| Session A: 1 | Time: 10:45-11:45 | Location: Session Room 13 |
| **WORKSHOP: SHAPE YOUR OWN PROFESSIONAL FUTURE THROUGH GUIDED REFLECTION EXERCISES** |
| **Shape your own professional future through guided reflection exercises** |
| Christel Lutz, University Utrecht, Netherlands; Merel van Geh, Utrecht University, Netherlands; Vicki Baker, Albion College, United States |

| Session A: 2 | Time: 10:45-11:45 | Location: Session Room 3 |
| **WORKSHOP: MAKING PEDAGOGICAL AND ASSESSMENT DECISIONS THAT PRIORITIZE STUDENTS’ INTRINSIC MOTIVATION** |
| **Making Pedagogical and Assessment Decisions that Prioritize Students' Intrinsic Motivation** |
| Lia Daniels, University of Alberta, Canada |

| Session A: 3 | Time: 10:45-11:45 | Location: Session Room 12 |
| **WORKSHOP: HOW TO DEAL WITH NON-SIGNIFICANT P-VALUES AND MAKE THEM INFORMATIVE: EQUIVALENCE TESTING** |
| **How to deal with non-significant p-values and make them informative: equivalence testing** |
| Christian Thurn, ETH Zurich, Switzerland; Peter Edelsbrunner, ETH Zurich, Switzerland |
### ESPRESSO PAPER: HIGHER EDUCATION

**Chair**
Rachel Shanks, University of Aberdeen, United Kingdom

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<tr>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>Programmatic assessment in seven different domains in higher professional education</td>
<td>Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Tamara van Schilt Mol, Hogeschool van Arnhem en Nijmegen, Netherlands; Coes van der Vleuten, Maastricht University, Netherlands</td>
</tr>
<tr>
<td>Assessment design decisions in practice: Profile identification in approaches to assessment design</td>
<td>Javier Fernández, Universidad Autonoma de Madrid, Spain; Ernesto Panadero, Universidad DEusto, Spain; Daniel García Pérez, European University of Madrid, Spain; Lere Pinedo, Universidad de Deusto, Spain</td>
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<tr>
<td>Stress and burnout? University staff’s experiences of teaching</td>
<td>Vivi Virtanen, Hame University of Applied Sciences, Finland; Teile Halikari, University of Helsinki, Finland; Mari Murtonen, University of Turkku, Finland; Anna Parpala, University of Helsinki, Finland; Lisa Postaref, HAMK University of Applied Sciences, Finland</td>
</tr>
<tr>
<td>The positive impact of teaching on research in Life Sciences</td>
<td>Jaanika Blomster, University of Helsinki, Finland; Vivi Virtanen, Hame University of Applied Sciences, Finland; Henna Askainen, University of Helsinki, Finland; lauri Kontula, The University of Helsinki, Finland; Janna Pietiskainen, The University of Helsinki, Finland</td>
</tr>
<tr>
<td>Transformative experiences of novice academics in an online faculty mentoring program</td>
<td>Helga Dorner, Eötvös Loránd University, Hungary; Gorana Mise, Bard College Berlin, Germany; Margaryta Rymanenko, Central European University Vienna, Austria</td>
</tr>
<tr>
<td>Reading comprehension of students with special educational needs in general education classrooms</td>
<td>Beata Szenyi, Eotvos Lorand University, Hungary; Tibor Vigh, University of Szeged, Hungary; Agota Szekeres, Eotvos Lorand University, Hungary; Gabriella Zentai, University of Szeged, Hungary</td>
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### ESPRESSO PAPER: ACHIEVEMENT

**Chair**
Monica Fexas, Zurich University of Teacher Education, Switzerland

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<tr>
<th>Title</th>
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<tr>
<td>Achievement Emotions Mediate the Link between Goal Failure and Goal Revision</td>
<td>Maria Theobald, DIPF + Leibniz Institute for Research and Information in Education, Germany; Jasmin Brettwieser, DIPF + Leibniz Institute for Research and Information in Education, Germany; Kuo Murayama, University of Reading, United Kingdom; Garvin Brod, DIPF + Leibniz Institute for Research and Information in Education, Germany</td>
</tr>
<tr>
<td>SES and kindergartners’ math achievement: a multifaceted effect</td>
<td>David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rebecca Bull, Macquarie School of Education, Macquarie University, Australia; kerry Lee, The Education University of Hong Kong, Hong Kong</td>
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<tr>
<td>Investigating SEN and SES – separate or confounded?</td>
<td>Jenny Lenkeit, University of Potsdam, Germany; michel Krieger, Humboldt-University of Berlin, Germany; Antje Ehler, University of Potsdam / University of Johannesburg, Germany; Anne Hartmann, University of Potsdam, Germany; Nadine Spinler, University of Potsdam, Germany</td>
</tr>
<tr>
<td>The black box revelation of instructional practices: a multi-level analysis of the transition to HE</td>
<td>Mikael De Clercq, Université catholique de Louvain (UCL)/ Académie de Recherche et de l’Enseignement Supérieur (ARES), Belgium; Justine Jacquemart, Université catholique de Louvain (UCL), Belgium</td>
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<tr>
<td>Effects of Peer- and Self-Assessment on Strategy Variability and Performance of Low Performer</td>
<td>Sandra Zulliger, Institute for Diversity in Education, Switzerland; Buholzer Alois, Institute for Diversity in Education, Switzerland; Stella Boldmann, University of Teacher Education of Lucerne, Switzerland; Merte Ruelmann, University of Teacher Education of Lucerne, Switzerland</td>
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<tr>
<td>Individual Differences in Rate of Improvement during a Spatial Task Predict Future Spatial Learning</td>
<td>Emily Grossnickle Peterson, American University, United States</td>
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</table>
### Session A: 6  
**Time:** 10:45-11:45  
**Location:** Session Room 16

**ESPRESSO PAPER: ATTITUDES AND BELIEFS**

| Chair | Motivation Towards Creativity: The Importance of Need Satisfaction and Perceived Value of Creativity  
Marek Urban, Jan Evangelista Purkyné University, Czech Republic; Ondra Pesout, J. E. Purkyne University, Czech Republic; Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Jiri Kombirza, J. E. Purkyne University, Czech Republic  
Relevance–a Multidimensional Construct–and Its Relation to Affective Constructs in Physics Courses  
Almer Gungor, KU LEUVEN, Belgium; Mike De Cock, KU LEUVEN, Belgium  
Collegial casework in inclusive teacher education: A self-efficacy tool for pre-service teachers?  
Scarlett Madeline Kobs, Humboldt Universität zu Berlin, Germany; Saskia Liebner, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Simon Wagner, University of Potsdam, Germany; Franziska Rogge, University of Potsdam, Germany; Karsten Krauskopf, University of Applied Sciences Potsdam, Germany; Michel Krogge, Humboldt University Berlin, Germany  
Teacher students’ personal worldviews and career motives – how are they related?  
Laura Hiristo, University of Eastern Finland, Finland  
Online and offline youth participation in Hong Kong’s anti-extradition bill social movement  
Frank Reicher, The University of Hong Kong, Hong Kong; Anna Fiedler, The University of Hong Kong, Hong Kong  
Fostering preservice teachers’ beliefs and motivation for engaging with research methods  
Helene Zeob, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany |

### Session A: 7  
**Time:** 10:45-11:45  
**Location:** Session Room 2

**PANEL DISCUSSION: MULTIMODAL MEASUREMENT OF SRL IN ADVANCED LEARNING TECHNOLOGIES: 5 YEARS OF PIONEERING RESEARCH.**

| Chair | Multimodal Measurement of SRL in Advanced Learning Technologies: 5 years of pioneering research.  
Roger Azevedo, University of Central Florida, United States; Sanna Järvelä, University of Oulu, Finland; Dragan Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany |

### Session A: 8  
**Time:** 10:45-11:45  
**Location:** Session Room 9

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND HIGHER EDUCATION**

| Chair | “I’m Tired of Black Boxes”: Emotional Experiences When Teaching Digitally in a Time of Pandemic  
Anne Christiane Frenzel, University of Munich, Germany; Anton Marx, Ludwig Maximilians-Universität, Germany; Carolin Schwab, Ludwig-Maximilians-Universität (LMU), Germany  
Temporal Dynamics Between Faculty Goals, Work-stress, and Performance in Teaching and Research  
Martin Daumiller, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany  
Faculty Grit: How Long-term Passion and Perseverance Relates to Teaching and Research Success  
Jordan Jaeger, University of North Dakota, United States; Chia-lin Chang, University of North Dakota, United States; Robert Stupinsky, University of North Dakota, United States |

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**MONDAY, 23 AUGUST 2021**
### Session A: 9 | Time: 10:45-11:45 | Location: Session Room 4

