FridaysForFuture as its Pedagogical Function. An Enactive Network for Sustainable Development.**

Denis Francesconi, University of Vienna, Austria; Evi Agostini, University of Vienna, Austria

Session Q: 17

Time: 08:00-09:30

Location: UOM\_A11

**SINGLE PAPER: TEACHERS' WELL-BEING: ASSOCIATIONS WITH TEACHER- AND STUDENT-RELATED VARIABLES****Chair**

Sheeza Mahak, Loughborough University, United Kingdom

**Teachers' epistemic theories and their relations to work-related wellbeing in five countries**

Heidi Lammassaari, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Rekar Abdulhamed, University of Helsinki, Finland; Markus Talvio, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland

**Development and interplay in teachers' self-regulation and well-being: an intervention study**

Christine Wolfgramm, University of Teacher Education Zurich, Switzerland; Simone Berweger, Zurich University of Teacher Education, Switzerland; Zippora Bühner, Zurich University of Teacher Education, Switzerland; Andrea Keck Frei, Zurich University of Teacher Education, Switzerland; Christine Bieri Buschor, Zurich University of Teacher Education, Switzerland

**Student Engagement and Teacher Wellbeing: A Longitudinal Examination of Within-Person Effects**

Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Irena Buric, University of Zadar, Croatia; Izabela Soric, University of Zadar, Croatia

**This Student Makes me Feel Burnt Out: Student-Specific Self-Efficacy, Classroom Demands, and Burnout**

Annika Koch, University of Bonn, Germany; Fani Lauermann, University of Bonn, Germany

Session Q: 18

Time: 08:00-09:30

Location: AUTH\_DC2

**SINGLE PAPER: COGNITIVE DEVELOPMENT AND LEARNING IN EARLY CHILDHOOD****Chair**

Ute Sproesser, PH Ludwigsburg, Germany

**Developmentally appropriate learning: the adaptation of Ages and Stages Questionnaire-3 in Greek**

María Koushiou, University of Nicosia, Cyprus; Stavros Trakoshis, Unicaf University, Cyprus, Cyprus; Nina Michael, University of Cyprus, Cyprus; Fofi Constantinidou, University of Cyprus, Cyprus; Panayiota Dimitropoulou, University of Crete, Greece; Alexandra Klimentopoulou, Institute of Child Health, Greece; Antonis Jossif, "Paedi" Center for Specialized Pediatrics, Cyprus

**No evidence that playing a number line game improves numerical skills: a randomised controlled trial**

Ella James-Brabham, Loughborough University, United Kingdom; Tim Jay, Loughborough University, United Kingdom; Francesco Sella, Loughborough University, United Kingdom

**Talk Matters in Shared Reading: The Role of Verbal Participation in Listening Comprehension**

Janne Lepola, Univ. of Turku, Finland; Anu Kajamies, University of Turku, Finland; Molly Fuller Collins, Vanderbilt University, Department of Teaching and Learning, United States; Eero Laakkonen, University of Turku, Finland

**Long-term effects of the home literacy environment on reading development**

Minna Torppa, University of Jyväskylä, Finland; Kati Vasalampi, University of Jyväskylä, Finland; Pekka Niemi, University of Turku, Finland; Kenneth Eklund, University of Jyväskylä, Finland

Session Q: 19

Time: 08:00-09:30

Location: UOM\_A13

**SINGLE PAPER: TEACHERS' ATTITUDES AND BELIEFS ABOUT TEACHING AND ASSESSMENT****Chair**

David Zamorano, Universidad de Deusto, Spain

**Medical teachers' beliefs about teaching and assessment: effects on challenges and teaching quality**

Javier Fernández, Universidad de Leon, Spain; Ernesto Panadero, Universidad Deusto, Spain; Eneko Balerdi, Universidad de Deusto, Spain; Gaizka Camarón Alonso, Universidad de Deusto, Spain; Elena Auzmendi, Universidad de Deusto, Spain; Lucía Barrenetxea-Mínguez, University of Deusto, Spain

**Development and validation of a questionnaire on teachers' conceptions of Assessment Literacy.**

Kitty Meijer, HU University of Applied Sciences Utrecht; Open University of the Netherlands, Netherlands; Liesbeth Baartman, University of Applied Sciences Utrecht, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands; Elly de Bruijn, Hogeschool Utrecht / OU, Netherlands

**Development of elementary teachers' beliefs about history and history teaching in a PD-programme**

Yolande Potjer, University of Amsterdam, Netherlands; Marjolein Dobber, Vrije Universiteit Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Teachers Trust Scientific Evidence - Especially if it Confirms Their Beliefs**

Kirstin Schmidt, University of Education Karlsruhe, Germany; Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany; Colin Cramer, Eberhard Karls Universität Tübingen, Germany; Kris-Stephen Besa, Universität Münster, Germany; Samuel Merk, PH Karlsruhe, Germany



Session Q: 20

Time: 08:00-09:30

Location: UOM\_R02

## POSTER PRESENTATION: COMPUTER-ASSISTED LEARNING IN STUDENTS AND TEACHERS

## Chair

Jule Krüger, University of Potsdam, Germany

**Teachers' and students' acceptance of digital personalised learning: a case study in Flanders.**

Ine Windey, KU Leuven, Belgium; Stefanie Vanbecelaere, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium

**Designing for human-AI collaboration: the effects of elaborateness and adaptability of explanations**

Lenka Schnaubert, University of Nottingham, United Kingdom; Lydia Harbarth, University of Duisburg-Essen, Germany; Cora Weisenberger, Universität Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany

**Training teachers to promote self-regulated learning with digital media in the classroom**

Sabrina Reith, Technical University of Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany

**Enhancing lasting learning by generative drawing through integration of retrieval practice**

Seokyoung Kim, Ruhr University Bochum, Institute of Educational Research, Germany; Detlev Leutner, University of Duisburg-Essen, Germany; Philipp Schmiemann, Biology Education Research and Learning Lab, University of Duisburg-Essen, Germany; Julian Roelle, Ruhr University Bochum, Germany

**Learning to write in the digital age – differences between learning writing by hand or by computer**

Vibeke Rønneberg, University of Stavanger, Norway; Wenke Mork Rogne, Volda University College, Norway; Eivor Finset Spilling, Volda University College, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway; Siv M. Gamlem, Volda University College, Norway

**When to pose questions to promote learning from a science text?**

Ignacio Máñez, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Alba Rubio, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Marian Serrano-Mendizábal, University of Valencia / Interdisciplinary Research Structure for Reading (ERI Lectura), Spain; Eduardo Vidal-Abarca, Universidad de Valencia, Spain

**The Complexities of Using Digital Social Networks in Teaching and Learning**

Enilda Romero-Hall, University of Tennessee-Knoxville, United States; Lina Gomez-Vasquez, The University of Tampa, United States; Laila Forstman, University of Tampa, United States; Caldeira Ripine, University of Tampa, United States; Carolina Dias da Silva, University of Tampa, United States

Session Q: 21

Time: 08:00-09:30

Location: UOM\_R01

## POSTER PRESENTATION: PRE-SERVICE AND EARLY CAREER TEACHERS: MOTIVATIONAL, AFFECTIVE AND LEARNING PROCESSES

## Chair

Henrik Lindqvist, Linköping University, Sweden

**The impact of epistemic beliefs and emotions on student teachers' views about educational research**

Gillian Peiser, Liverpool John Moores University, United Kingdom

**Promoting preservice teachers' reflection with training using the critical incident technique**

Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany

**Effects of epistemic emotions on pre-service teachers' MCK and MPCK**

Robin Göller, Leuphana University Lüneburg, Germany; Lars Jenßen, Humboldt-Universität zu Berlin, Germany; Katja Eilerts, Humboldt-Universität zu Berlin, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany

**The role of health literacy and occupational self-regulation for teacher trainees' well-being**

Kira Elena Weber, Leuphana University Lüneburg, Germany; Elena Hohensee, Leuphana Universität Lüneburg, Germany; Stephan Schieman, Leuphana Universität Lüneburg, Germany

**Complex requirement situations - learning opportunities for student teachers**

Liana Pirovino, Pädagogische Hochschule Zürich, Switzerland; Annelies Kreis, University of Teacher Education Lucerne (PH Luzern), Switzerland

**Personality traits as determinants of early-career teachers' occupational well-being**

Josip Šabić, Institute for Social Research in Zagreb, Croatia; Dora Petrović, Institute for Social Research in Zagreb, Croatia

Session Q: 22

Time: 08:00-09:30

Location: UOM\_R03

**POSTER PRESENTATION: SELF-REGULATED LEARNING AND BEHAVIOUR****Chair**

Jean-Marc Meunier, Université Paris 8, France

**Effects of students' metacognition on teacher judgments, and school track decisions**

Markus Neuwenschwander, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Sog Yee Mok, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland; Kathrin Lockl, Leibniz Institute for Educational Trajectories (LIfBi), Germany

**Analyzing Self-Regulated Learning of Secondary School Students**

Shruti Athavale, Technical University of Munich, Germany; Lyn Lim, Technical University of Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany

**An in-depth analysis of students' approaches to transfer of trained self-regulated learning skills**

Jane Pieplebosch, Utrecht University, Netherlands; Gesa van den Broek, Utrecht University, Netherlands; Vincent Hoogerheide, Utrecht University, Netherlands; Ewa Miedzobrodzka, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Not motivated - How regulation of learning builds up students' will to learn**

Hanna Jarvenoja, University of Oulu, Finland; Tiina Susanna Törmänen, University of Oulu, Finland

**Sequential patterns between SRL processes and essay data in k-12 students.**

Inti Bistolfi, Radboud University, Netherlands; Susanne de Mooij, Radboud University, Netherlands; Joep van der Graaf, Radboud University, Netherlands; Inge Molenaar, Radboud University, Netherlands

**Learning how to Learn through Student-Engaged Design (LhL-SED): Effects on Learning and Engagement**

Shannon King, George Mason University, United States; Haley McKeen, George Mason University, United States; Anastasia Kitsantas, George Mason University, United States; Beth Hosek, George Mason University, United States; Sahar Wahidi, George Mason University, United States; Asuka Nuwere, George Mason University, United States; Jerry Putt, George Mason University, United States; Roy Echeverria, George Mason University, United States; Jack Belkin, George Mason University, United States

**The relation between the quality of university students' goal-setting and self-regulation.**

Heleen van Ravenswaaij, UMC Utrecht, Netherlands

Session Q: 23

Time: 08:00-09:30

Location: UOM\_GYM

**ROUNDTABLE: SELF-REGULATED LEARNING AND BEHAVIOUR****Chair**

Risto Hotulainen, University of Helsinki, Finland

**Instructional knowledge: On an empirical road towards conceptual clarification**

Morane Stevens, KU Leuven - University of Leuven, Belgium; Jan Elen, KU Leuven, Belgium

**An intraindividual study to how students regulate their motivation across a Bachelor course**

Linda Zenger, University Utrecht, Netherlands; Barbara Flunger, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Building bridges between theory and automated methods to study collaborative learning interactions**

Kateryna Zabolotna, University of Oulu, Finland, Finland; Jonna Malmberg, University of Oulu, Finland; Daniel Spikol, University of Copenhagen, Denmark

**Frequencies and effects of academic comparisons in everyday life**

Alexandra Petrak, University of Koblenz, Germany; Jens Möller, Kiel University, Germany; Friederike Helm, Kiel University, Germany; Fabian Wolff, Universität of Koblenz, Germany

Session R: 1

Time: 09:45-11:15

Location: UOM\_CH

**INVITED SYMPOSIUM: UNDERSTANDING AND ALLEVIATING DIFFICULTIES IN SCIENCE LEARNING: AN INTRA-INDIVIDUAL PERSPECTIVE****Chair**

Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Discussant**

Doug Lombardi, University of Maryland, College Park, United States

**Does multiplication always make bigger? Exploring conceptual change in NanoRoboMath digital game**

Tomi Kärki, University of Turku, Finland; Minna Hannula-Sormunen, University of Turku, Department of Teacher Education, Finland; Hilma Halme, University of Turku, Department of Teacher Education, Finland; Erno Lehtinen, University of Turku, Finland; Jake McMullen, University of Turku, Finland

**Thought experiments as a tool for teaching scientific concepts**

Igor Bascandzjev, Harvard Graduate School of Education, United States; Caren Walker, University of California, San Diego, United States; Elizabeth Bonawitz, Harvard Graduate School of Education, United States

**Predicting promotes revision of misconceptions: Evidence from Bayesian models and pupillary surprise**

Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany; Maria Theobald, DIPF | Leibniz Institute for Research and Information in Education, Germany; Joseph Colantonio, Harvard Graduate School of Education, United States; Igor Bascandzjev, Harvard Graduate School of Education, United States; Elizabeth Bonawitz, Harvard Graduate School of Education, United States

**What happens to conceptual knowledge during schooling? A Bayesian Hierarchical Diffusion Model**

Peter Edelsbrunner, ETH Zurich, Switzerland; Henrik Singmann, University College London, United Kingdom; Denis Dumas, University of Georgia, United States; Gidon Frischkorn, University of Zurich, Switzerland

ANNOTATIONS:  
SIG 3 INVITED SYMPOSIUM

Session R: 2

Time: 09:45-11:15

Location: AUTH\_CH

**INVITED SYMPOSIUM: ROLES AND NUANCES OF THEORETICAL WORK IN DIFFERENT DOMAINS OF EDUCATIONAL RESEARCH****Chair**

Nina Bonderup Dohn, University of Southern Denmark, Denmark

**Organiser**

Alexandra Nordström, University of Helsinki, Finland

**Discussant**

Giuseppe Ritella, University of Campania Luigi Vanvitelli, Italy

**Longitudinal social networks: Towards a better understanding of selection and influence mechanisms**

Jasperina Brouwer, University of Groningen, Netherlands; Dominik E. Froehlich, University of Vienna, Austria; Carlos de Matos Fernandes, University of Groningen, Netherlands; Marc Sarazin, University of Edinburgh, United Kingdom

**Some criteria for good theories, illustrated with research on moral and democratic education**

Jean-Luc Patry, Paris-Lodron University Salzburg, Austria

**Nothing so practical as a good theory? Studying hybridizations of learning**

Larika Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

**Dialogic and Argumentative Theoretical Foundations for Designing Educational Technology**

Claire Polo, ECP Laboratory, France; Rupert Wegerif, University of Cambridge, United Kingdom

ANNOTATIONS:  
SIG 25 INVITED SYMPOSIUM

Session R: 3

Time: 09:45-11:15

Location: AUTH\_DC1

**SYMPOSIUM: HIGH MATHEMATICS ACHIEVEMENT: RECENT ADVANCES AND CHALLENGES IN UNDERSTANDING ITS MECHANISMS****Chair**

Roland Grabner, University of Graz, Austria

**Organiser**

Bert De Smedt, KU Leuven, Belgium

**Discussant**

Michael Schneider, University of Trier, Germany

**Can cognitive abilities before the start of school predict later high mathematics achievement?**

Bert De Smedt, KU Leuven, Belgium; Merel Bakker, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**The Role of Need for Cognition in Knowledge Acquisition in Mathematics in Regular and Gifted Classes**

Franzis Preckel, University of Trier, Germany; Julia Matthes, University of Trier, Germany

**How can we characterise high-achieving students in advanced school mathematics?**

Simona Daguati, ETH Zurich, Switzerland; Elsbeth Stern, ETH Zurich, Switzerland

**The role of mathematical expertise for memory and creativity**

Michaela A. Meier, Educational Neuroscience, Institute of Psychology, University of Graz, Austria; Stephan Vogel, University of Graz, Austria; Roland Grabner, University of Graz, Austria

Session R: 4

Time: 09:45-11:15

Location: UOM\_CR

**INVITED SYMPOSIUM: SITUATION- AND CONTEXT-SPECIFICITY OF MOTIVATION AND EMOTIONS****Chairs**

Hanna Jarvenoja, University of Oulu, Finland; Hanna Gaspard, TU Dortmund University, Germany

**Discussants**

Hanke Korpershoek, University of Groningen, Netherlands; Fani Lauermann, University of Bonn, Germany

**A Complex Dynamic Systems Perspective on Situated Motivation and Emotion: Implications for Research**

Avi Kaplan, Temple University, United States; Joseph Eisman, Temple University, United States; Joanna Garner, Old Dominion University, United States; Stephen Whitney, University of Missouri/Columbia, United States

**Student- and Task-Specific Factors Influence How Personalized Math Learning Affects Outcomes**

Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Candace Walkington, Southern Methodist University, United States; Vanessa W. Vongkulluksn, University of Nevada Las Vegas, United States

**Using Contextual and Situational Methodologies to Investigate Student Emotion and Motivation**

Kirsti Lonka, University of Helsinki, Finland; Katariina Salmela-Aro, Helsinki University, Finland

**How Can Well-Being Research in Education Benefit from a Context-Specific Approach?**

Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

ANNOTATIONS:  
SIG 8 INVITED SYMPOSIUM

Session R: 5

Time: 09:45-11:15

Location: UOM\_A02

**SYMPOSIUM: WHAT IS A PHD WORTH BEYOND ACADEMIA? IMPACT OF THE DISCIPLINARY FIELD****Chair**

Isabelle Skakni, University of Applied Sciences and Arts Western Switzerland, Switzerland

**Discussant**

Montserrat Castelló, Ramon Llull University, Spain

**Ph.D. holders beyond academia as knowledge brokers: Disciplinary-based differences**

Marina García-Morante, Blanquerna, Universitat Ramon Llull, Spain; Montserrat Castelló, Ramon Llull University, Spain; Anna Sala Bubaré, Ramon Llull University, Spain

**What is a doctorate worth for non-academic employers?**

Neda Bebiroglu, Observatory of Research and Scientific Careers-F.R.S.-FNRS, Belgium

**Valuing the PhD degree in non-academic workplaces: PhD holders' and employers' perceptions**

Michaël Parmentier, University of Applied Sciences and Arts Western Switzerland, Switzerland; Nata Kereselize, University of Applied Sciences and Arts Western Switzerland, Switzerland; Laurence Fedrigo, University of Lausanne, Switzerland; Kelsey Inouye, University of Oxford, United Kingdom; Isabelle Skakni, University of Applied Sciences and Arts Western Switzerland, Switzerland

**How is holding a PhD perceived outside academia? Stereotyping of PhD holders in the French context**

Alexandre Bran, Laboratory of Interdisciplinary studies on the Doctorate, Adoc Talent Management, France; Nicolas Lopes, Adoc Talent Management, France; Eric Bonetto, Adoc Talent Management, France

Session R: 6

Time: 09:45-11:15

Location: AUTH\_T002

**SYMPOSIUM: EVIDENCE-INFORMED REASONING OF PRE-SERVICE TEACHERS****Chair**

Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

**Organiser**

Izaak Dekker, Amsterdam University of Applied Sciences (AUAS), Netherlands

**Discussant**

Ingo Kollar, University of Augsburg, Germany

**Not useful to inform teaching? Pre-service teachers' skeptical beliefs about education science**

Tamar Voss, University of Freiburg, Germany

**The scientific impotence excuse in education: Disentangling potency and pertinence assessments**

Holger Futterleib, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

**Unpacking pre-service teachers' beliefs and reasoning: A scenario-based approach**

Leila Ferguson, Kristiania University College, Norway; Ivar Bråten, University of Oslo, Norway

**Evidence-based and -informed education: Objections and future directions**

Izaak Dekker, Amsterdam University of Applied Sciences (AUAS), Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

Session R: 7

Time: 09:45-11:15

Location: AUTH\_DC2

**SYMPOSIUM: PROBLEM-SOLVING PRIOR TO INSTRUCTION AS AN EXAMPLE OF COMPOSITE INSTRUCTIONAL DESIGNS****Chairs**

Katharina Loibl, University of Education Freiburg, Germany;  
Timo Leuders, University of Education Freiburg, Germany

**Discussant**

Ido Roll, Technion - Israel Institute of Technology, Israel

**Open problem-solving, working on solved problems or fading to prepare for learning from instruction?**

Katharina Ockl, University of Erfurt, Germany; Christina Schulz, University of Freiburg, Institute of Psychology, Germany; Lennart Schalk, PH Schwyz, Switzerland; Inga Glogger-Frey, University of Erfurt, Germany

**The role of students' breadth of prior knowledge activation in preparation for learning**

Charleen Brand, Ruhr University Bochum, Institute of Educational Research, Germany; Katharina Loibl, University of Education Freiburg, Germany; Nikol Rummel, Ruhr University Bochum, Germany

**Formative feedback timing problem-solving in virtual environment simulations for medical education**

Christian Fässler, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Tanmay Sinha, Professorship for Learning Sciences and Higher Education, ETH Zurich, Switzerland; Christian Schmied, ETH Zurich, Switzerland; Jörg Goldhahn, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland; Charlotte Müller, ETH Zurich, Switzerland

**Problem-solving prior to instruction in motor learning – the case of javelin throwing**

Christian Leukel, University of Education Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany

Session R: 8

Time: 09:45-11:15

Location: UOM\_A03

**SYMPOSIUM: TEACHER PROFESSIONAL DEVELOPMENT: DIGITAL SIMULATION, VIDEOS AND PEER LEARNING****Chair**

Inga Staal Jensen, University of Oslo, Norway

**Organisers**

Katrine Nesje, University of Oslo, Norway; Toril Aagaard, University of Southeast Norway, Norway

**Discussant**

Sigrun K. Ertesvag, University of Stavanger, Norway

**CANCELLED: Using immersive virtual reality simulation for and with students (...)**

Lynn Dittrich, University of South-Eastern Norway, Norway

**Improving teaching skills with simulation training: Pre-service teachers' retrospect**

Marcus Samuelsson, Department of Behavioural science and learning, Sweden; Anja Thorsten, Department of Behavioural Sciences and Learning, Sweden; Cecilia Sveider, Department of Behavioural Sciences and Learning (IBL), Sweden; Joakim Samuelsson, IBL, Sweden

**The use of authentic practice videos in peer-mentoring of preservice teachers**

Katrine Nesje, University of Oslo, Norway; Torunn Strømme, University of Oslo, Norway

**Peer-feedback on classroom-videos: A hope for coherence in teacher education?**

Toril Aagaard, University of Southeast Norway, Norway; Lene Joensen Kjær, University of South-eastern Norway, Norway

Session R: 9

Time: 09:45-11:15

Location: AUTH\_T102

**SINGLE PAPER: READING AND WRITING DIFFICULTIES****Chair**

Freya Winterle, University of Vienna, Germany

**Identification of parental dyslexia and its influence on how children's dyslexia is predicted**

Daria Khanolainen, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Kenneth Eklund, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland

**The Relation between Spelling and IQ: A meta-analytic review**

Sietske van Viersen, Utrecht University, Netherlands; Elise de Bree, Utrecht University, Netherlands; Jolijn Vanderauwera, UC Louvain, Belgium

**Comparison of different settings in the support of graphomotor skills in first graders**

Judith Sägger, University of Teacher Education Bern, Switzerland; Michelle Maurer, University for Teacher Education Berne, Switzerland; Lidia Jana Truxius, PHBern, University of Teacher Education, Switzerland; Joséphine Schwery, University for Teacher Education Berne, Switzerland; Michael Eckhart, University of Teacher Education Bern, Switzerland

Session R: 10

Time: 09:45-11:15

Location: UOM\_A13

**SINGLE PAPER: WELL-BEING IN UNIVERSITY STUDENTS****Chair**

Hinke Endedijk, Leiden University, Netherlands

**Being well in academia: A systematic literature review on operationalizing wellbeing.**

Aisha Miren Iqbal Ruiz, Maastricht University, Netherlands; Wim Gijsselaers, Maastricht University, Netherlands; Simon Beusaert, Maastricht University, Netherlands; Inken Gast, Maastricht University, Netherlands

**Motivational orientation profiles and study well-being among higher education students**

Satu Laitinen, University of Turku: Department of Teacher Education, Finland; Ari Kaukiainen, University of Turku, Department of Psychology and Speech-Language Pathology, Finland; Tiina Tuominen, University of Turku, Study and Work Well-being Services, Finland

**Supporting student reflection by using a survey on learning processes and wellbeing**

Anne Haarala-Muhonen, University of Helsinki, Finland; Mirja Ruohoniemi, University of Helsinki, Finland; Anna Parpala, University of Helsinki, Finland

**University students' study progress and study success related to their well-being profiles**

Elisa Vilhunen, University of Helsinki, Finland; Noona Kiuru, University of Jyväskylä, Finland; Anne Mäkikangas, Tampere University, Finland; Kati Vasalampi, University of Jyväskylä, Finland; Johanna Rantanen, University of Jyväskylä, Finland

**Construct Validation of an Instrument to Measure Student Well-Being in Academic Settings**

Ramin Rostampour, University of Victoria, Canada; Meg Kapil, University of Victoria, Canada; Allyson Hadwin, University of Victoria, Canada

Session R: 11

Time: 09:45-11:15

Location: AUTH\_T202

**SINGLE PAPER: BELIEFS OF EARLY CHILDHOOD EDUCATORS AND PRIMARY SCHOOL TEACHERS****Chair**

Ma. Jenina N. Nalipay, The Chinese University of Hong Kong, Hong Kong

**Profiling Pre-service Early Childhood Teachers' Perceptions of Learning Management Systems**

Rohnii Tse, Yew Chung College of Early Childhood Education, Hong Kong; Elaine Lau, Yew Chung College of Early Childhood Education, Hong Kong; Fred Chan, Yew Chung College of Early Childhood Education, Hong Kong

**Pre-service primary school teachers' beliefs on interactive book reading in multilingual contexts**

Elina Decraene, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Preschool Teachers' Beliefs Towards the Importance of Diagnostics in Early Science Learning**

Mirjam Steffensky, University of Hamburg, Germany; Laura Venitz, University of Koblenz-Landau, Germany; Miriam Leuchter, RPTU Landau, Germany; Ilonca Hardy, Goethe-Universität Frankfurt, Germany; Anika Bürgermeister, University of Leipzig, Germany; Katharina Junge, University of Hamburg, Germany; Henrik Saalbach, University of Leipzig, Germany

**When judgements are biased by students' immigrant background, intervention can counteract**

Christin Laschke, Leibniz-Institute for Science Education (IPN), Germany; Bettina Roesken-Winter, Humboldt-Universität zu Berlin, Germany; Lars Jenßen, Humboldt-Universität zu Berlin, Germany

Session R: 12

Time: 09:45-11:15

Location: AUTH\_TE2

**SINGLE PAPER: INCLUSIVE EDUCATION****Chair**

Angela Stewart, University of Pittsburgh, United States

**Leadership in inclusive ECEC cultures**

Kati Sormunen, University of Helsinki, Finland; Raisa Ahtiainen, University of Helsinki, Finland; Arto Kallioniemi, University of Helsinki, Finland; Tapio Lahtero, University of Helsinki, Finland; Anni Loukomies, University of Helsinki, Finland

**Co-teaching as an inclusive approach in pre-schools – a Finnish case study**

Christel Sundqvist, Åbo Akademi University, Finland; Kristina Ström, Åbo Akademi University, Finland

**The composition of pre-service teacher teams and children's competencies in inclusive education**

Frank Hellmich, Paderborn University, Germany; Fabian Hoya, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Eva Blumberg, University of Paderborn, Germany

**Do we preach what we are? Studies on the antecedents of teachers' instructional goals**

Panagiotis Varsamis, University of Macedonia, Greece; MELPOMENI TALLIDOU, University of Macedonia, Greece; Georgios Katsanis, Experimental Senior High School of University of Macedonia, Thessaloniki, Greece, Greece

Session R: 13

Time: 09:45-11:15

Location: AUTH\_TE1

**SINGLE PAPER: LARGE-SCALE ASSESSMENTS OF SCHOOL AND TEACHER EFFECTIVENESS****Chair**

Benjamin Heinitz, Leibniz University Hannover, Germany

**The relationship between quality and equity in education at system level: Secondary analyses of PISA**

Leonidas Kyriakides, University of Cyprus, Cyprus; Maria Eliophotou, University of Cyprus, Cyprus; Evi Charalambous, University of Cyprus, Cyprus

**Differences between countries in guessing behavior in international large-scale assessments**

Jonas Dockx, KU LEUVEN, Belgium; Rianne Janssen, KU LEUVEN, Belgium

**ICT-skills of Flemish young adults according to PIAAC: the role of formal and non-formal education**

Lisa Dewulf, Ghent University, Belgium; Lisse Van Nieuwenhove, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium

**Measuring an Essentially Contested Concept**

Markus Alafifi, University of Uppsala, Sweden

Session R: 14

Time: 09:45-11:15

Location: UOM\_R09

**SINGLE PAPER: LEARNING ANALYTICS AND FEEDBACK****Chair**

Lynn McAlpine, University of Oxford / McGill University, Canada

**The Impact of Cognitive and Motivational Resources on Engagement with Automated Formative Feedback**

Veronika Barkela, RPTU Kaiserslautern-Landau, Germany; Miriam Leuchter, RPTU Landau, Germany

**Using Automated Individualized Feedback to Alter Learner Behavior in an Online Learning Environment**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Beate Eichmann, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Daniel Bengs, DIPF | Leibniz Institute for Research and Information in Education, Germany; Hendrik Drachler, DIPF | Leibniz Institute for Research and Information in Education, Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

**A Conceptual Framework of Learning Analytics Role in Feedback Practices in Higher Education**

Seyyed Kazem Banihashem, Open University, Department of Online Learning and Instruction, Netherlands; Omid Noroozi, Wageningen University and Research Centre, Netherlands; Stan van Ginkel, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Leah P. Macdadyen, The University of British Columbia, Canada; Harm Biemans, Wageningen University, Netherlands

**Does individual feedback on learning behavior derived from digital traces improve learning?**

Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Daniel Bengs, DIPF | Leibniz Institute for Research and Information in Education, Germany; Daniel Biedermann, DIPF | Leibniz Institute for Research and Information in Education, Germany; George Ciordas-Hertel, DIPF | Leibniz Institute for Research and Information in Education, Germany; Beate Eichmann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Julia Mendzheritskaya, Goethe-Universität Frankfurt, Germany; Julia Mordel, Goethe-University Frankfurt, Germany; Marc Winter, Goethe-University Frankfurt, Institute of Psychology, Germany; Monica Onofrei, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Ilka Wolter, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Cordula Artelt, Leibniz Institute for Educational Trajectories, Germany; Hendrik Drachler, DIPF | Leibniz Institute for Research and Information in Education, Germany; Holger Horz, Goethe-University Frankfurt, Institute of Psychology, Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

Session R: 15

Time: 09:45-11:15

Location: UOM\_R05

**SINGLE PAPER: TEACHERS' (MIS)CONCEPTIONS AND JUDGEMENTS IN THE CLASSROOM****Chair**

Philipp Marten, Ruhr University Bochum, Germany

**University teachers' conceptions on teaching and learning: a structural equation modeling study**

Neea Heinonen, University of Helsinki, Finland; Nina Katajavuori, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Mari Murtonen, University of Turku, Finland; Trang Nguyen, University of Turku / Faculty of Education, Finland; Ilona Södervik, University of Helsinki, Finland

**The effects of deliberative vs. implemental mindsets on teacher judgements – an experimental study**

Elif Özel, PH Freiburg, Germany; Katharina Loibl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany

**Does irrelevant information reduce the quality of teacher judgments of student motivation?**

Jan Beck, Psychology of Learning in Education and Instruction, University of Münster, Germany; Stephan Dutke, Psychology of Learning in Education and Instruction, University of Münster, Germany; Till Utesch, Department of Educational Sciences, University of Münster, Germany