**SINGLE PAPER: REASONING IN PRIMARY SCIENCE EDUCATION**

| Chair | The process of learning scientific reasoning: a latent transition analysis  
Erika Schlatter, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Ard Laizander, Radboud University, Netherlands  
Scientific reasoning and physics understanding: A 5-year longitudinal study across elementary school  
Susanne Koerber, University of Education Freiburg, Germany; Christopher Osterhaus, University of Vechta, Germany; Kristin Nyberg, University of Education Freiburg, Germany  
Effects of micro- and macro-adaptive instruction on children’s learning of scientific reasoning  
Erika Schlatter, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Ard Laizander, Radboud University, Netherlands |
MONDAY, 23 AUGUST 2021

Session A: 13  |  Time: 10:45-11:45  |  Location: Session Room 1

**SINGLE PAPER: SOCIAL INTERACTION**

**Chair**  
Mjirami Ikonen, University of Eastern Finland, Finland

**Differences in the quality of interaction in nurseries and relation to child development**  
Malina Petrisch, Karl-Franzens University of Graz, Austria; Tanja Sonnleitner, Karl-Franzens-University of Graz, Austria

**Insights on the teacher-student relationship at university from the teachers’ perspective**  
Gerda Hagenauer, University of Salzburg, Austria; Franziska Mueslbacher, University of Salzburg, Austria; Mishela Ivanova, University of Salzburg, Austria

**Teacher biased behaviours and interactions with students**  
Christine Rube-Davies, University of Auckland, New Zealand; Gamze Inan-Kaya, University of Istanbul, Turkey

Session A: 14  |  Time: 10:45-11:45  |  Location: Session Room 15

**INVITED SYMPOSIUM: SIG 26: HOW TO TEACH ARGUMENTATION, DIALOGUE AND REASONING FOR CITIZENSHIP?**

**Chair**  
Claire Polo, ECP Laboratory, France

**Discussant**  
Michael Baker, CNRS - Telecom Paris, France

**Building active citizenship and global competence through dialogue**  
Fiona Maine, University of Cambridge, United Kingdom

**A sociocultural analysis of argumentation among young adults at University**  
Nathalie Muller Mirza, Université de Genève, Switzerland

**The role of position assignment in classroom debate – a video study in civic education**  
Dorothee Gronostay, TU Dortmund University, Germany

Session B: 1  |  Time: 12:00-13:00  |  Location: Session Room 3

**SINGLE PAPER: EXPERIMENTAL STUDIES AND COGNITIVE SKILLS**

**Chair**  
Angel Torres-Toukoumidis, Universidad Politecnica Salesiana, Ecuador

**Underachievement in Mathematics: Do Cognitive Profiles Play a Role beyond Conative Factors?**  
Simona Daguati, ETH Zurich, Switzerland; ElsBeth Stern, ETH Zurich, Switzerland

**Exploring the cognitive processes of students and the mediating role of language in CLIL assessments**  
Xing San Teng, The University of Hong Kong, Hong Kong; Janet H. Hsiao, The University of Hong Kong, Hong Kong; Yuen Yi Lo, The University of Hong Kong, Hong Kong

**The motor–executive function link in children with typical and poor visual-motor integration skills**  
Michelle N. Maurer, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

Session B: 2  |  Time: 12:00-13:00  |  Location: Session Room 7

**SINGLE PAPER: ONLINE LEARNING AND EDUCATIONAL TECHNOLOGY**

**Chair**  
Elene Sinakou, University of Antwerp, Belgium

**Detecting and evaluating programming expertise - The case of Stack Overflow**  
Markus Nivala, University of Gothenburg, Sweden; Alena Seredko, University of Gothenburg, Sweden; Tanya Osborne, University of Gothenburg, Sweden; Thomas Hillman, University of Gothenburg, Sweden

**Eye see what you did there. Predicting comprehension of a video lecture based on gaze visualizations**  
Ellen Kok, Utrecht University, Netherlands; Matt Sibbald, McMaster University, Canada; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**ICT usage in educational settings among youngsters in Estonia in the background of COVID-19 pandemic**  
Gertis Teidla-Kuritsöö, Tallinn University, Estonia; Merike Siisak, Tallinn University, Estonia; Halliki Pölda, Tallinn University, Estonia

MONDAY, 23 AUGUST 2021
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<tr>
<td><strong>SINGLE PAPER: EDUCATIONAL TECHNOLOGY</strong></td>
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<tr>
<td><strong>Chair</strong> Nica Vivienne Glumann, Technische Universität Darmstadt, Germany</td>
<td><strong>Learning with a Pedagogical Agent: does the Task Specificity of Self-efficacy Measure Matter?</strong> Kate Xu, Open University of the Netherlands, Netherlands; Xiaoxia &quot;Shive&quot; Huang, Western Kentucky University, United States; Sascha Schneider, Chemnitz University of Technology, Germany; Liija Lin, East China Normal University, China</td>
<td><strong>Simulation Enhanced Interprofessional Health Education and Professional Identity Development</strong> Hadij Elsayed, University of Gothenburg, Sweden; Markus Nivala, University of Gothenburg, Sweden; Lisa Carlsson, Simulatorcentrum I Väst, Sahlgrenska University hospital, Sweden</td>
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<th>Session B: 4</th>
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<td><strong>SINGLE PAPER: WRITING AND LITERACY</strong></td>
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<td><strong>Chair</strong> Christian M. Stracke, Open University of the Netherlands, Netherlands</td>
<td><strong>Student and Teacher Feedback Literacy and Engagement with Written Feedback in EFL writing</strong> Abderrahm Mamad, University of Szeged, Doctoral School of Education, Hungary; Tibor Vigh, University of Szeged, Hungary</td>
<td><strong>An Exploratory Study on how Myanmar EFL Students Benefit from Grammarly Feedback</strong> Nang Kham Thi, University of Szeged, Doctoral School of Education, Hungary</td>
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<th>Session B: 5</th>
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<tr>
<td><strong>SINGLE PAPER: WRITING, LITERACY AND SELF-REGULATION</strong></td>
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<td><strong>Chair</strong> Megan Wiedbusch, University of Central Florida, United States</td>
<td><strong>Assessing Self-Regulation in Grade 1 Writers: A Reliability and Validity Study</strong> Ashley Bittell, Western University, Canada; Perry Klein, The University of Western Ontario, Canada; Jill Dombroski, Western University, Canada; Christine Giese, Western University, Canada; Kristen Sha, Western University, Canada; Serena Thompson, Western University, Canada</td>
<td><strong>Scaffolding Students’ Revision Processes with Prior-Strategy Instruction and Formative Feedback</strong> Salome Wagner, University of Tübingen, Germany; Andreas Lachner, University of Tübingen; Department of Educational Science, Germany; Matthias Nickles, University of Freiburg, Germany; Christian Burkhart, University of Freiburg, Germany; Leonie Jacob, University of Tübingen, Germany</td>
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<th>Session B: 6</th>
<th>Time: 12:00-13:00</th>
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<td><strong>SINGLE PAPER: MOTIVATION AND TEACHER EFFECTIVENESS</strong></td>
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<td><strong>Chair</strong> Becky Bergman, Chalmers University of Technology, Sweden</td>
<td><strong>A simulated teaching intervention boosts preservice teacher self-efficacy and classroom readiness</strong> Jade Rushby, The University of New South Wales, Australia; Robert Klassen, University of York, United Kingdom</td>
<td><strong>How does the learning environment affect the emotional exhaustion of beginning teachers?</strong> Stefanie Gaoecke, DZHW - German Centre for Higher Education Research and Sciences Studies, Germany; Claudia Menge, German Centre for Higher Education Research and Science Studies (DZHW), Germany; Andreas Ortenburger, DZHW - German Centre for Research on Higher Education and Science Studies, Germany</td>
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</table>
### Session B: 7 - SINGLE PAPER: INQUIRY LEARNING AND REASONING

| Chair | Exploring pre-service teacher moves for supporting student reasoning utilizing a scriptwriting task  
|-------| Victoria Shure, Humboldt-Universität zu Berlin, Germany |
|       | Misinformation is Contagious: Learning to Detect Misinformation Through an Online Game  
|       | Stani Baziliaj, University of Haifa, Israel; Danna Tal-Savit, University of Haifa, Israel; Fayez Abed, University of Haifa, Faculty of Education, Israel; Shiri Mor-Hagani, University of Haifa, Israel; Na'ama Goldik, University of Haifa, Israel; Chai Davidow, University of Haifa, Israel |
|       | Exploring hypothetical question trajectories as support for guiding student questioning  
|       | Harry Stokhof, HAN University of Applied Sciences, Netherlands; Helma Colbekkink-Marchand, Radboud University, Department of Teacher education & HAN University of Applied Sciences, Netherlands |