**Understanding Teachers' Perceptions of Representations in Elementary Science Classrooms**

Cindy Hmelo-Silver, Indiana University, United States; Xintian Tu, Indiana University, United States; Joshua Danish, Indiana University, United States; Megan Humburg, Indiana University, United States; Meredith Park Rogers, Indiana University, United States; Adam Bell, Vanderbilt University, United States; Sarah Lee, Vanderbilt University, United States

Session R: 16

Time: 09:45-11:15

Location: UOM\_R01

**POSTER PRESENTATION: CRITICAL THINKING, ARGUMENTATION AND (PRE)-TEACHER PROFESSIONAL DEVELOPMENT****Chair**

Ruud Lelieur, University of Antwerp, Belgium

**Collaborative problem solving and online inquiry: Skills, processes and neural basis**

Päivi Häkkinen, University of Jyväskylä, Finland; Johanna Pöysä-Tarhonen, University of Jyväskylä, Finland; Shupin Li, University of Jyväskylä, Finland; Jarkko Hautala, Niilo Mäki Institute, Finland; Susannah Otieno-Leppänen, University of Jyväskylä, Finland; Otto Loberg, Bournemouth University, United Kingdom; Paavo Leppänen, University of Jyväskylä, Finland

**Critical thinking in teacher education: A systematic review**

Jarmila Bubikova-Moan, Oslo Metropolitan University, Norway; Leila Ferguson, Kristiania University College, Norway; Anette Andresen, Kristiania University College, Norway

**Argumentative design capacity: post-practice reflection, more than instruction, makes a difference**

Gabriel Fortes, Universidad Alberto Hurtado, Chile; Sylvia De Chiaro, Universidade Federal de Pernambuco, Brazil; Dayane Silva, Universidade Federal de Pernambuco, Brazil; Felipe Chaves, Universidade Federal de Pernambuco, Brazil; Nathalia Teofilo, Universidade Federal de Pernambuco, Brazil; Rodrigo dos Santos, Universidade Federal de Pernambuco, Brazil

**The influence of guidance and on-the-fly scaffolding in scientific inquiry**

Heide Sasse, RPTU Kaiserslautern-Landau, Germany; Miriam Leuchter, RPTU Landau, Germany; Timo Reuter, Rheinland-Pfälzische Technische Universität Kaiserslautern - Landau, Germany; Anke Maria Weber, University of Luxembourg, Luxembourg

**Studying preservice teachers' evaluation of evidential support in arguments about educational topics**

Andreas Lederer, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

**Lessons learned from applying Project-Based Learning: The Educator perspective**

Tina Papatoma, Code University of Applied Sciences, Greece



Session R: 17

Time: 09:45-11:15

Location: UOM\_R02

**POSTER PRESENTATION: MATHEMATICS AND NUMERACY IN INSTRUCTION AND ASSESSMENT RESEARCH****Chair**

Vanessa A. Völlinger, Justus-Liebig-Universität Giessen, Germany

**Learning with multiple solutions - more promising in homogeneous or in heterogeneous teams?**

Cornelia S. Große, Johannes Kepler University Linz, Austria, Austria

**Evaluation of initial arithmetic skills: adaptation and validation study of TEMA-3**

RAQUEL WEBER, Universidade Federal do Rio Grande do Sul, Brazil; Fabiana de Miranda Rocha Luna, Universidade Federal do Rio Grande do Sul, Brazil; Luciana Vellinho Corso, Universidade Federal do Rio Grande do Sul (UFRGS), Brazil; Amanda Oliveira Meggiato, Universidade Federal do Rio Grande do Sul, Brazil

**Pre-service teachers' diagnostic competences: Development of accuracy, sensitivity, and specificity**

Stephanie Kron, Ludwig-Maximilians-Universität (LMU), Germany; Daniel Sommerhoff, Leibniz Institute for Science and Mathematics Education, Germany; Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany

**Assessing Critical Thinking of Mathematical Literacy**

Kai-Lin Yang, National Taiwan Normal University, Taiwan; Chien-Heng Chen, Taipei Municipal Dali High School, Taiwan; Wan-Rou Wu, National Taiwan Normal University, Taiwan; Yun-Zu Chen, Taipei Municipal Nanhu High School, Taiwan

**Screening early subitizing abilities in preschool classes – comparison of tests**

Mona Holmqvist, Lund University, Sweden; Damon Tutunjian, Malmö university, Sweden; Catarina Wåsterlid, Malmö University, Sweden

**Solving word problem: the choice of an algorithm depends on non mathematical world semantics**

Jean-Pierre Thibaut, Université de Bourgogne / Lead - CNRS, France; Fatimah Alhashem, College of Arts &amp; Sciences Gulf University for Science &amp; Technology (GUST), Kuwait., Kuwait

Session R: 18

Time: 09:45-11:15

Location: UOM\_GYM

**ROUNDTABLE: CULTURAL DIVERSITY AND MINORITY STUDENTS****Chair**

Ulrich Ludewig, Institute for School Development Research, TU Dortmund University, Germany

**Reducing Educational Inequality by Means of Equity Funding Policies? Findings from Germany**

Denise Demski, Ruhr-University Bochum, Institute of Educational Sciences, Germany; Norbert Sendzik, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Marcel Helbig, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Gabriele Bellenberg, Ruhr-University Bochum, Institute of Educational Sciences, Germany

**Reducing gender segregated educational choices with pedagogical work life visits**

Jenni Kunnari, University of Oulu, Finland; Satu Kaleva, University of Oulu, Finland; Kati Ilkka, City of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland

**Promoting Intercultural Group Work: Lecturers' Strategies, Self-Regulation and Required Support**

Weiwei Li, University Groningen, Netherlands; Swati Vartak, University Groningen, Netherlands; Robert Coelen, University Groningen, Netherlands; Sabine Otten, University Groningen, Netherlands

**Individualising Swedish for Immigrants: Tensions and innovations in teachers' professional practice**

Dimitrios Papadopoulos, University of Gothenburg, Sweden

Session R: 19

Time: 09:45-11:15

Location: UOM\_R08

**WORKSHOP: A PRACTICAL APPROACH TO AUTHENTIC ASSESSMENT IN HIGHER EDUCATION****A Practical Approach to Authentic Assessment in Higher Education**

Debra McCormick, Monash University, Australia; Nell Kimberley, Monash University, Australia

Session R: 20

Time: 09:45-11:15

Location: AUTH\_DC3

**WORKSHOP: WHAT IS FAILURE ANYWAY? DEALING WITH UNCERTAINTY IN (THE REPLICABILITY OF) ADAPTIVE INSTRUCTION****What is failure anyway? Dealing with uncertainty in (the replicability of) adaptive instruction**

Nienke Smit, Utrecht University, Netherlands; Renske de Kleijn, UMC Utrecht, Netherlands; Jelte Wicherts, Tilburg University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands

Session R: 21

Time: 09:45-11:15

Location: UOM\_A11

**ICT DEMONSTRATION: YELLOW-RED: PLAYFUL TABLET BASED EXECUTIVE FUNCTION TEST FOR CHILDREN BETWEEN 6 AND 12****Yellow-Red: Playful Tablet based executive function test for children between 6 and 12**

Ricardo Rosas Díaz, CEDEti-UC, Chile; Catalina Santa Cruz, Centro de Justicia Educacional, Chile; Victoria Espinoza, CEDEti-UC, Chile; Camila Martínez, Pontificia Universidad Católica de Chile, CIE 160007, Chile

Session R: 22

Time: 09:45-11:15

Location: UOM\_A10

**ICT DEMONSTRATION: ANIMATED VIDEOS IN SOCIAL SCIENCE DIDACTICS FOR PRE-SERVICE TEACHER EDUCATION****Animated videos in social science didactics for pre-service teacher education**

Frederik Heyen, University of Duisburg-Essen, Germany; Sabine Manzel, Universität Duisburg-Essen, Cote D'Ivoire

Session S: 1

Time: 12:00-13:30

Location: UOM\_CH

**INVITED SYMPOSIUM: NON-CONVINCING EFFECTS IN RESEARCH ON TEACHING QUALITY: REASONS AND POSSIBLE SOLUTIONS****Chairs**

Charalambos Charalambous, University of Cyprus, Cyprus; Anna-Katharina Praetorius, University of Zurich, Switzerland

**Discussant**

Alexander Renkl, University of Freiburg, Germany

**Conceptualizing Teaching Quality: Problems, Prospects and a Proposed Way Forward**

Charalambos Charalambous, University of Cyprus, Cyprus; Daniel Muijs, Queen's University Belfast, United Kingdom; Ariel Lindorff, University of Oxford, United Kingdom

**Challenges in Conceptualizing the Outcomes and the Linkage between Outcomes and Teaching**

Svenja Vieluf, Technische Universität Braunschweig, Germany; Alexander Naumann, Friedrich-Schiller-University Jena, Germany; Kirsti Klette, University of Oslo, Norway

**Context Effects in Teaching Quality Research: Bringing a Complex Term Into Focus**

Anna-Katharina Praetorius, University of Zurich, Switzerland; Benjamin Fauth, Institute for Educational Analysis and University of Tübingen, Germany; Armin Jentsch, University of Oslo, Norway; Stefan Keller, Zürich University of Teacher Education, Switzerland

**Measuring Teaching Quality: Dilemmas and Tradeoffs**

Richard Goellner, University of Tuebingen, Germany; Mark White, University of Oslo, Norway; Thilo Kleickmann, Kiel University, Germany

ANNOTATIONS:  
SIG 18 INVITED SYMPOSIUM

Session S: 2

Time: 12:00-13:30

Location: AUTH\_DC3

**INVITED SYMPOSIUM: CREATIVE, INCLUSIVE AND EQUITABLE PLAY AND LEARNING ENVIRONMENTS: CHILDREN'S PARTICIPATION IN FOCUS****Chairs**

Heidi Harju-Luukkainen, University of Jyväskylä, Finland; Eva Staffans, Faculty of Education and Welfare Studies, Vasa, Finland

**Discussant**

Eva Staffans, Faculty of Education and Welfare Studies, Vasa, Finland

**Young children's participation and voices in city planning**

Terese Wilhelmssen, University of South-Eastern Norway, Norway; Steinar Ovreas, University of South-Eastern Norway, Norway; Simen Thorrud, University of South-Eastern Norway, Norway; Hege Roll-Hansen, University of South-Eastern Norway, Norway; Anne-Line Bjerknes, University of South-Eastern Norway, Norway

**Teachers' perspectives on children's creativity in Swedish preschools**

Valerie Margrain, Karlstad University, Sweden; Alexandra Guseva, Karlstad University, Sweden

**Participation and inclusion on the margins: Disabled and gifted children in ECE**

Valerie Margrain, Karlstad University, Sweden

**Early childhood education teachers' views on children's participation during transitions**

Eva Staffans, Faculty of Education and Welfare Studies, Vasa, Finland; Johanna Hirvi, Åbo Akademi University, Faculty of Education, Finland; Kaisa Pihlainen, University of Eastern Finland, Finland

ANNOTATIONS:  
INVITED SYMPOSIUM OF THE NORDIC EDUCATIONAL RESEARCH ASSOCIATION (NFPF)

Session S: 3

Time: 12:00-13:30

Location: UOM\_A03

**SYMPOSIUM: NEW THEORETICAL AND METHODOLOGICAL PERSPECTIVES ON TEACHER PROFESSIONAL VISION****Chair**

Rebekka Stahnke, Leibniz Institute for Science and Mathematics Education, Germany

**Discussant**

Thorsten Scheiner, Institute for Learning Sciences and Teacher Education, Australia

**Professional Vision and Teacher Noticing: Different pieces of the same puzzle?**

Jennifer Richards, Northwestern University, United States; Miriam Sherin, Northwestern University, United States; Sarah Larison, Northwestern University, United States

**Towards a Cognitive Theory of Visual Expertise: Methods of Inquiry**

Andreas Gegenfurtner, University of Augsburg, Germany; Hans Gruber, University of Regensburg, Germany; Doris Holzberger, Technical University of Munich (TUM) & ZIB (Centre for International Student Assessment), Germany; Özün Keskin, University of Augsburg, Germany; Erno Lehtinen, University of Turku, Finland; Tina Seidel, Technische Universität München, Germany; Kathleen Stürmer, University of Tübingen, Germany; Roger Saljo, University of Gothenburg, Sweden

**Visualizing Preservice Teachers' Descriptions of Noticed Tutoring Events with Epistemic Networks**

Meg Farrell, Technische Universität München, Germany; Monika Martin, University of Education Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany; Werner Rieß, PH Freiburg, Germany; Karen Könings, Maastricht University, Netherlands; Jeroen Van Merriënboer, Maastricht University, Netherlands; Tina Seidel, Technische Universität München, Germany

**CANCELLED: Teacher Noticing Discourse: Understanding Mechanisms of Teacher Learning**

Elizabeth van Es, University of California, Irvine, United States; Melissa Luna, West Virginia University, United States; Miray Tekkumru-Kisa, Florida State University, United States

Session S: 4

Time: 12:00-13:30

Location: AUTH\_DC1

**SYMPOSIUM: CLIMATE CHANGE – ADDRESSING KNOWLEDGE, ACTION AND HOPE****Chair**

Cecilia Lundholm, Stockholm University, Sweden

**Organiser**

Cecilia Lundholm, Stockholm University, Sweden

**Discussant**

Gale Sinatra, University of Southern California, United States

**Scaffolded Instruction to Facilitate Learning about the Climate Crisis and Extreme Weather**

Doug Lombardi, University of Maryland, College Park, United States; John Robertson, University of Maryland, United States; Nancy Gans, University of Maryland, College Park, United States; Joshua Jaffe, University of Maryland, United States

**CANCELLED: Promoting action competence and hope in education for a sustainable future**

MARIA OJALA, Örebro University, Sweden

**Understanding the role of knowledge and action in combating climate change**

Cecilia Lundholm, Stockholm University, Sweden; Anna Bendz, University of Gothenburg, Sweden; Caroline Ignell, Stockholm University, Sweden

**A quality climate education in Victorian schools? A cross-case comparison of pre-university subjects**

Karen Marangio, Monash University, Australia; Alan Reid, Monash University, Australia

Session S: 5

Time: 12:00-13:30

Location: UOM\_A02

**SYMPOSIUM: EXPLORING THE WHY?, WHAT?, AND HOW? OF STUDENT LEARNING IN CHALLENGE-BASED LEARNING****Chair**

Karolina Doulougeri, Eindhoven School of Education, Netherlands

**Organisers**

Kerstin Helker, Eindhoven University of Technology, Netherlands; Karolina Doulougeri, Eindhoven School of Education, Netherlands

**Discussant**

Kirsti Lonka, University of Helsinki, Finland

**Creating the foundation for studying student learning in CBL – A heuristic framework**

Jan Vermunt, Eindhoven University of Technology, Netherlands; Kerstin Helker, Eindhoven University of Technology, Netherlands; Jasmina Lazendic-Galloway, TU/e innovation Space, Eindhoven University of Technology, Netherlands; Isabelle Reymen, Eindhoven University of Technology, Netherlands; Miguel Bruns, Eindhoven University of Technology, Netherlands

**Exploring participation motivation in Challenge-based learning using a mixed methods approach**

Selina Michel, Technical University Munich, Germany; Manuel Förster, Technical University Munich, Germany

**Understanding students' regulation of learning in Challenge-based courses**

Karolina Doulougeri, Eindhoven School of Education, Netherlands; Gunter Bombaerts, Eindhoven University of Technology, Netherlands; Michael Bots, Eindhoven University of Technology, Netherlands; Jan Vermunt, Eindhoven University of Technology, Netherlands

**Students' experiences with challenge based learning in interdisciplinary and international courses**

Simon David, Ghent University, Belgium; Tijs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium

Session S: 6

Time: 12:00-13:30

Location: AUTH\_DC2

**SYMPOSIUM: TOWARDS A PROCESS-PERSPECTIVE ON THE ROLE OF EMOTION IN ARGUMENTATION, DIALOGUE, AND REASONING****Chair**

Armin Weinberger, Saarland University, Germany

**Organisers**

Armin Weinberger, Saarland University, Germany; Claire Polo, ECP Laboratory, France; Kristine Lund, CNRS & Ecole Normale Supérieure de Lyon, France; Sara Ahola, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tiina Susanna Törmänen, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Lena Aoyama Lawrence, Saarland University, Germany; Nikki Lobcowski, McGill University, Canada; Timothy Nokes, University of Pittsburgh, United States; Diane Litman, University of Pittsburgh, United States; Adriana Kovashka, University of Pittsburgh, United States; Erin Walker, University of Pittsburgh, United States

**Discussant**

Freydis Vogel, Universität Hamburg, Germany

**Exploring Social Contagion in a CSCL Environment with a Social Robot**

Nikki Lobcowski, McGill University, Canada; Yuya Asano, University of Pittsburgh, United States; Chloe Dahan, University of Pittsburgh, United States; Teresa Davison, University of Pittsburgh, United States; Timothy Nokes, University of Pittsburgh, United States; Diane Litman, University of Pittsburgh, United States; Adriana Kovashka, University of Pittsburgh, United States; Erin Walker, University of Pittsburgh, United States

**Does physiological synchrony vary when we guide collaborative learners where to look at?**

Armin Weinberger, Saarland University, Germany; Lena Aoyama Lawrence, Saarland University, Germany

**How do students' emotional expressions and regulation dialogue intertwine in collaborative learning?**

Sara Ahola, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tiina Susanna Törmänen, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland

**The emotional capture of kairos during philosophical group discussions with children**

Claire Polo, ECP Laboratory, France; Kristine Lund, CNRS & Ecole Normale Supérieure de Lyon, France

Session S: 7

Time: 12:00-13:30

Location: AUTH\_T102

**SINGLE PAPER: PHD HOLDERS' CAREERS IN AND BEYOND ACADEMIA****Chair**

Saskia Schreiter, University of Education Heidelberg, Germany

**PhD graduates' preparedness for careers beyond academia: The role of support communities**

Nata Kereselidze, University of Geneva and HES-SO (University of Applied Sciences and Arts Western Switzerland), Switzerland; Isabelle Skakni, University of Applied Sciences and Arts Western Switzerland, Switzerland

**Variation in humanities and social sciences PhD holders' careers beyond academia – the Finnish case**

Laura Sundström, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Lotta Tikkanen, University of Helsinki, Finland; Henrika Anttila, University of Helsinki, Finland

**Foreign early career academics' well-being profiles at workplaces: A person-oriented approach**

Yusuke Sakurai, Hiroshima University, Japan

Session S: 8

Time: 12:00-13:30

Location: UOM\_A10

**SINGLE PAPER: UNIVERSITY STUDENTS' DROPOUT: REASONS AND PREVENTION****Chair**

Helen Jossberger, University of Regensburg, Germany

**How dropout can be prevented by understanding it as a motivational decision process of five phases**

Nicola Vivienne Glumann, Pädagogische Hochschule Weingarten, Germany; Robert Grassinger, University of Education Weingarten, Germany; Denise Reisch, University of Education Weingarten, Germany

**Educational and occupational pathways of persons who withdraw from teacher education programs**

Sebastian Franz, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Steffen Schindler, University of Bamberg, Germany

**Reciprocal Relations Between Facets of Study Satisfaction, Procrastination, and Dropout Intentions**

Anne Scheunemann, Ruhr-University Bochum, Germany; Theresa Schnettler, Mannheim University, Germany; Lisa Bäumke, University of Tübingen, Germany; Daniel Thies, Ruhr-University Bochum, Germany; Markus Dresel, University of Augsburg, Germany; Stefan Fries, University of Bielefeld, Germany; Detlev Leutner, University of Duisburg-Essen, Germany; Joachim Wirth, Ruhr-University Bochum, Germany; Carola Grunschel, University of Münster, Germany

**Study satisfaction and drop-out intention of mathematics pre-service teachers from EVT perspective**

Robin Göller, Leuphana University Lueneburg, Germany; Lara Gildehaus, Paderborn University, Germany

**The influence of test anxiety on indicators of dropout and study delay**

Nikolai Zinke, Deutsches Institut für Erwachsenenbildung Leibniz-Zentrum für Lebenslanges Lernen e.V., Germany; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Hannes Schröter, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Natalia Reich-Stiebert, FernUniversität in Hagen, Germany; Stefan Stürmer, FernUniversität in Hagen, Germany; Sina Lenski, Deutsches Institut für Erwachsenenbildung, Germany

Session S: 9

Time: 12:00-13:30

Location: UOM\_R05

**SINGLE PAPER: MATHEMATICS AND NUMERACY IN EARLY CHILDHOOD EDUCATION****Chair**

Tessa Consoli, University of Zurich, Institute of Education, Switzerland

**Effects of an interaction training on children's mathematical language and numerical competences**

Nadine Besser, Otto-Friedrich-University of Bamberg, Germany; Dorothea Dornheim, Otto-Friedrich-University of Bamberg, Germany; Sabine Weinert, University of Bamberg, Germany; Simone Lehl, Pädagogische Hochschule Weingarten, Germany

**Visuospatial working memory explains associations between early math abilities and ANS**

David Munez, National Institute of Education / Nanyang Technological University, Singapore; Josetxu Orrantia, University of Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain; Rebecca Bull, Macquarie University, Australia

**Developmental relations between manual dexterity and mathematical cognition**

Venera Gashaj, Loughborough University, United Kingdom; Dragan Trninić, Swiss Federal Institute of Technology ETH Zurich, Switzerland

**Supporting or Restricting Mathematical Communication and Reasoning in Teaching 6-year olds**

Jessica Elofsson, University of Gothenburg, Sweden; Anna-Lena Ekdahl, Jönköping University, Sweden

Session S: 10

Time: 12:00-13:30

Location: UOM\_A13

**SINGLE PAPER: READING: TYPICAL AND ATYPICAL DEVELOPMENT****Chair**

Alicia Ramos, KU Leuven, Belgium

**Are Late-Emerging Reading Problems Truly Late- or Gradually Emerging?**

Julie Arntzen, The Norwegian Reading Centre (University of Stavanger), Norway; Oddny Judith Solheim, The Norwegian Reading Centre, Norway; Njål Foldnes, The Norwegian Reading Centre, Norway

**Developmental dynamics within verbal memory: Are models of typical development valid for dyslexia?**

Janin Brandenburg, TU Dortmund University, Germany; Kirsten Schuchardt, University Hildesheim, Germany; Claudia Maehler, University of Hildesheim, Germany

**Computer-based development of reading skills to bridge learning gap of disadvantaged students**

Renáta Kiss, University of Szeged Institute of Education, MTA-SZTE Digital Learning Technologies Research Group, MTA-SZTE Research Group on the Development of Competencies, Hungary; Katalin Szili, Hungarian University of Agriculture and Life Sciences, Institute of Education, Hungary; Dora Mokri, Szeged Center for Research on Learning and Instruction!, Hungary; Gyöngyvér Molnár, University of Szeged, MTA-SZTE Digital Learning Technologies Research Group, Hungary

**Effects of handwriting and typing on learning new words in typically developing and dyslexic readers**

Tania Cerni, University of Padova, Italy

Session S: 11

Time: 12:00-13:30

Location: UOM\_R09

**SINGLE PAPER: SELF-DETERMINATION THEORY: NEED SUPPORT, MOTIVATION AND ENGAGEMENT****Chair**

Michael Schneider, University of Trier, Germany

**Need Satisfaction and Frustration Profiles: Stability over Time and Associations with Motivation**

Christa Krijgsman, Fontys Hogeschool/Kenniscentrum Youth Education for Society, Netherlands; Tim Mainhard, Leiden University, Netherlands; Lisette Hornstra, Utrecht University, Netherlands; Leen Haerens, Ghent University, Belgium; Jan van Tartwijk, Utrecht University, Netherlands; Lars Borghouts, Fontys University of Applied Sciences, Netherlands; István Tóth-Király, Concordia University, Canada

**Does basic psychological need support lead to increased self-concept and int. motivation in PE?**

Felix Kruse, University of Teacher Education St. Gallen, Switzerland; Sonja Büchel, University of Teacher Education St. Gallen, Switzerland; Christian Bruehwiler, University of Teacher Education St. Gallen, Switzerland

**Latent student profiles based on agentic engagement and teacher autonomy support**

Luisa Molinari, University of Parma, Italy; Valentina Grazia, Università degli studi di Parma, Italy; Consuelo Mamei, University of Bologna, Italy

**Self-Supportive Strategies to Regulate Autonomy and Motivation**

Barbara Flunger, Utrecht University, Netherlands; Lau Lilleholt, Aarhus University, Denmark; Robert Böhm, Universität Wien, Austria; Ingo Zettler, University of Copenhagen, Denmark; Anouk Verdonshot, University Utrecht, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

Session S: 12

Time: 12:00-13:30

Location: AUTH\_T202

**SINGLE PAPER: FOREIGN AND SECOND LANGUAGE ACQUISITION****Chair**

Verena Jörg, DIPF | Leibniz Institute for Research and Information in Education, Germany

**In-Service Primary Teachers' Feedback Perceptions and Essential Learning Moments: Feedback Agency?**

Michel Cabot, Western Norway University of Applied Sciences, Norway

**Up and Downsides of an Austrian Language Screening Instrument - Findings from Teachers' Perspective**

Sepideh Hassani, University of Vienna, Austria; Marie Gitschthaler, University College of Teacher Education Vienna/Krems, Austria; Susanne Schwab, University of Vienna, Austria

**Using Qigong mind-body intervention to reduce culturally diverse students' foreign language anxiety**

Wai Ming Cheung, The University of Hong Kong, Hong Kong; Wing Yan So, HKJC Centre for Suicide Research and Prevention, Hong Kong; Hector Wing-hong Tsang, The Hong Kong Polytechnic University, Hong Kong

**Code-Switching Behavior Indicating Heritage Language Attrition in Dual Language Learning Children**

Leila Teresa Schächinger Tenés, Faculty of Psychology, University of Basel, Switzerland, Switzerland; Jessica Carolyn Weiner-Bühler, Faculty of Psychology, University of Basel, Switzerland; Alexander Grob, University of Basel, Switzerland; Robin Klaus Segerer, Faculty of Psychology, University of Basel, Switzerland

Session S: 13

Time: 12:00-13:30

Location: UOM\_CR

**SINGLE PAPER: EDUCATIONAL ASSESSMENT PRACTICES****Chair**

Jean-Pierre Thibaut, Université de Bourgogne / Lead - CNRS, France

**The Norwegian legacy of resisting formal grading: Paradoxes and dilemmas**

Lise Vikan Sandvik, Norwegian University of Science and Technology (NTNU), Norway; Dan-Anders Normann, Norwegian University of Science and Technology (NTNU), Norway; Sverre Tveit, University of Oslo, Norway; Henning Fjørtoft, Norwegian University of Science and Technology (NTNU), Norway

**Perceptions of assessment: An interview study of being assessed in Swedish adult education colleges**

Anders Jönsson, Kristianstad University, Sweden

**Towards ethical standards for employing user-generated data in educational assessment**

Fazilat Siddiq, University of South-Eastern Norway, Norway; Damian Murchan, University of Dublin, Ireland

**Quality of Italian preschool. The why, how and what of preschool evaluation in Italy.**

Cristina Stringher, Istituto Nazionale per la Valutazione del Sistema Educativo di Istruzione e di Formazione (INVALSI), Italy

Session S: 14

Time: 12:00-13:30

Location: AUTH\_TE1

**SINGLE PAPER: CITIZENSHIP EDUCATION****Chair**

Kim Ouwehand, Erasmus University Rotterdam, Netherlands

**Enlarging space for curriculum research within citizenship education: Whole-school approach**

Özge Karakuş Özdemirci, Middle East Technical University, Türkiye; Hanife Akar, Middle East Technical University, Türkiye

**Views on Holocaust and Citizenship: Israeli and German Civics Teachers**

Tim Zosel, University of Duisburg-Essen, Germany

**Neutrality in times of war: Russian school in the early days of the invasion of Ukraine**

Evgeniia Efimova, Uppsala University, Sweden

**Democratic Pedagogy: vision, perceptions and practice - principal's perspectives**

Yifat Filo, Tel Aviv University, Israel; Benzi Slakmon, Tel Aviv University, Israel

Session S: 15

Time: 12:00-13:30

Location: UOM\_A04

**SINGLE PAPER: UNIVERSITY STUDENTS' ANXIETY, STRESS, AND COPING DURING THE PANDEMIC****Chair**

Nikolaos Fachantidis, University of Macedonia, Greece

**University students' stress during the pandemic: Longitudinal evidence from two academic years**

Elisabeth Höhne, Leibniz Universität Hannover, Germany; Jannika Haase, Leibniz University Hannover, Germany; Lysann Zander, Leibniz University Hannover, Germany

**Psychological distress, anxiety and depression in university students during the COVID-19 pandemic**

Maria Koushiou, University of Nicosia, Cyprus; Alexandros Kapatais, University of Nicosia, Cyprus; Nuno Ferreira, University of Nicosia, Cyprus; Marios Adonis, University of Nicosia, Cyprus

**Strivings and concerns during the pandemic: University students' perfectionism, stress, and coping**

Heta Tuominen, University of Eastern Finland, Finland; Riikka Hirvonen, University of Eastern Finland, Finland; Henriikka Juntunen, University of Helsinki, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Markku Niemivirta, University of Eastern Finland, Finland

**COVID-19 and University Students: Development of the Robust - Pandemic Coping Scale (R-PCS)**

Daniela Raccanello, University of Verona, Italy; Giada Vicentini, University of Verona, Italy; Emmanuela Rocca, University of Verona, Italy; Roberto Burro, University of Verona, Italy

Session S: 16

Time: 12:00-13:30

Location: AUTH\_T002

**SINGLE PAPER: METACOGNITIVE PROCESSES AND SELF-REGULATED LEARNING AND BEHAVIOUR****Chair**

Elisa Vilhunen, University of Helsinki, Finland

**Revision and psychometric properties of the Metacognitive Awareness scale MARS1-2fR**

Aristea Mavrogianni, University of Crete, Greece; ELENI VASILAKI, University of Crete, Greece; Ioannis Spantidakis, University of Crete, Greece

**Metacognitive Awareness Activation and Effortful Problem Solving**

Ines Zeithofer, University of Salzburg, Austria; Joerg Zumbach, University of Salzburg, Austria; Judith Schweppe, University of Passau, Germany

**Get a Cue! How Metacognitive Prompts Affect the Role of Mental Effort in Generative Activities**

Valentin Riemer, Ulm University, Germany; Simona Weber, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**The Structure of Procedural Metacognition in Middle Childhood: An Argument for a Unitary Factor**

Marianne van Loon, University of Zurich, Switzerland; Ulrich Orth, University of Bern, Switzerland; Claudia Roebbers, University of Bern, Switzerland

**Metamotivational scaffolding in a digital learning environment**

Jörg Zumbach, University of Salzburg, Austria; Simone Reitstaetter, University of Salzburg, Austria; Bettina Mann, University of Salzburg, Austria; Ines Zeithofer, University of Salzburg, Austria; Hermann Astleitner, University of Salzburg, Austria

Session S: 17

Time: 12:00-13:30

Location: AUTH\_TE2

**SINGLE PAPER: SOCIAL PARTICIPATION AND INCLUSION OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS****Chair**

Anne Haarala-Muhonen, University of Helsinki, Finland

**Social inclusion and teacher-student-relationship quality at the lower secondary level**

Giuliana Pastore, Zurich University of Teacher Education, Switzerland; Reto Luder, Zurich University of Teacher Education, Switzerland; Andre Kunz, Zurich University of Teacher Education, Switzerland; Ariane Paccaud, Pädagogische Hochschule Zürich, Switzerland

**Inclusive education of students with emotional and behavioral disorders: A systematic review**

Sonja Krämer, Christian-Albrechts-University of Kiel, Germany; Julia Becherer, Christian-Albrechts-University of Kiel, Germany; Friederike Zimmermann, Kiel University, Germany

**Social participation of students with behavior problem – a peer group perspective**

Marleene Rytioja, University of Eastern Finland, Finland; Kristiina Lappalainen, University of Eastern Finland, Finland; Hannu Savolainen, University of Eastern Finland, Finland

**Social participation of children and adolescents with intellectual disabilities in sport clubs**

Carmen Zurbriggen, University of Fribourg, Switzerland; Simone Schaub, University of Teacher Education in Special Needs, Switzerland; Mireille Audeoud, Hochschule für Heilpädagogik Zürich, Switzerland; Matthias Lütolf, University of Teacher Education in Special Needs HfH Zurich, Switzerland; Anne Stöcker, University of Luxembourg, Luxembourg; Christina Arn, University of Teacher Education in Special Needs HfH Zurich, Switzerland

Session S: 18

Time: 12:00-13:30

Location: UOM\_R01

**POSTER PRESENTATION: MINORITY STUDENTS, FOREIGN LANGUAGE ACQUISITION AND MULTICULTURAL EDUCATION****Chair**

Anna-Lena Godhe, Jönköping University, Sweden

**The benefits of self-efficacy for interest in the short and longer-term.**

Luke K. Fryer, The University of Hong Kong, Hong Kong; Nicholas Bovee, Kyushu Sangyo University, Japan; Kaori Nakao, Seinan Gakuin University, Japan; Shuichi Ozono, Kyushu Sangyo University, Japan

**A route or a barrier? Teachers' perspective on the role of language to educational inclusion**

Michalis Kakos, Leeds Beckett University, United Kingdom

**Effectiveness of Instructional Design Focusing on Sentence Construction and Ambiguity**

Mika Igarashi, Hosen College of Childhood Education, Japan

**Developing contextualised oral language assessments: mapping the local within the local**

Joshua McGrane, The University of Melbourne, United Kingdom; Athina Ntalli, University of Oxford, United Kingdom; Usha M N, The Promise Foundation, India; Sanjana Nagendra, The Promise Foundation, India; Megha K, Manipal Academy for Higher Education, India; Siyu Ma, University of Oxford, United Kingdom; Gideon Arulmani, The Promise Foundation, India; Sonali Nag, University of Oxford, United Kingdom

**Scaffolding plurilingual students' learning through a functional writing roleplay in grade 1**

Kimberly Norrman, Uppsala University EDU, Sweden

**Intercultural interpreter-mediated parent-educator talks in childcare centres**

Fabienne Bohler, University of Teacher Education St.Gallen, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland

Session S: 19

Time: 12:00-13:30

Location: UOM\_R02

**POSTER PRESENTATION: COMPREHENSION OF TEXT AND GRAPHICS****Chair**

DOMNA KAKANA, Aristotle University of Thessaloniki, Greece

**Improving children's visual search for answer to questions in a text through induction tasks**

Sabine FEVIN, Centre de Recherches sur la Cognition et l'Apprentissage (CeRCA) - CNRS - Université de Poitiers - Université de Tours, France; Christine Ros, Centre de Recherches sur la Cognition et l'Apprentissage (CeRCA) CNRS - Université de Poitiers - Université de Tours, France; Delphine Oger, Centre de Recherches sur la Cognition et l'Apprentissage (CeRCA) CNRS - Université de Poitiers - Université de Tours, France; Nicolas Vibert, Centre de Recherches sur la Cognition et l'Apprentissage (CeRCA), CNRS, Université de Poitiers, Université de Tours, France

**How does structured notes in the form of a graphic organizer influence students' achievement?**

Tiphaine Colliot, CeRCA UMR7295 Université de poitiers, France; Karima Mekki, Université de Poitiers, France

**Reading accuracy threshold on reading comprehension**

NATALIA CALVO BLÁZQUEZ, Universidad de Salamanca, Spain; J. Ricardo García Pérez, Universidad de Salamanca, Spain; Emilio Sánchez, Facultad de Psicología, Spain

**The role of sources in single text comprehension.**

Javier Rosales, University of Salamanca, Spain; María García Serrano, University of Salamanca, Spain; J. Ricardo García Pérez, Universidad de Salamanca, Spain

**Home environment factors and children's and adolescents' critical reading skills: A systematic review**

María Psyridou, University of Jyväskylä, Finland; Jenni Ruotsalainen, University of Jyväskylä, Finland; Mari Manu, University of Jyväskylä, Finland; Elizabeth Balch-Crystal, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Leena Paakkari, University of Jyväskylä, Faculty of Sport and Health Sciences, Finland; Minna Torppa, University of Jyväskylä, Finland

**Comprehension of Multiple Digital Texts: a longitudinal study in third-grade primary school children**

Anouk Bakker, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Aurora Troncoso-Ruiz, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Liesbeth Crajé-Tilanus, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Naomi Bergen, van, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Marco Ven, van de, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Jos Keuning, Cito Institute for Educational Measurement, Netherlands; Eliane Segers, Behavioural Science Institute, Radboud University Nijmegen, Netherlands

**In the mind of an easy-to-read author – an explorative case study of metalinguistic reasoning**

Åsa Wengelin, University of Gothenburg, Sweden



Session S: 20

Time: 12:00-13:30

Location: UOM\_GYM

**ROUNDTABLE: PROBLEM SOLVING AND CHALLENGE-BASED LEARNING****Chair**

Carmela Aprea, University of Mannheim, Germany

**Assessing the skill to solve technical problems in everyday life**

Marcus Schrickel, DIPF | Leibniz Institute for Research and Information in Education, Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Jennifer Stemmann, Pädagogische Hochschule Freiburg, Germany

**Assessing Collaborative Problem-Solving Skills in Higher Education: Evidence from a Case Study**

Anna Trikoili, Technical University of Munich, Germany; Despoina Georgiou, Utrecht University, Netherlands; Daniel Pittich, Technische Universität München (TUM), Germany

**Challenge-Based Learning in Educational Sciences: Mapping Students and Lecturers' Experiences**

Despoina Georgiou, Utrecht University, Netherlands; Dimitra Mousa, Utrecht University, Netherlands

Session S: 21

Time: 12:00-13:30

Location: UOM\_R08

**WORKSHOP: DEVELOPING QUESTIONING LITERACY WITH THE QUESTION COMPASS****Developing Questioning Literacy with the Question Compass**

H.J.M. Stokhof, HAN University of Applied Sciences, Netherlands; Helma Oolbekkink- Marchand, HAN University Nijmegen, Netherlands; Jeroen Van der Linden, HAN University Nijmegen, Netherlands

**ANNOTATIONS:**

THIS SESSION WILL TAKE PLACE IN UOM\_W INSTEAD OF UOM\_R08.

Session S: 22

Time: 12:00-13:30

Location: UOM\_A11

**ICT DEMONSTRATION: SMART CAT - A SMART CONFIGURABLE SOFTWARE TOOL FOR ASSESSMENT****Smart CAT - A Smart Configurable Software Tool for Assessment**

Konstantinos Georgiadis, Open Universiteit, Department of Online Learning and Instruction., Netherlands

Session T: 1

Time: 14:45-16:15

Location: AUTH\_DC2

**INVITED SYMPOSIUM: INSTRUCTIONAL PRACTICES FOR ENHANCING LITERACY SKILLS ACROSS EDUCATIONAL CONTEXTS****Chair**

Liana Konstantinidou, Zurich University of Applied Sciences, Switzerland

**Discussant**

Ioannis Dimakos, University of Patras, Greece

**Effect of feedback on the processes and modeling instruction on text quality and literacy behaviors**

Elke Van Steendam, KU Leuven, Belgium; Gert Rijlaarsdam, University of Amsterdam, Netherlands; Nina Vandermeulen, Umeå University, Sweden; Marije Lesterhuis, UMC Utrecht, Netherlands; Sven De Maeyer, Antwerp University, Belgium

**Scenario-based literacy education: effects of integrated reading and writing tasks on text quality**

CURTIS GAUTSCHI, Zurich University of Applied Sciences (ZHAW), Switzerland; Karin Madlener-Charpentier, Zurich University of Applied Sciences (ZHAW), Switzerland; Elsa Liste Lamas, Zurich University of Applied Sciences (ZHAW), Switzerland; Joachim Hoefele, Zurich University of Applied Sciences (ZHAW), Switzerland; Liana Konstantinidou, Zurich University of Applied Sciences, Switzerland

**How to improve argumentative synthesis writing using guides and instructional rubrics**

Lidia Casado Ledesma, Universidad Autónoma de Madrid, Spain; Isabel Cuevas, Autonoma University of Madrid, Spain; Mar Mateos, Universidad Autónoma de Madrid, Spain; Elena Martín, Universidad Autonoma de Madrid, Spain; Miriam Granado Peinado, Autonomous University of Madrid, Spain; María Luna, Universidad a Distancia de Madrid (UDIMA), Spain; Juan Antonio Nuñez, Universidad Autonoma de Madrid, Spain; Ricardo Olmos, Universidad Autonoma de Madrid, Spain

**The Both/And of Research into Synthesis Writing**

Nancy Nelson, Louisiana State University, United States

**ANNOTATIONS:**

SIG 12 INVITED SYMPOSIUM

Session T: 2

Time: 14:45-16:15

Location: AUTH\_DC3

**INVITED SYMPOSIUM: EDUCATION: SOCIETAL CHANGE, HOPE AND THE STATE OF THE DISCIPLINE****Chair**

Vivienne Baumfield, University of Exeter, United Kingdom

**Discussant**

Dominic Wyse, Institute of Education, IOE, UCL's Faculty of Education and Society., United Kingdom

**Education: Societal Change, Hope and the State of the Discipline**

Vivienne Baumfield, University of Exeter, United Kingdom

**Exploration of In/Equalities Shown in Statistical Data of Academic Staffing in Higher Education**

Joanne O'Keefe, Queen's University, Belfast, United Kingdom; Dina Zoe Belluigi, Queens University Belfast, United Kingdom; Jason Arday, University of Glasgow, United Kingdom

**The State of the Discipline: findings from a survey of education researchers**

Jess Pilgrim-Brown, University of Warwick/University of Bristol, United Kingdom; Tom Perry, University of Warwick, United Kingdom; Rebecca Morris, University of Warwick, United Kingdom; Emma Smith, University of Warwick, United Kingdom

## ANNOTATIONS:

INVITED SYMPOSIUM OF THE BRITISH EDUCATION RESEARCH ASSOCIATION (BERA)

Session T: 3

Time: 14:45-16:15

Location: UOM\_CH

**SYMPOSIUM: PROMOTING SELF-REGULATED LEARNING: THE EFFECT OF TEACHERS' COMPETENCES AND TEACHING PRACTICES****Chair**

Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

**Discussant**

Franziska Perels, Saarland University, Germany

**Using video-based modelling examples to foster pre-service teachers' SRL competences**

Antonia Fischer, Institute for School Development Research, TU Dortmund University, Germany; Charlotte Dignath, TU Dortmund University, Germany

**The impact of an in-service teacher professionalization on teachers' SRL competences**

Lies Backers, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Teachers' direct and indirect promotion of self-regulated learning in secondary school**

Joachim Wirth, Ruhr-University Bochum, Germany; Xenia-Lea Weber, Ruhr-University Bochum, Germany; Jens Fleischer, Ruhr-University Bochum, Germany; Ferdinand Stebner, University of Osnabrück, Germany; Corinna Schuster, Ruhr University Bochum, Germany; Detlev Leutner, University of Duisburg-Essen, Germany

**Teachers' motivation for self-regulated learning: Relations to students' motivation**

Johannes Jud, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Carmen Nadja Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland

Session T: 4

Time: 14:45-16:15

Location: AUTH\_DC1

**SYMPOSIUM: HOW TO OPTIMIZE METACOGNITIVE MONITORING AND JUDGMENT ACCURACY****Chairs**

Rebecca Krebs, Ruhr-University Bochum, Germany; Linda Froese, Ruhr University Bochum, Germany

**Organisers**

Rebecca Krebs, Ruhr-University Bochum, Germany; Linda Froese, Ruhr University Bochum, Germany

**Discussant**

Lucia Mason, University of Padova, Italy

**Can students monitor motivational and emotional strategies through self-talk? An intervention study.**

Alazne Fernández Ortube, University of Deusto, Spain; Ernesto Panadero, Universidad Deusto, Spain; Charlotte Dignath, German Institute for International Educational Research (DIPF), Germany; Lucía Barrenetxea-Mínguez, University of Deusto, Spain; Jesús Marauri, Universidad de Deusto, Spain

**Self-assessment of diagrams to increase monitoring accuracy in reading comprehension**

Héctor J. Pijeira-Díaz, Maastricht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Faisal Rehman Channa, University of Jyväskylä, Finland; Anique de Bruin, Maastricht University, Netherlands

**How to enhance learners' accuracy in evaluating self-generated examples?**

Linda Froese, Ruhr University Bochum, Germany; Julian Roelle, Ruhr University Bochum, Germany

**How to foster self-assessment accuracy and regulation through rubrics**

Rebecca Krebs, Ruhr-University Bochum, Germany; Julia Waldeyer, Ruhr-University Bochum, Germany; Björn Rothstein, Ruhr University Bochum, Germany; Julian Roelle, Ruhr University Bochum, Germany

Session T: 5

Time: 14:45-16:15

Location: UOM\_A03

**SYMPOSIUM: STEREOTYPES AND STEREOTYPE THREAT IN THE CLASSROOM: EFFECTS AND INTERVENTIONS****Chairs**

Cristina Stringher, Istituto Nazionale per la Valutazione del Sistema Educativo di Istruzione e di Formazione (INVALSI), Italy; Justine Stang-Rabrig, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Organiser**

Justine Stang-Rabrig, TU Dortmund University, Germany

**Discussant**

Johannes Keller, Ulm University Institute of Psychology and Education, Germany

**How stereotype awareness and stereotype belief impact test anxiety and self-efficacy in math**

Nadia Leroy, Université Grenoble Alpes, France; Sylvain Max, Burgundy School of Business, France; Pascal Pansu, Université Grenoble Alpes, France

**Stereotype Threat Effects on Vocabulary Learning and Stress Response**

Justine Stang-Rabrig, TU Dortmund University, Germany; Sabrina König, TU Dortmund University, Germany; Oliver Wolf, Ruhr University Bochum, Bochum, Germany; Nele McElvany, TU Dortmund University, Germany

**Social Identity Threat is Related to Ethnic Minority Adolescents' Social Approach Motivation**

Laura Froehlich, FernUniversität in Hagen, Germany; Nathalie Bick, FernUniversität in Hagen, Germany; Jana Nikitin, University of Vienna, Austria; Sarah E. Martiny, UiT The Arctic University of Norway, Norway

**How does stereotype threat work and how to buffer its effects on minority achievement?**

Karen PHALET, KU LEUVEN, Belgium; Gülseli Baysu, Queen's University Belfast, United Kingdom

Session T: 6

Time: 14:45-16:15

Location: UOM\_A02

**SYMPOSIUM: FAMILY-BASED INTERVENTIONS: INCREASING DEVELOPMENTAL AND EDUCATIONAL CHANCES OF CHILDREN AT-RISK?****Chair**