### Session B: 8 - SINGLE PAPER: MOTIVATION AND EMOTION IN PRIMARY EDUCATION

| Chair | Reducing MA of school children: A systematic review of intervention research  
|-------| Miriam Bait, Leibniz Universität Hannover, Germany; Moritz Blömen-Ringleb, Leibniz University Hannover, Germany; Lars Orbach, Federal University of Minas Gerais, Brazil |
|       | Triangulating measurements of student participation during class  
|       | Charlotte Baez, Sankt Gallen University of Teacher Organisation, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland; Doris Kunz Heim, PH FHHW, Switzerland |
|       | Anxiety and reading self–concept of primary school children with learning disabilities  
|       | POLITI POLYCHRONI, NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, Greece; Alexander-Stamatios Antoniou, National & Kapodistrian University of Athens, Greece; Olga Kots, National and Kapodistrian University of Athens, Greece |

### Session B: 9 - SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION

| Chair | Effects of sequencing and prompting on learning with contrastive video modelling examples  
|-------| Theresa Wilkes, Saarland University, Germany; Lisa Stark, Saarland University, Germany; Kati Trempler, University of Wuppertal, Germany; Robin Stark, Saarland University, Germany |
|       | Novice and expert teachers’ noticing of classroom management events in two formats of instruction  
|       | Rebekka Stahinke, TU Dortmund University, Germany; Sigrid Blömeke, Centre for Educational Measurement (CEMO), Norway |
|       | Structure and predictors of instructional quality in private tutoring  
|       | Katrin Guill, Leibniz Institute for Science and Mathematics Education, Germany; A. Katharina Peters, no institutional affiliation, Germany; Janina Rotthof-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany |

### Session B: 10 - WORKSHOP: BRINGING THIAGI TO THE CLASSROOM: REDUCING STEREOTYPE-THREAT BY PROMOTING REFLECTION IN CRT

|       | Bringing Thiagi to the classroom: Reducing stereotype-threat by promoting reflection in CRT  
|       | Tabea Berberena, University of Stuttgart, Germany; Maria Würzberger, University of Stuttgart, Germany |
WORKSHOP: ACTIVE LEARNER PARTICIPATION IN THE CO-CREATION OF EDUCATION: CHALLENGES, APPROACHES AND TIPS

Active learner participation in the co-creation of education: Challenges, approaches and tips
Karen Könings, Maastricht University, Netherlands; Shireen Suliman, Hamad Medical Corporation, Qatar; Raghadha Al-Bualy, Oman Medical Specialty Board, Oman; Subha Ramani, Brigham and Women’s Hospital, Harvard Medical School; Harvard Macy Institute, United States

ESPRESSO INVITED SYMPOSIUM: SIG 2: BEYOND MERE CONTENT: CONTEXTUAL AND METATEXTUAL ASPECTS IN MULTIPLE DOCUMENT COMPREHENSION

Upper Secondary School Students as Critical Online Readers
Carla Kil, Tampere University, Finland; Ivar Braten, University of Oslo, Norway; Helge Stromso, University of Oslo, Norway; Michelle Schira-Hageman, University of Ottawa, Canada; Anne Jyrkkänen, Tampere University, Finland; Eija Rääkkönen, University of Jyväskylä, Finland

Students’ Reasoning About Domain Perspectives When Learning from Multiple Texts
Alexandra List, The Pennsylvania State University, United States; Hongcui Du, The Pennsylvania State University, United States; Bailing Lyu, The Pennsylvania State University, United States

Performing a high and low-stakes integration task: Effects on essay completion and perceived effort
Raquel Cerdan, University of Valencia, Spain; Ignacio Mahez, University of Valencia, Spain; Tobias Richter, University of Würzburg, Germany

Context and consistency effects when reading multiple documents
Cornelia Schoor, University of Bamberg, Germany; Jean-François Rouet, University of Poitiers, France; Mary Anne Brit, Northern Illinois University, United States

Collaborative Workspace: Preservice and Novice Language Teachers’ Development of Summative Assessment Literacy

Preservice and novice language teachers’ development of summative assessment literacy
Ail Yildirim, University of Gothenburg, Sweden; Birgitta Frielindahl, Department of Language Education, Stockholm University, Sweden; Anne Dragemark Oscarson, University of Gothenburg, Sweden; Raili Hiden, University of Helsinki, Finland

Roundtable: Citizenship Education

Intertwining Competence in Journalism and Democracy. An Interdisciplinary Approach to a New Model
Fredrik Damrau, Center for Journalism and Democracy at Leipzig University, Germany; Christopher Pollak, Center for Journalism and Democracy at Leipzig University, Germany; Juliane Pfeffer, Center for Journalism and Democracy at Leipzig University, Germany

Community organizing and political active citizens: contradictions and dilemmas
Juan Ma Sarmiento Jaramillo, Université de Genève, Switzerland

Young Adults’ Intuitive Conceptions of the Pension System in Germany: An Interview Study
Ronja Baginski, University of Mannheim, Germany; Julia Schulthes, University of Mannheim, Germany; Carmela Apera, University of Mannheim, Germany
### Session B: 15
**Time:** 12:00-13:00  
**Location:** Session Room 15

**INVITED SYMPOSIUM: ADVANCES IN MIXED-METHODS SOCIAL NETWORK ANALYSIS (EFG ON MMSNA)**

| Chair | Exploring Online Social Networks of Educational Leaders in Times of COVID-19  
|       | Martin Rehm, Pädagogische Hochschule Weingarten, Germany |
|       | Ethnographic MMSNA: linking actor agency, social structure, and the ‘thingness’ of networks  
|       | Marc Sarazin, University of Edinburgh, United Kingdom; Natasa Panic, University of Edinburgh, United Kingdom |
|       | Is social network analysis inherently mixed and multilevel?  
|       | Victoria Murphy, Open University, United Kingdom |
| Organiser | Case Comparison Tables in SNA  
| Dominik E. Froehlich, University of Vienna, Austria |
| Discussant | Laura Monique Thomas, Ghent University, Belgium |

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### Session C: 1
**Time:** 14:30-15:30  
**Location:** Session Room 2

**SINGLE PAPER: ATTITUDES, BELIEFS AND SOCIAL INTERACTION**

| Chair | Teacher expectations and emotions concerning students with special needs or immigrant background  
|       | Ineke Pit-ten Cate, University of Luxembourg, Luxembourg; Mireille Kirschler, Universität Trier, Germany |
|       | Effects of negative stereotypes on performance and social relations of immigrant students  
|       | Sarah E. Martiny, UiT The Arctic University of Norway, Norway; Laura Froehlich, FernUniversität in Hagen, Germany |
|       | Effects of stereotype threat in learning situations for students with migration background  
|       | Sabrina König, TU Dortmund University, Germany; Justine Stang, TU Dortmund University, Germany; Bettina Hannover, Freie Universität Berlin, Germany; Lyssann Zander, Leibniz Universität Hannover, Germany; Oliver T. Wolf, Ruhr-Universität Bochum, Germany; Nele McElvany, TU Dortmund University, Germany |

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### Session C: 2
**Time:** 14:30-15:30  
**Location:** Session Room 12

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND WORKPLACE LEARNING**

| Chair | Innovative professional potential in the interaction between newly-qualified teachers and schools  
|       | Julia van Leeuwen, Radboud Teachers Academy, Radboud University Nijmegen, Netherlands; Harmen Schaap, Radboud University Nijmegen, Netherlands; Femke Gojssel, Radboud University Nijmegen, Netherlands; Paulien Meijer, Radboud University Nijmegen, Netherlands |
|       | Towards creating an expansive learning environment for pre-service teachers  
|       | Adeline Yuan Sze Goh, Universiti Brunei Darussalam, Brunei Darussalam; Desmond Chia Chun Tan, Universiti Brunei Darussalam, Brunei Darussalam |
|       | Exploring deep-level characteristics of student teacher collaboration in practicum  
|       | Marco Galle, Zurich University of Teacher Education, Switzerland; Annelies Kreis, Zurich University of Teacher Education, Switzerland |

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### Session C: 3
**Time:** 14:30-15:30  
**Location:** Session Room 3

**SINGLE PAPER: ACHIEVEMENT**

| Chair | Deeper learning in lectures: A comparison of generating questions vs. paper writing  
|       | Natalie Endera, Universität Hildesheim, Germany; Pamela Baess, University of Hildesheim, Germany |
|       | Instructional quality: validity, comparability and the relationship to student outcomes.  
|       | Bas Sondlen, ILS, University of Oslo, Norway; Trude Nilsen, University of Oslo, Norway; Nani Teig, University of Oslo, Norway |
|       | Acquiring the Art of Conducting: Deliberate Practice as Part of Professional Learning  
|       | Simon Schmitt, Universität Regensburg, Germany; Manuel Laengler, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany |

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### Session C: 4  
**Time:** 14:30-15:30  
**Location:** Session Room 11

#### SINGLE PAPER: COMMUNITIES OF PRACTICE

**Chair**  
Martin Rehm, Pädagogische Hochschule Weingarten, Germany

1. **(De)instituionalizing informal social support? A case study on child protection**  
   Diego Di Masi, University of Turin, Italy; Chiara Sità, University of Verona, Italy

2. **Academic development courses in HE – a retrospective approach for future training practices**  
   Sylvie Viggo, University of Gothenburg, Sweden; Margareta Jernäs, University of Gothenburg, Sweden

3. **EXPLORING WOMEN’S LEARNING THROUGH THE CASE OF KHWAAB: WOMEN’S SKILL DEVELOPMENT CENTRE IN INDIA**  
   Bhanu Rawat, University of Oulu, Finland, Finland

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### Session C: 5  
**Time:** 14:30-15:30  
**Location:** Session Room 10

#### SINGLE PAPER: SOCIAL INTERACTION AND TEACHING

**Chair**  
Cyril Brom, Charles University, Czech Republic

1. **Effects of mastery-performance oriented teaching on self-regulation and achievement across cultures**  
   Pablo E. Torres, University of Cambridge, United Kingdom; David Whitebread, Homerton College, University of Cambridge, United Kingdom; Ros McLellan, Cambridge University, United Kingdom

2. **“There are two gaps, so”: Materials as resources for correction in pre-service teachers’ classes**  
   Frantisek Tuma, Masaryk University, Czech Republic

3. **Preparing students for collaboration: Effects of an in-class training in transactive communication**  
   Susanne Jurkowski, Universität Erfurt, Germany; Lukas Mundelsee, University of Erfurt, Germany; Martin Haenze, University of Kassel, Germany

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### Session C: 6  
**Time:** 14:30-15:30  
**Location:** Session Room 7

#### SINGLE PAPER: COMMUNITIES OF PRACTICE

**Chair**  
Marcus Friedrich, Technische Universität Braunschweig, Germany

1. **Trajectories of teacher agency in the professional community and association to experienced burnout**  
   Jenni Sultanmaa, Tampere University, Finland; Kirsir Pyhätö, University of Helsinki, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Tina Soini-Ikonen, Tampere University, Finland

2. **Transformative agency in teachers’ reflections on professional digital competence**  
   Ewa Skantz-Åberg, University of Gothenburg, Sweden; Apostolia Roka, University of Gothenburg, Sweden; Mona Lundin, University of Gothenburg, Faculty of Education, Sweden; Pia Williams, University of Gothenburg, Sweden; Annika Lantz-Andersson, University of Gothenburg, Sweden

3. **Sustainable school development in a digitalized world: Results from interviews in networked schools**  
   Anna Heinemann, University of Duisburg-Essen, Germany; Marco Hasselkuß, University of Duisburg-Essen, Germany; Manuela Endberg, University of Duisburg-Essen, Germany

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### Session C: 7  
**Time:** 14:30-15:30  
**Location:** Session Room 9

#### SINGLE PAPER: COLLABORATIVE LEARNING AND VIDEO ANALYSIS

**Chair**  
Marieke Thurlings, Eindhoven University of Technology, Netherlands

1. **Linking students’ reports on motivation to the level of interaction during collaborative learning**  
   Tatiana Shubina, University of Oulu, Finland; Finland; Hanna Jarvenoja, University of Oulu, Finland; Kristina Mänty, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

2. **Strategic activities in co- and socially shared regulation of emotions**  
   Kristina Mänty, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tära Tormänen, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

3. **8th graders’ ideas of contributing to sustainability – a study of students’ talk and microblogging**  
   Karl Anne Redhes, University of Oslo, Norway
## SINGLE PAPER: INSTRUCTIONAL DESIGN AND COMPREHENSION OF TEXT AND GRAPHICS

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<thead>
<tr>
<th>Chair</th>
<th>Fostering upper secondary school students' sourcing during online inquiry</th>
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<td>Elna Hämäläinen, University of Jyväskylä, Finland; Carita Kiili, Tampere University, Finland; Eija Räikkönen, University of Jyväskylä, Finland; Minna Lakkala, University of Helsinki, Finland; Lisa Iломäki, University of Helsinki, Finland; Auli Toom, University of Helsinki, Finland; Mikko Marttunen, University of Jyväskylä, Finland</td>
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<td>Reducing Split-Attention by Interactive Signaling and Visual Integration: An Eye Tracking Study</td>
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<td>Measuring and monitoring multiple document comprehension with a Dutch version of the MDC-instrument</td>
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<td>Hub Tabbers, Erasmus University Rotterdam, Netherlands; Carolijn Hahnst, DIPF</td>
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## SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, MOTIVATION AND EMOTION

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<th>Chair</th>
<th>Self-effective scientific reasoning? Differences between primary and secondary school students</th>
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<td>Kristin Nyberg, University of Education Freiburg, Germany; Susanne Koetber, University of Education Freiburg, Germany; Christopher Osterhau, University of Vechta, Germany</td>
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<td>Gender and temperament differences in task avoidance during the transition to lower secondary school</td>
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<td>Rikka Hirvonen, University of Eastern Finland, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Noona Kiuru, University of Jyväskylä, Finland</td>
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<td>Parental involvement in children’s homework: The role of parent motivational beliefs and affect</td>
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<td>KONSTANTINA PALANGA, Aristotle University of Thessaloniki, Greece; Eletheria Goni, Aristotle University of Thessaloniki, Greece; Dimitrios Stamaviatis, Aristotle University of Thessaloniki, Greece</td>
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## SINGLE PAPER: DEMOCRATIC EDUCATION AND EDUCATIONAL POLICY

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<th>Chair</th>
<th>How Do Schools Affect Inequalities in Political Participation: Compensation of Social Disadvantage?</th>
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<td>Daniel Deimel, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany</td>
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<td>Dialogue and critical thinking as prevention against antidemocratic attitudes</td>
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<td>Kristin Endresen Maharashtra, University of Agder, Norway; Aas Haraldstad, University of Agder, Norway; Aaslaug Kristiansen, University of Agder, Norway</td>
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<td>Building an Inclusive Education System: Implications from a Therapy Support Project in Ireland</td>
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<td>Emer Ring, Mary Immaculate College, Limerick, Ireland, Ireland; Lisha O'Sullivan, Mary Immaculate College, Ireland</td>
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## SINGLE PAPER: WRITING AND LITERACY

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<tr>
<th>Chair</th>
<th>The effects of summarising texts on text comprehension and subjective ratings of understanding.</th>
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<td>Amy Peters, University of Southampton, United Kingdom</td>
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<td>Do UK university students with and without dyslexia have different beliefs about writing?</td>
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<td>Sophie Hall, University of Southampton, United Kingdom</td>
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<td>Academic agency and responsibility through writing processes</td>
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<td>Ylva Lindberg, Jönköping University, Sweden; Sangeeta Bagga-Gupta, Jönköping University, Sweden</td>
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## INVITED SYMPOSIUM: E-CER: ANALYTICAL APPROACHES ON COLLABORATIVE LEARNING WITH DIGITAL KNOWLEDGE OBJECTS

**Chair**
Hanni Muukkonen, University of Oulu, Finland

**Organiser**
Crina Dansa, University of Oslo, Norway

**Discussant**
Lina Markauskaite, University of Sydney, Australia

- **Examining antecedents, processes, and consequences in collaborative learning with knowledge objects**
  Anoschka van Leeuwen, Utrecht University, Netherlands; Jeroen Janssen, Utrecht University, Netherlands

- **Question-driven Learning Analytics: Designing a Teacher-facing Dashboard for Online Breakout Rooms**
  Dragan Gasevic, Monash University, Australia; Roberto Martinez-Maldonado, Monash University, Australia

- **Co-creation of knowledge objects in undergraduate education – a qualitative analytical approach**
  Rachelle Estehazy, University of Oslo, Norway; Crina Dansa, University of Oslo, Norway; Monika Nertland, University of Oslo, Norway

- **Qualities of shared objects, collaboration processes, and related competence gains**
  Hanni Muukkonen, University of Oulu, Finland

## ESPRESSO INVITED SYMPOSIUM: SIG 5: EARLY CREATIVITY, FLEXIBILITY AND CURiosity – HOW TO PROMOTE THESE 21ST CENTURY SKILLS?