Isabelle Kalkusch, University of Teacher Education of Special Needs, Switzerland

**Organiser**

Isabelle Kalkusch, University of Teacher Education of Special Needs, Switzerland

**Discussant**

Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland, Switzerland

**Effects of two staffing models in the home visiting program Pro Kind at age 7**

Marie Lisanne Schepan, Leibniz-Institute for Prevention Research and Epidemiology - BIPS, Germany; Malte Sandner, Technical University Nuernberg, Germany; Sören Kliem, Department of Social Work, University of Applied Sciences Jena, Germany; Tilman Brand, Leibniz Institute for Prevention Research and Epidemiology – BIPS, Germany

**Early Childhood Family-Based Intervention: Effects on School Relevant Outcomes in Primary School?**

Isabelle Kalkusch, University of Teacher Education of Special Needs, Switzerland; Alex Neuhauser, University of Applied Sciences of Special Needs Education, Switzerland; Patsawee Rodcharoen, University of Teacher Education in Special Needs Zurich, Switzerland, Switzerland; Simone Schaub, University of Teacher Education in Special Needs, Switzerland; Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland, Switzerland; Erich Ramseier, Bern University of Teacher Education (i. R.), Switzerland; Andrea Lanfranchi, University of Applied Sciences of Special Needs Education, Switzerland

**Reducing behavioral problems: A family and school-based intervention**

Markus Neuenschwander, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Ilona Rösti, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Vanessa Prieth, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland; Alafia Zavary, University of Applied Sciences and Arts Northwestern Switzerland FHNW, Switzerland

**Parental involvement interventions for children with special educational needs: A systematic review**

Hannah Hamid, UCL- Institute of Education, United Kingdom; Zachary Walker, UCL- Institute of Education, United Kingdom; Jo Van Herwegen, UCL Institute of Education, United Kingdom

Session T: 7

Time: 14:45-16:15

Location: AUTH\_T102

**SINGLE PAPER: VIDEO-BASED LEARNING****Chair**

Charalambos Charalambous, University of Cyprus, Cyprus

**Cognitive and Attentive Measures of Intra-individual Variability in Video-based Learning**

Kshitij Sharma, Norwegian University of Science and Technology (NTNU), Norway

**Social Cues in Educational Videos – The Importance of Moderating Variables**

Maik Beege, University of Education Freiburg, Germany

**Do learners' benefit when taking notes from instructional videos and if how?**

Anke Wischgoll, TU Dortmund University, Germany; Monika Post, TU Dortmund University, Germany

**Prompts and Engagement during an Online Video Lecture: An Experimental Field Study**

Markus H. Hefter, Bielefeld University, Germany; Veit Kubik, University of Würzburg, Germany; Kirsten Berthold, University of Bielefeld, Germany

Session T: 8

Time: 14:45-16:15

Location: UOM\_A06

**SINGLE PAPER: CRITICAL THINKING, EPISTEMIC BELIEFS AND KNOWLEDGE CONSTRUCTION****Chair**

Vasilias Christidou, Aristotle University of Thessaloniki, Greece

**The relative influence of epistemic aims and epistemic perspectives on reasoning processes**  
Michael Weinstock, Ben-Gurion University of the Negev, Israel; Netta Le Guennec, Ben Gurion University of Negev, Israel

**Resolving Disagreements Between Experts through Identifying Questionable Research Practices**  
Clark Chinn, Rutgers University, United States; Toshio Mochizuki, Senshu University, Japan; Hiroki Oura, Tokyo University of Science, Japan; Etsuji Yamaguchi, Kobe University, Japan

**Epistemic Understanding as Basis for Evaluating Change in Scientific Conclusions Regarding COVID-19**

Michael Weinstock, Ben-Gurion University of the Negev, Israel; Sarit Barzilai, University of Haifa, Israel; Eva Thomm, University of Erfurt, Germany; Nadav Davidovitch, Ben-Gurion University of the Negev, Israel

**Factorial validity revised: The structure of epistemic beliefs and perspectives across instruments**  
Martin Greisel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

Session T: 9

Time: 14:45-16:15

Location: UOM\_R09

**SINGLE PAPER: ENGLISH AS A FOREIGN LANGUAGE****Chair**

Jeroen Lavrijsen, KU Leuven, Belgium

**Relationships between motivation and anxiety in adult EFL learners**

Merih Welay, University of Szeged, Hungary; Marianne Nikolov, University of Pécs, Hungary

**Primary school EFL teachers implementing an ambitious 21st century skills curriculum**

Tony Burner, University of South-Eastern Norway, Norway

**Using educational technology in adult ESOL provision: a case study**

Pirjo Mottus, University of Tartu, Estonia

Session T: 10

Time: 14:45-16:15

Location: UOM\_A05

**SINGLE PAPER: GENDER ISSUES IN HIGHER EDUCATION AND LIFELONG LEARNING****Chair**

Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany

**Entrepreneurship Education in Higher Education: Preliminary insights from the GUESSS survey**

Athanasia Loukidou, University of Macedonia, Greece; Stavroula Laspita, University of Western Macedonia, Greece; KATERINA SARRI, UNIVERSITY OF MACEDONIA, Greece

**The work of language. Explorations of institutional responses to diversity in Swedish universities.**

Asia Della Rosa, Jönköping University, Sweden; Sangeeta Bagga-Gupta, Jönköping University, Sweden

**Sexism in Higher Education: An experimental study to assess gender stereotypes using vignettes**

Ana María Espinoza Catalán, Universidad de O'Higgins, Chile; Natalia Albornoz, Universidad de O'Higgins, Chile

**Lifelong learning and late working life: Risks and Inequalities across four European countries**

Nehle Penning, TU Dortmund University, Germany; Rachel Crossdale, The University of Sheffield, United Kingdom; Monika Reichert, TU Dortmund University, Germany

Session T: 11

Time: 14:45-16:15

Location: UOM\_A04

**SINGLE PAPER: COMPUTER-SUPPORTED SELF- AND CO-REGULATED LEARNING****Chair**

Franziska Zellweger, Zurich University of Teacher Education, Switzerland

**Learners engagement in shared regulation between the learner and the technology**

Rianne Kooi, Radboud University Nijmegen, Netherlands; Carolien Knoop-van Campen, Radboud University, Netherlands; Eliane Segers, Radboud University, Netherlands; Inge Molenaar, Radboud University, Netherlands

**Fostering Self-Regulated Learning through a Digital Tool - A Mixed Methods Study**

Mathias Mejeh, University of Bern, Switzerland; Livia Sarbach, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Supporting regulated learning in collaboration in higher education**

Suijing Yang, The University of Queensland, Australia; Jason Lodge, The University of Queensland, Australia; Cam Brooks, The University of Queensland, Australia; Jingyang Ai, University of the West of Scotland, United Kingdom

**Understanding social emotions and their regulation in online CSCL**

Sabrine Hassane, Open University of the Netherlands, Netherlands; Jorrick Beckers, Open University of the Netherlands, Netherlands; Karel Kreijns, Open University of the Netherlands, Netherlands

Session T: 12

Time: 14:45-16:15

Location: AUTH\_TE1

**SINGLE PAPER: TEACHERS' COLLABORATIVE PRACTICES****Chair**

Heli Aomets, Tallinn University, Estonia

**Teachers' assessments of their collaboration practices**

Katrin Saks, University of Tartu, Estonia; Pihel Hunt, University of Tartu, Estonia; Äli Leijen, University of Tartu, Estonia; Liina Lepp, University of Tartu, Estonia

**Evaluating the impact of a pedagogical training program offered to awarded university teachers**

Radu Balan, West University of Timisoara, Romania; Purtan Nadia, West University of Timisoara, Romania; Veilbor Mladenovici, West University of Timisoara, Romania; Marian Ilie, West University of Timisoara, Romania

**Exploring faculty members' diverse perspectives on interdisciplinary higher education**

Xiaoqi Feng, Aalto University, Finland

**Peer Assisted Study Scheme (PASS) and its potential benefits for participants and facilitators**

William Carey, Lund University / Loughborough University, Sweden; Joakim Malm, Lund University, Sweden; Lise-Lotte Mörner, Lund University, Sweden

Session T: 13

Time: 14:45-16:15

Location: UOM\_CR

**SINGLE PAPER: FRIENDSHIPS, SOCIAL INTERACTION AND SOCIAL (IN)EXCLUSION****Chair**

Daniela Nussbaumer, University of Applied Sciences of Special Needs Education, Switzerland

**Friendships in inclusive classrooms – network analysis from teachers' and students' perspectives**

Katharina-Theresa Lindner, University of Vienna, Austria

**Students' friendships - The role of gender & self-perceived social inclusion in inclusive classrooms**

Ariana Garrote, University of Applied Sciences and Arts Northwestern Switzerland, School of Education, Switzerland; Carmen Zurbriggen, University of Fribourg, Switzerland; Susanne Schwab, University of Vienna, Austria

**Improving students' attitudes towards peers with special needs: Results from an intervention study**

Marwin Felix Loeper, Paderborn University, Germany; Gamze Görel, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

**University students' behavioural intentions towards social exclusion**

Mareike Brehmer, University of Agder, Norway; Jennifer Meyer, Leibniz-Institute for Science and Mathematics Education, Germany

Session T: 14

Time: 14:45-16:15

Location: UOM\_A07

**SINGLE PAPER: SIMULATION-BASED LEARNING****Chair**

Chiel van der Veen, Vrije Universiteit Amsterdam, Netherlands

**Authentic tasks and Scaffolding in Higher Education: a Meta-Analysis on Effects of Simulations**

Olga Chernikova, Ludwig Maximilian University, Germany; Doris Holzberger, Technical University of Munich (TUM) &amp; ZIB (Centre for International Student Assessment), Germany; Nicole Heitzmann, Ludwig-Maximilians-Universität (LMU), Germany; Matthias Stadler, Ludwig-Maximilians-Universität (LMU), Germany; Tina Seidel, Technische Universität München, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Can simulation-based training shape professional identity in addition to competencies?**

Pauliina Rikala, University of Jyväskylä, Finland; Minna Ruoronen, University of Jyväskylä, Finland; Kaisa Silvennoinen, University of Jyväskylä, Finland; Aaron Peltoniemi, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland

**Social embedding in virtual learning simulations and its relation to the quality of task solution**

Anke Braunstein, University of Mannheim, Germany; Viola Deutscher, University of Mannheim, Germany

**Task perception, task performance, and learning outcomes in simulation-based inquiry learning**

Tomi Jaakkola, Tampere University, Finland; Koen Veermans, University of Turku, Department of Teacher Education, Finland

Session T: 15

Time: 14:45-16:15

Location: AUTH\_T202

**SINGLE PAPER: DASHBOARDS, LEARNING ANALYTICS AND EDUCATIONAL TECHNOLOGIES****Chair**

Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France

**Students Value Alignments and Tensions with Learning Analytics**

Egle Gedrimiene, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland

**The use and misuse of learning analytics dashboards: the case of UK primary schools teachers**

Manolis Mavrikis, UCL Knowledge Lab, United Kingdom; Eirini Geraniou, University College London, Institute of Education, United Kingdom

**Automated Short Answer Grading using BERT on German datasets**

Sukanya Nath, Swiss Distance University of Applied Sciences (FFHS), Switzerland; Behnam Parsaeifard, Swiss Distance University of Applied Sciences (FFHS), Switzerland; Egon Werlen, Swiss Distance University of Applied Sciences (FFHS), Switzerland

**Primary school teachers' skills to perceive, interpret and make decisions based on dashboards**

Rani Van Schoors, KU LEUVEN, Belgium; Stefanie Vanbecelaere, KU Leuven, Belgium; Line Deprez, KU LEUVEN, Belgium; Antje Demulder, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium

Session T: 16

Time: 14:45-16:15

Location: UOM\_A11

**SINGLE PAPER: DEVELOPING WRITING SKILLS AND COMPETENCIES****Chair**

BENGU CILALI, Bilkent University, Turkiye

**Developing plurilingual writing competence in collaborative and cooperative settings**

Olivia Rütli-Joy, St.Gallen University of Teacher Education, Switzerland; Valentin Unger, St.Gallen University of Teacher Education, Switzerland

**Developing revision skills: Studying real-time writing processes to inform instruction practices**

Victoria Johansson, Kristianstad University, Sweden; Åsa Wengelin, University of Gothenburg, Sweden

**A study on the impact of explicit instruction and collaborative writing on argumentative writing**

Yana Landrieu, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium

**Approaches to thesis writing and writer profiles**

Laura Mendoza, University of Helsinki, Finland; Sari Lindblom, University of Helsinki, Finland; Tuula Lehtonen, University of Helsinki, Finland; Heidi Hyytinen, University of Helsinki, Finland

Session T: 17

Time: 14:45-16:15

Location: AUTH\_TE2

**SINGLE PAPER: DIGITAL LITERACY AND LEARNING IN PRIMARY AND SECONDARY EDUCATION****Chair**

Kimberly Norrman, Uppsala University EDU, Sweden

**Digital natives = digital experts? Designing a novel instrument to measure digital competence**  
Sümeyra Tural, Leibniz Institute for Educational Trajectories, Germany; Mariann Schwaß, Leibniz Institute for Educational Trajectories, Germany

**Fostering text integration in primary education: What type of instruction should teachers provide?**

Raquel Cerdan, University of Valencia, Spain; Fátima Rahim, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Ignacio Máñez, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Jason L.G. Braasch, Georgia State University, United States

**Digital multimodal message quality and features that affect it: an exploratory study**

Ilias Karasavvidis, University of Thessaly, Greece

**Student groups evaluating their group work behaviour and learning of critical online reading**

Miika Marttunen, University of Jyväskylä, Finland; Minna Lakkala, University of Helsinki, Finland; Timo Salminen, University of Jyväskylä, Finland; Liisa Ilomäki, University of Helsinki, Finland

Session T: 18

Time: 14:45-16:15

Location: UOM\_A13

**SINGLE PAPER: EPISTEMIC BELIEFS AND EMOTIONS****Chair**

Kirsti Lonka, University of Helsinki, Finland

**Epistemic development during the three first undergraduate years in five academic professions**

Kirsti Lonka, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland

**The Retest-Stability of Epistemic Beliefs about the Certainty of Knowledge in Science**

Peter Edelsbrunner, ETH Zurich, Switzerland

**Modeling learners' epistemic emotions and engagement in a university live-streaming classroom**

Tonny Menglun Kuo, Center for Teaching and Learning Development, National Tsing Hua University, Taiwan, Taiwan; Tzung-Jin Lin, School of Learning Informatics, Program of Learning Sciences, National Taiwan Normal University, Taiwan

**Feeling confident about your wrong answer: The role of feedback in the arousal of epistemic emotions**

Katerina Nerantzaki, Aristotle University of Thessaloniki, Greece; Paraskevi Stergiadou, Aristotle University of Thessaloniki, Greece; Panayiota Metallidou, Aristotle University of Thessaloniki, Greece

Session T: 19

Time: 14:45-16:15

Location: UOM\_R05

**SINGLE PAPER: ASSESSMENT AND TOOL DEVELOPMENT IN EARLY CHILDHOOD EDUCATION****Chair**

Avi Kaplan, Temple University, United States

**The East Asia-Pacific Early Child Development Scales: A Longitudinal Validation Study in China**

Stephanie Wing Yan Chan, The University of Hong Kong, Hong Kong; Yufen Su, The University of Hong Kong, Hong Kong; Nirmala Rao, The University of Hong Kong, Hong Kong

**Cross-cultural measurement invariance of the early childhood development assessment tool FREDI 0-3**

Nadine Doennecke, University of Hildesheim, Institute of Educational Science, Germany; Janin Brandenburg, TU Dortmund University, Germany; Claudia Maehler, University of Hildesheim, Germany

**Test-fairness assessing executive functions in preschoolers from Germany and Hongkong**

Claudia Maehler, University of Hildesheim, Germany; Katharina Schirmbeck, University of Hildesheim, Germany; Stephanie Wing Yan Chan, The University of Hong Kong, Hong Kong; Nirmala Rao, The University of Hong Kong, Hong Kong