**Chair**
Paul Leseman, Utrecht University, Netherlands

**Organiser**
Esther Adi-Japha, Bar-Ilan University, Israel

**Discussant**
Esther Adi-Japha, Bar-Ilan University, Israel

- **Epistemic cognition and executive functioning in early childhood**
  Susan Walker, Queensland University of Technology, Australia; Jo Lunn Brownlee, Queensland University of Technology, Australia; Laura Schloes, Australian Catholic University, Australia

- **Promoting curiosity to promote learning: A study of curiosity and question-asking**
  Jamie Joines, University of Virginia, United States

- **Do Cultural Background and SES Affect Preschoolers’ Scientific Curiosity?**
  Orrit Spakor-Levy, Bar-Ilan University, Israel; Aisha Alzar, Bar-Ilan University, Israel; Yael Kesner Banuch, Beit Berl College, Kfar Saba, & Levinovsky College of Education, Tel Aviv, Israel, Israel; Tali Shechter, Bar-Ilan University, Israel

- **Creativity in children as a situated skill**
  Paul Leseman, Utrecht University, Netherlands; Marlies van Dijk, Utrecht University, Netherlands; Honghong Bai, Utrecht University, Netherlands; Hanna Mulder, Utrecht University, Netherlands; Evelyn Kneesbergen, Radboud University, Netherlands

## COLLABORATIVE WORKSPACE: THE DEVELOPMENT OF AN EVALUATION FRAMEWORK IN THE CONTEXT OF THE “SCHOOLS AS LIVING LABS” PROJECT

**The Development of an Evaluation Framework in the Context of the “Schools as Living Labs” Project**
Yvoni Pavlou, University of Cyprus, Cyprus; Maros Papaevripidou, University of Cyprus, Cyprus; Pavlos Koutoulis, Ellinogermaniki Agogi, Greece; Zacharias Zacharia, University of Cyprus, Cyprus; Sotoflis Sotiriou, Ellinogermaniki Agogi, Greece
### Session D: 1  |  Time: 15:45-16:45  |  Location: Session Room 6

**SINGLE PAPER: MIXED-METHODS RESEARCH**

**Chair**
Judith Gulikers, Wageningen University, Netherlands

- **Social Media contributes to a Sense of Community?! – A Case Study on Twitter**
  Martin Rehm, Pädagogische Hochschule Weingarten, Germany; Daly Alon, University of California, San Diego, United States; Peter Björklund Jr., University of California, San Diego, United States

- **The student-curriculum interplay: Diverse content in instructional materials and student performance**
  Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Jana Vietze, Erasmus University Rotterdam, Netherlands; Joran Jongerling, Erasmus University Rotterdam, Netherlands; Rinoya Senathirajah, Erasmus University Rotterdam, Netherlands; Regina Suriano, Erasmus University Rotterdam, Netherlands

- **Development of Meta-Discourse through Portfolio Reflection in a Knowledge Building Environment**
  Yuyao Tang, The University of Hong Kong, China; Carol Chan, The University of Hong Kong, Hong Kong

### Session D: 2  |  Time: 15:45-16:45  |  Location: Session Room 12

**SINGLE PAPER: SPECIAL PRIMARY EDUCATION**

**Chair**
Johanna Fee Ziemes, University of Duisburg-Essen, Germany

- **Individual prerequisites for children's attitudes towards peers with social-emotional disabilities**
  Marein Felix Loeper, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

- **Determinants for teachers' intentions to manage heterogeneity in (non-inkusive primary education**
  Gamar Gölöl, Paderborn University, Germany; Marwin Felix Loeper, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

- **Students' Online Reading Performance among Different Learners and their Reading Habits**
  Laura Kärnalainen, University of Jyväskylä, Finland; Cartia Kitil, Tampere University, Finland; Jukka Uhijärvi, University of Jyväskylä, Finland; Asklo Tolvani, University of Jyväskylä, Finland; Mikko Arno, University of Jyväskylä, Finland; Paavo H.T. Leppänen, University of Jyväskylä, Finland

### Session D: 3  |  Time: 15:45-16:45  |  Location: Session Room 5

**SINGLE PAPER: READING COMPREHENSION AND LITERACY**

**Chair**
Karen Köning, Maastricht University, Netherlands

- **A construct modeling approach for a more valid and reliable embedded reading assessment**
  Brent Duckor, San Jose State University, United States; Ágnes Hidi, MTA-SZTE, Hungary

- **READING STRATEGIES AND READING ACHIEVEMENTS IN THE MIDDLE SCHOOL: KAZAKHSTANI YOUNG LEARNERS**
  Aigul Akhmetova, University of Szeged, Doctoral School of Education, Hungary; Gáysha Imambayeva, Innovative Eurasian University, Kazakhstan; Bentí Csapó, University of Szeged, Hungary

- **A first step of a new acquired reading skills assessment of adult Hungarian aphasic patients**
  Orsolya Kis, University of Szeged Doctoral School of Education, Hungary; János Steklacs, University of Pécs, SzTE, Kaposvár, Hungary

### Session D: 4  |  Time: 15:45-16:45  |  Location: Session Room 10

**SINGLE PAPER: COGNITIVE DEVELOPMENT**

**Chair**
Jasperina Brouwer, University of Groningen, Netherlands

- **Media use of toddlers and implications for sleep: a differentiated story**
  Sigrid Haol-Wimmer, University of Graz, Austria; Marina Egmaier, Institute of Psychology, University of Graz, Austria; Helmut Lackner, Otto Loewi Research Center, Medical University Graz, Austria; Lars Eichen, University of Graz, Austria; Ilona Papousek, Institute of Psychology, University of Graz, Austria; Karoline Rettenbacher, Institute of Psychology, University of Graz, Austria; Christian Rominger, Institute of Psychology, University of Graz, Austria; Catherine Walter-Laager, Department of Educational Sciences, University of Graz, Austria; Manuela Paechter, University of Graz, Austria

- **Inclusive education of students with general learning difficulties: A meta-analysis**
  Sonja Krämer, Christian-Albrechts-University of Kiel, Germany; Jens Möller, Christian-Albrechts-University of Kiel, Germany; Friederike Zimmermann, Kiel University, Germany

- **Relations Between Socioeconomic Status, Stress, Parenting, and Working Memory**
  Kerry Lee, The Education University of Hong Kong, Hong Kong
## SINGLE PAPER: MIXED-METHOD RESEARCH IN HIGHER AND DOCTORAL EDUCATION

**Chair**
Carmen Heckmann, Goethe University Frankfurt, Germany

**Between recognition and exclusion: refugee students in higher Education – Austria’s MORE-Initiative**
Robert Moosbrugger, Johannes Kepler University Linz, Austria; Dimitri Prandner, Johannes Kepler University Linz, Austria

**Developing a Course Experience Questionnaire (CEQ) for evaluating teaching and learning aspects**
Kaire Uiboole, University of Tartu, Estonia; Astra Schults, University of Tartu, Institute of Psychology, Estonia; Irene-Angelica Chountac, University of Tartu, Institute of Education/Institute of Computer Science, Estonia

**Finnish and Danish doctoral students’ academic emotions**
Heinika Anttila, University of Helsinki, Finland; Jenni Sullanmaa, University of Tampere, Finland; Kirsi Pyhältö, University of Helsinki, Finland

## SINGLE PAPER: ARTIFICIAL INTELLIGENCE

**Chair**
Maria Tulis, University of Salzburg, Austria

**Investigating three types of cognitive load when learning with an AI-enriched biology textbook**
Marta Koč-Jaruchta, Linköping University, Sweden; Konrad J. Schönborn, Linköping University, Sweden; Lena A. E. Tibell, Linköping University, Sweden

**Efficient Automatic Coding of PISA Text Responses: Learning from Previous Assessments**
Fabian Zehner, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Nico Andersen, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Julia Mang, TUM School of Education, Germany

**Educational Datification in Policy and Practice- Interoperability as Key in Sweden**
Svea Kiesewetter, University of Gothenburg, Sweden; Annika Bergviken Rensfeldt, University of Gothenburg, Sweden; Thomas Hillman, University of Gothenburg, Sweden; Sofia Serholt, University of Gothenburg, Sweden

## SINGLE PAPER: EDUCATIONAL TECHNOLOGY AND MIXED-METHOD RESEARCH

**Chair**
Juulia Lahdenperä, Häme University of Applied Sciences, Finland

**Encouraging Students’ Autonomy, Competence and Satisfaction: the Role of Learning Analytics**
Elise Ameloot, Ghent University, Belgium; Bart Rientes, Open University, United Kingdom; Tijs Rotsaert, Ghent University, Belgium; Tammy Scheikens, Ghent University, Belgium

**Validity and Learning in Resource-Rich Assessment: Convergent Evidence from Three Empirical Studies**
Tobias Habicher, ETH Zurich, Switzerland

**Student Engagement in the Lockdown Period - A Mixed Methods Approach in Swiss Teacher Education**
Franziska Zellweger, Zurich University of Teacher Education, Switzerland; Mirjam Kocher, University of Education Zurich, Switzerland

## SINGLE PAPER: PHENOMENOGRAPHY AND MATHEMATICS

**Chair**
Carla Oonk, Wageningen University, Netherlands

**Teaching a structural approach as an outset for learning subtraction bridging through ten**
Angelika Kulberg, University of Gothenburg, Sweden; Tuula Maurula, University of Gothenburg, Sweden; Ulla Runesson Kempe, Jönköping University, Sweden

**The meaning of number relations: 7-yearolds solving subtraction tasks**
Camilla Björklund, University of Gothenburg, Sweden; Ulla Runesson Kempe, Jönköping University, Sweden

**Different opportunities to learn subtraction bridging through ten in grade 1**
Anna-Lena Ek Dahl, Jönköping University, Sweden; Maria Nord, University of Gothenburg, Sweden; Angelika Kulberg, University of Gothenburg, Sweden
### Session D: 9 | Time: 15:45-16:45 | Location: Session Room 8

**SINGLE PAPER: COMMUNITIES OF LEARNERS IN HIGHER EDUCATION**

**Chair**  
Ida Kukliansky, Ruppin Academic Center, Israel

**Validation of the Community of Inquiry Framework in the COVID-19 Semester: A Mixed-Method Study**  
Mutfu Sen Akbulut, Bogazici University, Turkey; Duygu Umutlu, Bogazici University, Turkey; Diler Oner, Bogazici University, Turkey; Serkan Arkan, Bogazici University, Turkey

**Toward critical thinking using the Community of Inquiry framework in university online teaching**  
Eva Kaczko, University of Innsbruck, Austria; Austria; Annette Ostendorf, University of Innsbruck, Austria, Germany

**Online learning practices and affordances in undergraduate education: a mixed method study**  
Andres Araco, University of Oslo - IPED, Norway; Crina Damsa, University of Oslo, Norway

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### Session D: 10 | Time: 15:45-16:45 | Location: Session Room 9

**SINGLE PAPER: EXPERIMENTAL STUDIES IN MULTIMEDIA LEARNING**

**Chair**  
Salome Wagner, University of Tübingen, Germany

**Do Refutation Texts Foster Teachers’ Conceptual Change? Only When Designed in a Personalized Way**  
Anna-Sophia Dersch, Justus-Liebig-Universität Giessen, Germany; Alexander Renkl, Educational and Developmental Psychology Albert-Ludwigs-Universität Freiburg, Germany; Alexander Efet, University of Giessen, Germany

**MetaTutor-IH Performance and Gaze Behaviors Predicted through Metacognitive Judgments**  
Megan Wiedbusch, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

**The Effects of (Un)Supportive Gaze Cues in Video Modelling Examples on Learning and Attention**  
Tim van Marlen, Utrecht University, Netherlands; Suzanne Gerritsen, Utrecht University, Netherlands; Bob Timmar, University Utrecht, Netherlands; Vincent Hooogerheide, Utrecht University, Netherlands; Halszka Maria Jaroszka, Open University of the Netherlands, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

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### Session D: 11 | Time: 15:45-16:45 | Location: Session Room 7

**WORKSHOP: TEACHING STUDENTS HOW TO CONSTRUCT AND USE DIAGRAMS**

**Teaching students how to construct and use diagrams**  
Emmanuel Manalo, Kyoto University, Japan; Yuri Uesaka, The University of Tokyo, Japan

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### Session D: 12 | Time: 15:45-16:45 | Location: Session Room 1

**ESPRESSO INVITED SYMPOSIUM: SIG 18: EDUCATIONAL EFFECTIVENESS AND IMPROVEMENT DURING COVID-19: CHALLENGES AND LESSONS.**

**Chairs**  
Tobias Feldhoff, Johannes Gutenberg University of Mainz, Germany; Joris Fadda, University of Antwerp, Belgium

**Discussant**  
Charalampos Charalambous, University of Cyprus, Cyprus

**Steering relations and school improvement. Covid-19-related changes in Dutch primary schools.**  
Amroul Oude Groot, Beheer, Radboud University Nijmegen, Netherlands; Marlies Honing, Radboud Universiteit Nijmegen, Netherlands; Femke Geijsel, Radboud University Nijmegen, Netherlands; Floor Basten, Open Universiteit Nederland, Netherlands

**Challenges schools face during the COVID-19 crisis and how they change over time**  
Tobias Feldhoff, Johannes Gutenberg University of Mainz, Germany; Nina Jude, University Heidelberg, Germany; Katharina Maag Merki, University of Zurich, Switzerland; Falk Radisch, Institute of school education and educational research, Germany; Stefan Brauermann-Sajkiewicz, Alpen-Adria-University, Institute of instructional and school development, Austria; Kai Maaz, Leibniz Institute for Research and Information in Education, Germany; Katharina Kriegbaum, Heidelberg University, Germany

**Students motivation and well-being during and after the lockdown: Lessons for the future**  
Sébastien Delissé, Université catholique de Louvain (UCL), Belgium; Noémie Baudoin, Université catholique de Louvain (UCL), Belgium; Dominique Latfontaine, Université de Liège, Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium; Ariane Baye, University of Liège, Belgium; Françoise Crepin, Université de Liège, Belgium
### Collaborative Workspace: University Teacher and Student Well-being: Interrelations, Impact of COVID-19, and Future Directions

**University Teacher and Student Well-being: Interrelations, Impact of COVID-19, and Future Directions**

Lisa Kiltz, University of Groningen, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands; Martin Daumiller, University of Augsburg, Germany

### Roundtable: Experimental Studies

**Chair**  
Fira Arityanti, University of Szeged, Doctoral School of Education, Hungary

**Dynamic Interactive Visualizations in Economics – An Experimental Study**

Stefanie Findelsen, University of Konstanz, Germany; Josef Guggemos, University of St.Gallen, Switzerland

**Effectiveness of psychomotor therapy for children with graphomotor impairments**

Sibylle Hurschler Lichtsteiner, Languages and handwriting research group, University of Teacher Education, Lucerne, Switzerland; Werner Wicki, Languages and handwriting research group, University of Teacher Education Lucerne, Switzerland; Melanie Niederöst, University of Teacher Education of Lucerne, Switzerland; Christian Marquardt, ScienceMotion GmbH, Germany; Carlo Di Brina, Department of Human Neuroscience, Sapienza University of Rome, Italy, Italy

### Invited Symposium: EFG: Effort Monitoring and Regulation (EMR): First Findings from a Novel Framework

**Chair**  
Anique de Bruin, Maastricht University, Netherlands

**Organiser**  
Anique de Bruin, Maastricht University, Netherlands

**Discussant**  
Shana Carpenter, Iowa State University, United States

**How are appraisals of effort, confidence, and task difficulty related to objective task performance?**

Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany; Rakefet Ackerman, Technion - Israel Institute of Technology, Israel; Vincent Hoogerheide, Utrecht University, Netherlands; EFG3 MRE, Maastricht University, Netherlands

**Students' Effort Monitoring during Interleaved and Blocked Practice**

Eva Janssen, Utrecht University, Netherlands; Laura van de Groep, Utrecht University, Netherlands; Anne de Lange, Utrecht University, Netherlands; Erdem Onan, Maastricht University, Netherlands; Wissu Wiradhany, Bina Nusantara University, Indonesia; Tamara Van Gog, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; EFG3 MRE, Maastricht University, Netherlands

**Embracing the pain: The role of effort in choosing (in)effective learning strategies**

Erdem Onan, Maastricht University, Netherlands; Wissu Wiradhany, Bina Nusantara University, Indonesia; Felicitas Biewer, Maastricht University, Netherlands; Eva Janssen, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Erdem Onan, Maastricht University, Netherlands; EFG3 MRE, Maastricht University, Netherlands

**How can we optimize monitoring during complex learning?**

Julian Roelle, Ruhr University Bochum, Germany; Tino Endres, University of Freiburg, Germany; Julia Waldeyer, Ruhr-University Bochum, Germany; Martine Baars, Erasmus University Rotterdam, Netherlands; Alexander Renkl, University of Freiburg, Germany; EFG3 MRE, Maastricht University, Netherlands
Session E: 1  |  Time: 17:30-18:30  |  Location: Session Room 9

**ESPRESSO SYMPOSIUM: DIGITAL CITIZENS IN EVOLVING ECOSYSTEMS (PART 2): EQUITY ISSUES OF LEARNING LIVES IN TRANSITION**

**Chair**  
Halla Holmardottir, Oslo Metropolitan University, Norway

**Discussant**  
Nancy Law, University of Hong Kong, Hong Kong

Students' learning experiences during COVID-19 and familial SES  
Cheng Yong Tan, The University of Hong Kong, Hong Kong; Qianqian Pan, The University of Hong Kong, Hong Kong; Yuxiao Zhang, The University of Hong Kong, Hong Kong; Min Lan, The University of Hong Kong, Hong Kong; Patrick Lam, The University of Hong Kong, Hong Kong; Nancy Law, University of Hong Kong, Hong Kong