**Digital Competence in Kindergarten: Adopting the DigCompEduSAT for Kindergarten Teachers**

Attila Rausch, ELTE Eötvös Loránd University, Budapest, Hungary

Session T: 20

Time: 14:45-16:15

Location: UOM\_R08

**SINGLE PAPER: INFORMAL LIFELONG LEARNING****Chair**

Kati Vasalampi, University of Jyväskylä, Finland

**Practices of technology-enhanced informal workplace learning in knowledge work**

Anne Karhapää, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Johanna Pöysä-Tarhonen, University of Jyväskylä, Finland

**Pop Bands' Practice: Goal Setting, Monitoring and Feedback Seeking**

Simon Schmidt, Universität Regensburg, Germany; Helen Jossberger, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany

**The Relationships between Job Insecurity and Informal Learning in Finance – A survey study**

Patrick Beer, University of Regensburg, Germany; Sandra Bauhofer, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany

**Factors related to Teachers' innovative behavior: a multilevel meta-analysis**

Stefan Robbers, Open University Netherlands, Netherlands; Arnoud Evers, Open Universiteit Nederland, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands

Session T: 21

Time: 14:45-16:15

Location: AUTH\_T002

**SINGLE PAPER: CONCEPTUAL CHANGE AND TEACHING****Chair**

Jan-Mikael Rybicki, Aalto University, Finland

**Intent and relationality in middle leading practices of facilitation, mentoring and coaching**

Christine Edwards-Groves, Griffith University, Australia; Catherine Attard, University of Western Sydney, Australia; Sharon Tindall-Ford, University of Wollongong, Australia; Peter Grootenboer, Griffith University, Australia

**Implementing conceptual change principles for mathematics instruction: the case of fraction division**

Ioanna Koptsi, University of Ioannina, Greece; Konstantinos Christou, Aristotle University of Thessaloniki, Greece; Xenia Vamvakoussi, University of Ioannina, Greece

**An intervention with erroneous examples to address misconceptions on equations and inequalities**

Eleni Karagiannidou, Aristotle University of Thessaloniki, Greece; Courtney Pollack, Harvard University, United States; Konstantinos Christou, Aristotle University of Thessaloniki, Greece

Session T: 22

Time: 14:45-16:15

Location: UOM\_A09

**ICT DEMONSTRATION: EFFORT TRACKING: USING TEACHER AND STUDENT RATINGS OF STUDENTS' EFFORT IN GOAL-SETTING CONVERSATIONS****Effort Tracking: Using Teacher and Student Ratings of Students' Effort in Goal-Setting Conversations**

Robin Nagy, UNSW, Australia

Session T: 23

Time: 14:45-16:15

Location: UOM\_A10

**ICT DEMONSTRATION: MAKING SPAGEO CITY, THE INTERACTIVE DESIGN OF A VIRTUAL ENVIRONMENT FOR TRAINING SPATIAL SKILLS****Making SPAGEO City, the interactive design of a virtual environment for training spatial skills**

Fatou-Maty Diouf, University of Geneva, Switzerland; Sabrina Matri, University of Geneva, Switzerland; Jean-Luc Dorier, University of Geneva, Switzerland



Session U: 1

Time: 16:30-18:00

Location: UOM\_CH

**INVITED SYMPOSIUM: MORE THAN JUST NOISE? NEW INSIGHTS ON HETEROGENEITY IN STUDENTS' PERCEPTIONS OF INSTRUCTION****Chair**

Lisa Bardach, University of Tübingen, Germany

**Organisers**

Lisa Bardach, University of Tübingen, Germany; Sebastian Röhl, University of Tübingen, Germany

**Discussant**

Jonathan Schweig, RAND Corporation, United States

**Heterogeneity in students' perception of instruction is a marker of non-adaptive teaching**

Sebastian Röhl, University of Tübingen, Germany; Lisa Bardach, University of Tübingen, Germany

**Differentiated instruction from students' perspective in mathematics lessons**

Emilie Prast, Leiden University, Netherlands; Marieke van Geel, University of Twente, Netherlands; Trynke Keuning, Hogeschool KPZ, Netherlands; Hans Luyten, University of Twente, Netherlands

**Heterogeneity in instructional quality perceptions as indicator of teachers' diagnostic competence?**

Marko Lüftenegger, University of Vienna, Austria; Claudia Neuendorf, Hector Institute for Education Research and Psychology, Tübingen University, Germany; Joy Muth, University of Vienna, Austria; Kou Murayama, University of Tübingen, Germany

**Teacher involvement and help seeking: An intraindividual approach to within-group heterogeneity**

Kyle Davison, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom; Kathy Sylva, University of Oxford, United Kingdom

ANNOTATIONS:  
EFG INVITED SYMPOSIUM

Session U: 2

Time: 16:30-18:00

Location: AUTH\_DC1

**SYMPOSIUM: MULTIMODAL APPROACHES WITH MEASURES OF PHYSIOLOGICAL AROUSAL IN EDUCATION****Chair**

Inge Molenaar, Radboud University Nijmegen, Netherlands

**Organiser**

Anne Horvers, Radboud University Nijmegen, Netherlands

**Discussant**

Lars-Erik Malmberg, University of Oxford, United Kingdom

**Analyzing Multimodal Data to Understand Trainees' Regulation Strategies in Simulation Scenarios**

Matthew Moreno, McGill University, Canada; Lucia Patino, McGill University, Canada; Keerat Grewal, McGill University, Canada; Sayed Azher, McGill University, Canada; Jason Harley, McGill University, Canada

**How students' socio-emotional interaction profiles emerge in collaborative learning**

Tiina Susanna Törmänen, University of Oulu, Finland; Mohammed Saqr, University of Eastern Finland, Finland; Hanna Jarvenoja, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

**Physiological Synchrony in Interpersonal Agency: A Case Study on Collaborative Problem Solving**

Reito Visajaani Salonen, Helsinki Institute for Social Sciences and Humanities, University of Helsinki, Finland; Eeva Haataja, University of Helsinki, Finland; Esther Chan, University of Melbourne, Australia; Chase Sherwell, University of Queensland, Australia; Ross Cunningham, University of Queensland, Australia

**Multimodal data streams to explore emotional responses to immediate feedback in young learners**

Anne Horvers, Radboud University Nijmegen, Netherlands; Ard Lazonder, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Tibor Bosse, Radboud University Nijmegen, Behavioural Science Institute, Netherlands

Session U: 3

Time: 16:30-18:00

Location: UOM\_CR

**SYMPOSIUM: EDUCATING FOR DEMOCRACY. TEACHING AND LEARNING DOMAIN-SPECIFIC REASONING TO DISCUSS SOCIAL ISSUES****Chair**

Carla Van Boxtel, University of Amsterdam, Netherlands

**Organiser**

Geerte Savenije, University of Amsterdam, Netherlands

**Discussant**

Gerhard Stoel, Radboud University, Nijmegen, Netherlands

**Design principles and educative materials that can promote students' social scientific reasoning**

Thomas Klijnstra, University of Amsterdam, Netherlands

**Teaching strategies for value-loaded critical reasoning in philosophical dialogues**

Geerte Savenije, University of Amsterdam, Netherlands; Floor Rombout, Utrecht University, Netherlands

**Advancing students' reasoning about democracy: A project on social and political trust**

Maria Jansson, Örebro University, Sweden; Johan Sandahl, Stockholm University, Sweden; Patrik Johansson, Department of Teaching and Learning, Stockholm university, Sweden

**The relationship between students' reasoning about historical and social issues in inquiry tasks**

Fien Depaepe, KU Leuven, Belgium; Karel Van Nieuwenhuysse, KU Leuven, Belgium; Marjolein Wilke, KU Leuven, Belgium

Session U: 4

Time: 16:30-18:00

Location: UOM\_A02

**SYMPOSIUM: INTERNAL AND EXTERNAL INFLUENCES THAT PROMOTE INTEREST DEVELOPMENT DURING HIGHER EDUCATION****Chairs**

Paul O'Keefe, Yale-NUS College, Singapore; Kathleen M Quinlan, University of Kent, United Kingdom

**Discussant**

K. Ann Renninger, Swarthmore College, United States

**Boosting STEM Interest Among Liberal Arts Undergraduates with a Brief Growth-Mindset Intervention**

Paul O'Keefe, Yale-NUS College, Singapore; E. J. Horberg, Yale-NUS College, Singapore; Carol Dweck, Stanford University, United States; Gregory Walton, Stanford University, United States

**Interventions to Promote Interest in Introductory Chemistry and Longer-Term Persistence in STEM**

Judith Harackiewicz, University of Wisconsin-Madison, United States; Michael Asher, University of Wisconsin-Madison, United States; Cameron Hecht, The University of Texas at Austin, United States; Patrick Beymer, University of Wisconsin - Madison, United States

**Promoting Student Interest Via Culturally Sensitive Curricula in Higher and Professional Education**

Kathleen M Quinlan, University of Kent, United Kingdom; Dave Thomas, University of Kent, United Kingdom; Annette Hayton, University of Bath, United Kingdom; Jo Astley, University of Derby, United Kingdom; Leda Blackwood, University of Bath, United Kingdom; Fatmata Daramy, The University of Law, United Kingdom; Morag Duffin, The University of Law, United Kingdom; Muhammad Arslan Haider, University of Kent, United Kingdom; Deborah Husbands, University of Westminster, United Kingdom; Helen Kay, Sheffield Hallam University, United Kingdom; Mary Mosoeunyane, Buckinghamshire New University, United Kingdom; Ian Turner, University of Derby, United Kingdom; Clare Walsh, Sheffield Hallam University, United Kingdom; Dan West, University of Derby, United Kingdom

**The Role of Implicit Theories about Interest when Regulating Motivation**

Carol Sansone, University of Utah, United States; Yun Tang, University of Utah, United States; Jasmine Norman, University of North Carolina, Wilmington, United States; Dustin Thoman, San Diego State University, United States

Session U: 5

Time: 16:30-18:00

Location: UOM\_R08

**SINGLE PAPER: PEER INTERACTION AND FEEDBACK****Chair**

Erdem Onan, Maastricht University, Netherlands

**Effects of a comparative assessment method on how students use peer feedback for revision**

Janneke Stuulen, University Utrecht, Netherlands; Renske Bouwer, Utrecht University, Netherlands; Huub van den Bergh, Utrecht University, Netherlands

**Joint knowledge construction during feedback interaction in Reciprocal Peer Observation**

Ester Miquel, Universitat Autònoma de Barcelona, Spain; Marta Flores, UAB Universitat Autònoma de Barcelona, Spain; Andy Morodo, Universitat Autònoma de Barcelona, Spain; David Duran Gisbert, Universitat Autònoma de Barcelona, Spain

**Providing Agency to Students in Peer Feedback Settings: The Free-Selection Approach**

Pantelis Papadopoulos, University of Twente, Netherlands; Alieke van Dijk, University of Twente, Netherlands; Natasha Dmoshinskaia, University of Twente, Netherlands; Hannie Gijlers, University of Twente, Netherlands

**Teachers' peer feedback in basic education**

Dolors Forteza Forteza, Universitat de les Illes Balears, Spain; Francisca Moreno Tallón, Universitat de les Illes Balears, Spain; Joana Llabrés Ferrer, Universitat de les Illes Balears, Spain; Begoña De la Iglesia Mayol, Universitat de les Illes Balears, Spain

Session U: 6

Time: 16:30-18:00

Location: AUTH\_TE1

**SINGLE PAPER: INTEREST AND BOREDOM IN UNIVERSITY STUDENTS****Chair**

Alberto Nagle Cajés, Independent Consultant, Uruguay

**Effect of Interest Fit on Academic Success in Higher Education: Meta-Analysis and Systematic Review**

Nicky de Vries, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Mariette Huizinga, Vrije Universiteit Amsterdam, Netherlands

**Does the situation matter for learning? Effect of mind wandering and interest in multimedia learning**

Perche Louise, Paris Nanterre University, France; Yennek Nora, Paris Nanterre University, France; Leger Laure, Paris Nanterre University, France

**Watching the paint dry in the classroom. Evolution and predictors of boredom in bachelor students**

Velibor Mladenovici, West University of Timisoara, Romania; Laurentiu P. Maricutoiu, West University of Timisoara, Romania; Daniela - Georgiana Valache (Voinescu), West University of Timisoara, Romania; Zselyke Pap, West University of Timisoara, Romania; Eusebiu Stefanu, West University of Timisoara, Romania; Bianca Popescu, West University of Timisoara, Romania; Marian Ilie, West University of Timisoara, Romania; Delia Virga, West University of Timisoara, Romania

**Students' situational boredom: Typology and relations to the requirement-skill fit**

Lina Wirth, Leuphana University Lueneburg, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany; Timo Ehmke, Leuphana Universität Lüneburg, Germany; Jan Retelsdorf, University of Hamburg, Germany; Burak Aydin, Leuphana University Lueneburg, Germany

Session U: 7

Time: 16:30-18:00

Location: AUTH\_TE2

**SINGLE PAPER: GAME-BASED LEARNING IN MATHS AND ECONOMICS****Chair**

Kiat Hui Khng, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Effects of an Adaptive Math Learning Program on Students' Performance, Self-Concept and Anxiety**

Anna Hilz, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karen Aldrup, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**The Strength and Direction of the Adaptation Affect Situational Interest in Game-Based Math Learning**

Anti Koskinen, University of Tampere, Finland, Finland; Jake McMullen, University of Turku, Finland; Minna Hannula-Sormunen, University of Turku, Finland; Manuel Ninaus, University of Graz, Austria; Kristian Kiili, Tampere University, Finland

**The Effectiveness of an Adaptive Digital Educational Game to Enhance Fraction Understanding**

Febe Demedts, University of Leuven - Campus KULAK, Belgium; Bert Reynvoet, KU LEUVEN, Belgium; Delphine Sasanguie, Hogeschool Gent, Belgium; Manuel Ninaus, University of Graz, Austria; Kristian Kiili, Tampere University, Finland; Fien Depaepe, KU Leuven, Belgium

**Serious Games in Economics Education: The influence of game mechanics and reflection prompts**

Liane Platz, University of Konstanz, Germany; Michael Jüttler, University of Konstanz, Germany

Session U: 8

Time: 16:30-18:00

Location: UOM\_A13

**SINGLE PAPER: MOTIVATIONAL BELIEFS AND ATTAINMENT****Chair**

Charlotte Arnou, KU Leuven (BE), Belgium

**Motivation and attainment: a systematic review of recent studies**

Daniel Muijs, Queen's University Belfast, United Kingdom

**Adolescents' expectancies and values in phenomenon-based learning and various school subjects**

Inka Ronkainen, University of Helsinki, Finland; Janica Vinni-Laakso, University of Helsinki, Finland; Katariina Salmela-Aro, Helsinki University, Finland; Veli-Matti Vesterinen, The University of Helsinki, Finland

**Changes in students' interest, competence and choice towards science learning on a long-term setting**

Moonika Teppo, University of Tartu, Estonia; Miia Rannikmäe, University of Tartu, Estonia; Regina Soobard, University of Tartu, Estonia

**Teaching to the test - killing students' motivation for the sake of good grades?**

Joy Muth, University of Vienna, Austria; Marko Lüftenegger, University of Vienna, Austria

Session U: 9

Time: 16:30-18:00

Location: AUTH\_DC2

**SINGLE PAPER: PARTICIPATORY RESEARCH, SCIENCE COMMUNICATION AND DIALOGIC PEDAGOGY****Chair**

Gabriel Fortes, Universidad Alberto Hurtado, Chile

**Participatory Research with youth as a Panacea for Educational Inequalities? A Meta-ethnography**

Aline Muff, The Hebrew University of Jerusalem, Israel; Aviv Cohen, The Hebrew University of Jerusalem, Israel