Digitally deprived children in Europe  
Sara Ayllón, Universitat de Girona, Spain; Samuel Lado, Universitat de Girona, Spain; Halla Holmardottir, Oslo Metropolitan University, Norway

Student well-being during COVID: Navigating through different phases of school suspension  
Xiao Hu, The University of Hong Kong, Hong Kong; Runzhi Kong, The University of Hong Kong, Hong Kong; Nancy Law, University of Hong Kong, Hong Kong

Digital Social Capital and Well-being of Digital Citizens  
Shihui Feng, University of Hong Kong, Hong Kong; Nancy Law, University of Hong Kong, Hong Kong

Session E: 2  |  Time: 17:30-18:30  |  Location: Session Room 2

**ESPRESSO SYMPOSIUM: TEACHERS' AND EDUCATORS' WELL-BEING IN RELATION TO PROFESSIONAL DEMANDS AND DEVELOPMENT**

**Chair**  
Lisa Postareff, HAMK University of Applied Sciences, Finland

**Organiser**  
Lisa Postareff, HAMK University of Applied Sciences, Finland

**Discussant**  
Michelle Helms-Lorenz, University of Groningen, Netherlands

Teachers' epistemic theories and their relations to the job demands, work engagement, and burnout  
Heidi Lammasjärvi, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland

'To teach or not to teach?' An exploration of the career choices of educational professionals  
Tine Mombraa, University of Antwerp, Belgium; Peter Van Petegem, University of Antwerp, Belgium; Kristin Vantommel, University of Antwerp, Belgium

Teachers' work engagement and burnout profiles  
Anni Holmström, University of Turku, Finland; Marjaana Veermaa, University of Turku, Finland; Heta Tuominen, University of Turku, Finland

Supporting well-being of academic staff through a University Teaching Qualification programme  
Ileen Gast, Maastricht University, Netherlands; Madeleine Neelen, University of Maastricht, Netherlands

Session E: 3  |  Time: 17:30-18:30  |  Location: Session Room 14

**ESPRESSO SYMPOSIUM: INTERNATIONAL PERSPECTIVES ON MATHEMATICS TEACHING: TALIS-VIDEO FINDINGS FROM EUROPE AND EAST ASIA**

**Chair**  
V Darleen Opfer, RAND Corporation, United States

**Organiser**  
Eckhard Klieme, German Institute for International Educational Research (DIPF), Germany

**Discussant**  
Courtney Bell, University of Wisconsin, United States

CANCELLED  
Kanji Matsubara, National Institute for Educational Policy Research, Japan; Ayako Oura, National Institute for Educational Policy Research, Japan

The effects of students' prior attainment on their experiences of mathematics teaching  
Jenni Ingram, University of Oxford, United Kingdom; Ariel Lindorff, University of Oxford, United Kingdom; Tannaz McDermott, University of Oxford, United Kingdom; Pamela Sammons, University of Oxford, United Kingdom; Peter Mitchell, University of Oxford, United Kingdom

How valid are student-reported measures of teaching?  
Benjamin Herbert, DIPF | Leibniz Institute for Research and Information in Education, Germany; Jessica Fischer, German Institute for Adult Education · Leibniz Centre for Lifelong Learning, Germany; Eckhard Klieme, German Institute for International Educational Research (DIPF), Germany

Whole class teaching practices and their impact on mathematics learning in England and Shanghai  
Jinjie Xu, International Teacher Education Center, UNESCO, Shanghai (China); China; Yan Zhu, College of Teacher Education, East China Normal University, Shanghai (China), China
MONDAY, 23 AUGUST 2021

Session E: 4 | Time: 17:30-18:30 | Location: Session Room 12

ESPRESSO SYMPOSIUM: THE ROLE OF COMMUNICATIONS TECHNOLOGY IN CREATING AND EXPANDING DIALOGIC SPACE

Chair
Rupert Wegerif, University of Cambridge, United Kingdom

Discussant
Kristina Kumpulainen, University of Helsinki, Finland

Tutors as mediators for dialogical learning communities via WhatsApp
Francesca Amenduni, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Vito Candido, University of Bari, Italy; Susanna Annese, University of Bari, Italy; Maria Beatrice Ligorio, University of Bari, Italy

Simulated Virtual Internships: expanding classroom learning dialogues with voices from enterprise
Alison Twerin, University of Cambridge, United Kingdom; Louis Mayor, University of Cambridge, United Kingdom; Ryan Invan, University of Cambridge, United Kingdom; Rupert Wegerif, University of Cambridge, United Kingdom

Is children’s social networking site usage linked to dialogic thinking?
Athanasia Kotsiou, University of Cambridge, UK, United Kingdom; Rupert Wegerif, University of Cambridge, United Kingdom

How microblogging affords conditions for the realisation of student voices about sensitive topics
Ingvill Rasmussen, University of Oslo, Norway; Jo Johansen Freytag, University of South-Eastern Norway, Norway; Sten Ludvigsen, Oslo University, Norway

Session E: 5 | Time: 17:30-18:30 | Location: Session Room 18

INVITED WORKSHOP: HOW TO DO A PEER REVIEW? A WORKSHOP ON LEARNING TO REVIEW FOR EARLI CONFERENCES AND JOURNALS

Chairs
Antti Rajala, University of Oulu, Finland; Crina Damsa, University of Oslo, Norway

How to Do a Peer Review? A Workshop on Learning to Review for EARLI Conferences and Journals
Roger Säljö, University of Gothenburg, Sweden; Piet Van den Bossche, University of Antwerp, Belgium; Sangeeta Bagga-Gupta, Jönköping University, Sweden; Lars-Erik Malmberg, University of Oxford, United Kingdom; Thomas Martens, Medical School-Hamburg, Germany

Session E: 6 | Time: 17:30-18:30 | Location: Session Room 13

ROUNDTABLE: LEARNING AND PROFESSIONAL DEVELOPMENT

Chair
Christian Hartes, University of Paderborn, Germany

Workplace affordances facilitating students’ workplace learning: A qualitative exploration
Liekie Ceelen, Open University of the Netherlands, Netherlands; Anne Khaled, HU University of Applied Sciences, Netherlands; Look Nieuwenhuis, HAN University of Applied Sciences, Netherlands; Elly de Brujin, Hogeschool Utrecht / OU, Netherlands

The role of digital activities in the development of social competence and civic participation
Stefanie Findelsen, University of Konstanz, Germany; Doreen Holtzsch, University of Teacher Education St.Gallen, Switzerland; Nicole Bruderer, University of Teacher Education St.Gallen, Switzerland; Sabrina Müller, University of Zurich, Switzerland; Thomas Schlap, University of Zurich, Switzerland

Exploring the relationship between mental simulation and intuition in crisis response work
Blanca Steffen, University of Paderborn, Germany; Michael Goller, Friedrich Schiller University Jena, Germany; Christian Hartes, University of Paderborn, Germany

Session E: 7 | Time: 17:30-18:30 | Location: Session Room 17

ROUNDTABLE: ASSESSMENT METHODS AND TOOLS

Chair
Prajakt Pande, Roskilde University, Denmark

Rater Error in Standardized Observations of Teaching: Challenges from Latently Continuous Dimensions
MArk White, University of Oslo, Norway; Kirsti Klett, University of Oslo, Norway

The validation of attitude toward science questionnaire among Indonesian undergraduate students
Azizul Ghofar CandraWicaksono, University of Szeged, Doctoral School of Education, Hungary; Erzsebet Korom, University of Szeged, Hungary

Pre-service teachers’ summative assessment literacy, Reflections on teacher education
Birgitta Fröjdendahl, Department of Language Education, Stockholm University, Sweden; Ali Yıldırım, University of Gothenburg, Sweden; Anne Dragemark Oscarson, University of Gothenburg, Sweden; Raldi Hilden, University of Helsinki, Finland
## ESPRESSO PAPER: EXPERIMENTAL STUDIES IN MATHEMATICS AND NUMERACY