**Social disadvantage, classroom talk and educational attainment: RCT of a dialogic teaching programme**

Jan Hardman, University of York, United Kingdom

**Visualizing Effect Sizes for SciComm: Which Plot Types and Enrichment Options Support Sense-Making?**

Jürgen Schneider, DIPF | Leibniz Institute for Research and Information in Education, Germany; Kirstin Schmidt, University of Education Karlsruhe, Germany; Kristina Bohrer, University of Education Karlsruhe, Germany; Andreas Lachner, University of Tübingen, Germany; Samuel Merk, PH Karlsruhe, Germany

**Dialogic Problematization of Academic Integrity Education**

Mark Smith, Kean University, United States

Session U: 10

Time: 16:30-18:00

Location: UOM\_A04

**SINGLE PAPER: SOCIAL PROCESSES IN COMPUTER-SUPPORTED COLLABORATIVE LEARNING****Chair**

Julie Vaiopoulou, Aristotle University of Thessaloniki, Greece

**Investigating productive social interaction and the development of a group atmosphere in CSCL**

Azusa Nakata, University of Oulu, Finland; Karel Kreijns, Open University of the Netherlands, Netherlands; Armin Weinberger, Saarland University, Germany; Marija Milosevic, Saarland University, Germany; Hanna Jarvenoja, University of Oulu, Finland

**Making invisible visible– Exploring social processes of remote collaborative problem solving**

Johanna Pöysä-Tarhonen, University of Jyväskylä, Finland; Shupin Li, University of Jyväskylä, Finland; Jarkko Hautala, Niilo Mäki Institute, Finland; Nafisa Awwal, University of Melbourne, Australia; Päivi Häkkinen, University of Jyväskylä, Finland

**Group Learning or Learning Group? A Social Network Analysis on Group Regulated Learning**

Mathias Mejeh, University of Bern, Switzerland

**Measuring collaborative problem-solving skills in primary and secondary school students**

matias rojas, Universidad Diego Portales, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; César Moreno, Red Educacional los Conquistadores, Chile; Camila Rojas, Red Educacional los Conquistadores, Chile

Session U: 11

Time: 16:30-18:00

Location: UOM\_R09

**SINGLE PAPER: THINKING AND REASONING IN SCIENCE EDUCATION****Chair**

Monika Waldis, University of Applied Sciences Northwestern Switzerland, Switzerland

**The context matters: Exploring students' use of the resonance concept in organic chemistry tasks**

Irina Braun, Justus-Liebig-University Giessen, Germany; Nicole Graulich, Justus-Liebig-University Giessen, Germany

**Disclosing own reasoning while appraising others'. Implications for formative assessment development**

Mariana Orozco, University of Twente, Netherlands

**Examining all the evidence: Do undergraduates prioritize a review of studies over a single study?**

Etsuji Yamaguchi, Kobe University, Japan; Clark Chinn, Rutgers University, United States; Hiroki Oura, Tokyo University of Science, Japan; Toshio Mochizuki, Senshu University, Japan

**Students' Metacognitive Understanding of Apt Epistemic Performance in Science**

Huma Hussain-Abidi, Rutgers University Graduate School of Education, United States; Clark Chinn, Rutgers University Graduate School of Education, United States; Kyle Hunker, Rutgers Graduate School of Education, United States; Susan Yoon, University of Pennsylvania, United States; Noora Noushad, University of Pennsylvania, United States; Thomas Richman, University of Pennsylvania, United States; Amanda Cottone, University of Pennsylvania, United States

Session U: 12

Time: 16:30-18:00

Location: AUTH\_T202

**SINGLE PAPER: SIMULATION-BASED LEARNING IN VOCATIONAL EDUCATION****Chair**

Raija Hämäläinen, University of Jyväskylä, Finland

**Measuring the Collaborative Diagnostic Problem Solving Process in Automotive Malfunction Diagnosis**

Dave Rexhäuser, Technische Universität Dresden, Germany; Stephan Abele, Chair of Vocational Education, Institute of Educational Vocation and Vocational Didactics, Germany; Anika Radkowitzsch, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Constanze Richters, Ludwig-Maximilians-Universität (LMU), Germany; Louise Kaseler, TU Dresden, Germany; Peter Hesse, TU Dresden, Germany; Inga Glogger-Frey, University of Erfurt, Germany; Julius Meier, University Erfurt, Germany

**How Role Power & Social Persuasion Relate to Self-Efficacy & Performance in a Role-Play Simulation**

Dorothy Duchatelet, Open Universiteit, Department of Online Learning and Instruction, Netherlands; Leen Catrysse, Open Universiteit, Department of Online Learning and Instruction, Belgium

**Social Experiences During Verbal and Video-Assisted Debriefings**

Stefan Hanus, University of Regensburg, Germany; Helen Jossberger, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany

**Scaffolding in healthcare simulation training**

Pauliina Rikala, University of Jyväskylä, Finland; Aaron Peltoniemi, University of Jyväskylä, Finland; Minna Ruoronen, University of Jyväskylä, Finland; Kaisa Silvennoinen, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland

Session U: 13

Time: 16:30-18:00

Location: AUTH\_T102

**SINGLE PAPER: MATH SELF-CONCEPT****Chair**

Ana Rodrigues de Lemos, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal

**The Implications of Math Self-Concept Decline Among High-Ability and Average-Ability Students**

Alicia Ramos, KU Leuven, Belgium; Karine Verschueren, KU Leuven, Belgium

**Mathematics self-concept, self-beliefs, and performance for mid-adolescent New Zealanders**

Penelope Watson, University of Auckland, New Zealand; Bernhard Ertl, Universität der Bundeswehr, Germany; Shengnan Wang, The University of Auckland, New Zealand

**Becoming a "math-person": Interplay between achievement emotions, motivation and math identity**

Barbara Blažanin, Faculty of Philosophy, University of Belgrade, Serbia; Jelena Radisic, University of Oslo, Norway; Ksenija Krstic, University of Belgrade, Serbia; Katarina Mičić, University of Belgrade, Faculty of Philosophy, Serbia

**Peer Spillover and Big-Fish-Little-Pond- Effects with SIMS80: Resolving a Theoretical Paradox?**

Ioulia Televantou, European University Cyprus, Cyprus; Herbert W. Marsh, Australian Catholic University, Australia; Kate Xu, Open University of the Netherlands, Netherlands; Jiesi Guo, Australian Catholic University, Australia; Theresa Dicke, Australian Catholic University, Australia

Session U: 14

Time: 16:30-18:00

Location: UOM\_R05

**SINGLE PAPER: SOCIAL MEDIA: LEARNING, ANXIETY AND STRESS****Chair**

Alexandra Gkloumpou, Aristotle University of Thessaloniki, Greece

**A gamified approach to examining health literacy and information sharing among ethnic populations**

Giovanna Morara, University of South Carolina, Italy; Shea Ferguson, University of South Carolina, United States; Melissa Duffy, University of South Carolina, United States; Gregory Trevors, University of South Carolina, United States

**Reasons and consequences for media multitasking during studying – an experience sampling approach**

Lauri Hietajärvi, University of Helsinki, Finland; Erika Maksniemi, University of Helsinki, Finland; Jussi Järvinen, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland; Katriina Salmela-Aro, Helsinki University, Finland

**Is experience of digital stress more harmful for schooling than social media use before bedtime?**

Erika Maksniemi, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland; Reito Visajaani Salonen, Helsinki Institute for Social Sciences and Humanities, University of Helsinki, Finland; Katriina Salmela-Aro, Helsinki University, Finland

Session U: 15

Time: 16:30-18:00

Location: UOM\_A11

**SINGLE PAPER: CRITICAL THINKING IN HIGHER EDUCATION****Chair**

Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland, Switzerland

**Associations of critical thinking with educational and socioeconomic background of Finnish students**

Heidi Hyytinen, University of Helsinki, Finland; Kari Nissinen, University of Jyväskylä, Finland; Katri Kleemola, University of Helsinki, Finland; Jani Ursin, University of Jyväskylä, Finland

**Promoting university students' scientific thinking development: a perspective of university teachers**

Mari Murtonen, University of Turku, Finland; Heidi Salmento, University of Turku, Department of Teacher Education, Finland

**Cognitive in context: How course-taking breadth supports skill formation in emerging adults**

Gabe Orona, University of Tübingen, Germany

**Characteristics, Context, and Conditions: A Systematic Review of Critical Thinking Interventions**

Eric Schoute, University of Maryland, United States

Session U: 16

Time: 16:30-18:00

Location: AUTH\_T002

**SINGLE PAPER: ARTIFICIAL INTELLIGENCE IN SCHOOLS****Chair**

Loren Marulis, Connecticut College, United States

**Teachers' and parents' attitudes towards the use of AI technology in school**

Janne Paula Mesenhöller, University of Potsdam, Germany; Katrin Böhme, University of Potsdam, Germany

**Preservice teacher discourse with AI-integrated virtual students: A look at sentence function**

Alex Barrett, Florida State University, United States; Chih-Pu Dai, Florida State University, United States; Luke West, Florida State University, United States; Saptarshi Bhowmik, Florida State University, United States; Nuodi Zhang, Florida State University, United States; Fengfeng Ke, Florida State University, United States

**Chatting with the past, developing a chatbot for history education**

Albert Logtenberg, ICLON-Leiden University Graduate School of Teaching, Netherlands; Nadira Saab, Leiden University, Netherlands; Ron Pat-El, Open University, Netherlands

**Using Machine Learning to Understand how the Predictors of Maths Ability Change over Time**

Rosa Lavelle-Hill, University of Copenhagen, Denmark; Stephanie Lichtenfeld, Universität Hamburg, Germany; Reinhard Pekrun, University of Essex, United Kingdom; Michiko Sakaki, University of Tübingen, Germany; Kou Murayama, University of Tübingen, Germany

Session U: 17

Time: 16:30-18:00

Location: UOM\_A03

**SINGLE PAPER: EYE TRACKING STUDIES ON TEACHING****Chair**

Aline Alves-Wold, University of Stavanger, Norway

**Expertise in interpreting historical images: An eye-tracking study**

Marjaana Puurtinen, University of Turku, Finland; Johanna Kaakinen, University of Turku, Finland; Halszka Maria Jarodzka, Open Universiteit, Department of Online Learning and Instruction, Netherlands

**Promoting Professional Vision through Minimal Intervention: An Eye-Tracking Study**

Sylvia Gabel, Universität Augsburg, Germany; Andreas Gegenfurtner, University of Augsburg, Germany

**Did I see it all? - Prompting Preservice Teachers' Noticing During Teaching**

Leonie Telgmann, Leibniz University Hannover, Germany; Katharina Mueller, Leibniz University Hannover, Germany

**Disfluency as Moderator for the Seductive Details Effect: An Eye-Tracking Investigation**

Sophia Christin Weissgerber, University of Kassel, Germany; Ralf Rumber, University of Kassel, Germany

Session U: 18

Time: 16:30-18:00

Location: UOM\_R02

**POSTER PRESENTATION: GAME-BASED LEARNING AND IMMERSIVE TECHNOLOGIES IN STUDYING LEARNING, INSTRUCTION AND MOTIVATION****Chair**

Therese Hopfenbeck, University of Melbourne, Australia

**In-game performance and the role of students' socioeconomic status, self-efficacy and interest**  
 Michaela Arztmann, Utrecht University, Netherlands; Jessica Lizeth Domínguez Alfaro, KU Leuven - University of Leuven, Belgium; Lisette Hornstra, Utrecht University, Netherlands; Johan Jeurink, Utrecht University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands

**PandHEMOT®: An App for Children and Adolescents to Foster Pandemic-Related Emotional Competence**

Giada Vicentini, University of Verona, Italy; Daniela Raccanello, University of Verona, Italy; Emmanuela Rocca, University of Verona, Italy; Roberto Burro, University of Verona, Italy

**"Try to contaminate patients and objects": Effects of discovery instructions in VR**

Juliette Desiron, University of Zürich, Switzerland; Aline Wolfensberger, Department of Infectious Diseases and Hospital Epidemiology, University Hospital Zurich, Switzerland; Dominik Petko, University of Zurich, Switzerland

**Online intervention program for first graders to close pre-reading skills gaps**

Renáta Kiss, University of Szeged Institute of Education, MTA-SZTE Digital Learning Technologies Research Group, MTA-SZTE Research Group on the Development of Competencies, Hungary; Katalin Szili, Hungarian University of Agriculture and Life Sciences, Institute of Education, Hungary; Dora Mokri, Szeged Center for Research on Learning and Instruction!, Hungary; Benő Csapó, University of Szeged, Hungary; Gyöngyvér Molnár, University of Szeged, MTA-SZTE Digital Learning Technologies Research Group, Hungary

**Addressing the Climate Crisis in Higher Education: Game Design for Transformative Learning**

Pia Spangenberg, Universität Potsdam, Germany; Linda Kruse, Hochschule Mainz / University of Applied Sciences, Germany; Anja Schultze-Krumbholz, Technische Universität Berlin, Department of Educational Psychology, Germany; Mandy Singer-Brodowski, Freie Universität Berlin, Germany

**Design, Development and Implementation of VR Serious Games for Science in a Postsecondary Context**

Christine Marquis, Cégep de Saint-Jérôme, Canada; Bruno Poellhuber, University of Montreal, Canada; Sébastien Wall-Lacelle, Cégep de Saint-Jérôme, Canada; Audrey Groleau, Université du Québec à Trois-Rivières, Canada; Normand Roy, University of Montreal, Canada

**From Awareness to Adjustment: A Teacher's Local Adaptation of a Game-based Learning Environment**

Tianshu Wang, Indiana University, United States; Krista D. Glazewski, Indiana University, United States; Haesol Bae, Indiana University, United States; Chen Feng, Indiana University, United States; Daeun Hong, Indiana University, United States; Cindy E. Hmelo-Silver, Indiana University, United States; Seung Lee, North Carolina State University, United States; Bradford W. Mott, North Carolina State University, United States; James C. Lester, North Carolina State University, United States

Session U: 19

Time: 16:30-18:00

Location: UOM\_R01

**POSTER PRESENTATION: GENDER ISSUES IN EDUCATION****Chair**

Lisa Dewulf, Ghent University, Belgium

**Global crisis and increase in domestic violence. Education as a force for change**

Rossella Marzullo, University of Reggio Calabria Mediterranean, Italy

**Researching youth voices on Comprehensive Sex Education: a systematic review of qualitative studies**

Carolina Trivelli, University of Verona, Italy

**Exploring gender differences in Coding at the beginning of Primary school**

Costanza Padova, University of Padova, Italy, Italy; Chiara Montuori, Università di Padova, Italy; Lucia Ronconi, Università di Padova, Italy; Tullio Vardanega, Università di Padova, Italy; Barbara Arfé, University of Padova, Italy

**Self-efficacy and utility value as predictors of adolescents' intentions to study science subjects**

Erin Mackenzie, Western Sydney University, Australia; Kathryn Holmes, Western Sydney University, Australia; Nathan Berger, Western Sydney University, Australia

**Empowering e-learning relationships: refugee women explore civics during the lock-down in Greece**

Agapi Chouzouraki, UNIVERSITY OF MACEDONIA, Greece; Ioanna Papavassiliou-Alexiou, University of Macedonia, Greece

Session U: 20

Time: 16:30-18:00

Location: UOM\_A10

**ICT DEMONSTRATION: SUPPORTING MULTIMODAL INQUIRY SCIENCE LEARNING WITH A DIGITAL NOTEBOOK**

**Supporting Multimodal Inquiry Science Learning with a Digital Notebook**

Sadhana Puntambekar, University of Wisconsin, United States; Dana Gnesdlow, University of Wisconsin-Madison, United States; William Goss, University of Wisconsin-Madison, United States; Indrani Dey, University of Wisconsin-Madison, United States

Session U: 21

Time: 16:30-18:00

Location: AUTH\_DC3

**ICT DEMONSTRATION: NSTUDY: A SOFTWARE SYSTEM FOR TRACING LEARNING**

**nStudy: A software system for tracing learning**

Philip Winne, Simon Fraser University, Canada