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<th>Tina Seufert, Ulm University, Germany; Melina Klepsch, Ulm University, Germany</th>
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<td>The development of number word learning in bilingual children: Evidence from Singapore</td>
<td>Pinna Cheung, National Institute of Education/Nanyang Technological University, Singapore, Singapore; Daphne Ang, National Institute of Education/Nanyang Technological University, Singapore, Singapore</td>
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<td>Numeral ordering skills and the ordinality of small numbers</td>
<td>David Munez, National Institute of Education / Nanyang Technological University, Singapore; Josefu Orrantia, University of Salamanca, Spain; Laura Matilla, Facultad de Educacion, Universidad de Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain</td>
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<td>Perspective differences in the measurement of teaching quality – a matter of item reference?</td>
<td>Christine Johannes, University of Erfurt, Germany; Tina-Myrica Daunicht, Friedrich Alexander University of Erlangen-Nuremberg, Germany</td>
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<td>Disentangling Effect Sizes and Inferential Statistics in Science Communication</td>
<td>Kirstin Schmidt, University of Education Karlsruhe, Germany; Samuel Merk, University of Tübingen, Germany</td>
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<td>Manipulatives and symbolic tools in mathematics education for pupils with learning disabilities</td>
<td>Steffen Siegemund-Johannisen, Institute of Special Education - Europa-Universität Flensburg, Germany</td>
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## ESPRESSO PAPER: EDUCATIONAL THEORY

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<th>Why situativity and tangible things matter to learning computational thinking in school</th>
<th>Nina Bonderup Dohn, University of Southern Denmark, Denmark; Stig Bensen Hansen, University of Southern Denmark, Denmark</th>
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<td>Designing for motivation in learning Computational Thinking within science education</td>
<td>Niels Dohn, Aarhus University, Denmark; Margrethe H. Meiler, University of Southern Denmark, Denmark; Nina Bonderup Dohn, University of Southern Denmark, Denmark</td>
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<td>Supporting Computational Thinking with Design Activities</td>
<td>Daniel Spikol, University of Copenhagen, Denmark; Melissa Kaivo, Arduino Verkstad AB, Sweden; David Quertilles, Arduino Verkstad AB, Sweden</td>
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<td>Productive tensions: Computational things in preschool and school practices</td>
<td>Ane Bjerre Odgaard, University of Southern Denmark, Denmark; Roland Hashmann, University Southern Denmark, Denmark</td>
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<td>Options for handling complex problems of global change from the perspective of children</td>
<td>Sarah Gaubitz, Uni Siegen, Germany</td>
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<td>The active and dynamic materiality in maker-centered learning</td>
<td>Varpu Mehto, University of Helsinki, Finland; Noora Bosch, University of Helsinki, Finland; Kajju Kangas, University of Helsinki, Finland; Pirta Siltamaa-Hakkarainen, University of Helsinki, Finland</td>
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### ESPRESSO PAPER: PRE-SERVICE TEACHER EDUCATION

**Chair**
Carmela Aprea, University of Mannheim, Germany

- Hard to resist – difficult to predict? Person-related predictors of misconceptions in education
  Jana Asberger, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

- Promoting reflection about Teaching and Learning with Metaphors – Insights of a DBR-Project
  Franco Rau, University of Vechta, Germany

- Effects of different scaffolds in a video-based learning environment for pre-service teachers
  Marie Irmer, LMU Munich, Faculty of Biology, Biology Education, Germany; Dagmar Frick, LMU Munich, Faculty of Biology, Biology Education, Germany; Birgit J. Neuhaus, LMU Munich, Germany; Christian Förtsch, LMU Munich, Germany; Maria Kramer, Ludwig-Maximilians-Universität Munich, Germany

- Comparison for fostering student teachers’ knowledge about scaffolding
  Sabrina Stiel-Dämmer, University of Koblenz-Landau, Germany; Anke Maria Weber, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz - Landau, Germany

- Teachers as informed pragmatists: supporting teacher students’ didactic reasoning by journal writing
  Christina Schuba, Albert-Ludwigs-University Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

- How expert feedback influences the development of pre-service teachers’ professional vision
  Christopher Neil Prillp, Leuphana University Lueneburg / University of Hamburg, Germany; Kira Elena Weber, Leuphana University Lueneburg, Germany; Marc Kleinhechte, Leuphana University Lueneburg, Germany

### ESPRESSO PAPER: COLLABORATIVE LEARNING

**Chair**
Erkki Sointu, University of Eastern Finland, Finland

- Anonymity as an instructional scaffold in peer assessment in higher education contexts
  Tijs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium

- Sequential patterns of micro-level interactions in teacher professional learning communities
  Marieke Thurlings, Eindhoven University of Technology, Netherlands; Marloes Hendriks, Eindhoven University of Technology, Netherlands; Perry den Brok, Wageningen University & Research, Netherlands

- Disparity in teachers’ collaboration and schools' capacity for change
  Lisa Maria Schaefer, University of Zurich, Switzerland; Thorsten Bohl, University of Tübingen, Germany; Albrecht Wacker, University of Education Ludwigsburg, Germany

- Effect of metacognitive interaction on individual and group performance in collaborative learning
  Eetu Haataja, University of Oulu, Finland; Muhterem Dindar, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

- The relation of physiological synchrony with success in collaborative exam
  Eetu Haataja, University of Oulu, Finland; Muhterem Dindar, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

- Academic Virtual Mobility Design: Synchronous interaction and collaboration in international teams
  Katerina Holubíková, Fen,Unij Hagen, Germany, Germany; Christian M. Stracke, Open University of the Netherlands, Netherlands; Panu Forsman, University of Jyväskylä, Finland; Francis Brouns, Open Universiteit, Netherlands

### INVITED SYMPOSIUM: EFG: MOMENTARY SITUATED ENGAGEMENT, LEARNING AND PERFORMANCE

**Chair**
Ricardo Böheim, University of Augsburg, Germany

- Organisers
  Jennifer Symonds, University College Dublin, Ireland; Ricardo Böheim, University of Augsburg, Germany

- Discussant
  ANASTASIA / NATASSA KYRIAKOPOULOU, National & Kapodistrian University of Athens, Greece

- “Observing Things”: Using ICANs to promote science belonging, interest, and learning
  K. Ann Renninger, Swarthmore College, United States; Lux Barton, Swarthmore College, United States; Kadita Diao, Swarthmore College, United States; Krista Smith-Harke, Swarthmore College, United States; Feven Yared, Swarthmore College, United States

- Metacognition under the microscope. Triangulating assessment of metacognition during problem-solving
  Charlotte Dignath, DIPF Leibnitz Institute for Education Research Frankfurt, Germany

- How school and classroom context explain children’s momentary behavioural engagement
  Jennifer Symonds, University College Dublin, Ireland; Aisling Davies, University College Dublin, Ireland; Seaneen Sloan, University College Dublin, Ireland; Dymoña Devine, University College Dublin, Ireland; Gabriella Martinez Sainz, University College Dublin, Ireland; Tamsyn Blue, University College Dublin, Ireland
### Session F: 1
**Time:** 18:45-19:45  
**Location:** Session Room 4

#### SINGLE PAPER: MIXED-METHOD RESEARCH

**Chair**
Marjana Kangas, University of Lapland, Finland

**Teaching Controversial Topics in Elementary and Primary Schools**
Monika Giger, Pädagogische Hochschule Steiermark, Institut für Elementar- und Primarpädagogik, 8010 Graz, Österreich; Britta Breser, KIRCHLICHE PÄDAGOGISCHE HOCHSCHULE der Diözese Graz-Seckau, Austria

**Pupils' individual differences in science and technology education: learning outcomes and process**
Tessa Slim, Hogeschool IPABO Amsterdam/Akmaar / Vrije Universiteit Amsterdam, Netherlands; Johanna van Schaik, Radboud University, Netherlands; Anna Hetze, Hogeschool IPABO Amsterdam/Akmaar, Netherlands; Maarja Rajmakers, University of Amsterdam, Netherlands

**Professional identity development of student teachers**
Christa Dekker, Katholieke Pabo Zwolle, Netherlands; Marieke Pillen, Katholieke Pabo Zwolle, Netherlands; Jetje Pauw, Hogeschool KPF, Netherlands

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### Session F: 2
**Time:** 18:45-19:45  
**Location:** Session Room 18

#### SINGLE PAPER: MATHEMATICS AND PROBLEM SOLVING

**Chair**
Eva Wennäs Brante, Malmö University, Sweden

**Do students show higher interest and performance when solving self-generated math problems?**
Janina Krawitz, University of Münster, Germany; Luisa-Marie Hartmann, University of Münster, Germany; Stanislav Schukajlow, University of Münster, Germany

**What Features of Equivalence Problems Relate to Adults' Problem-Solving Performance?**
Emina Simsek, Loughborough University, United Kingdom; Ian Jones, Loughborough University, United Kingdom; Iro Xenidou Dervou, Loughborough University, United Kingdom

**Effect of Including a Context Situation in a Math Problem Statement**
Irene Ferrando, Dept. de Didáctica de las Matemáticas - Universidad de Valencia, Spain; Carlos Segura, Universidad de Valencia, Spain

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### Session F: 3
**Time:** 18:45-19:45  
**Location:** Session Room 16

#### SINGLE PAPER: PEER INTERACTION IN SPECIAL EDUCATION

**Chair**
Rikka Hirvonen, University of Eastern Finland, Finland

**The active participation of young adults with intellectual disability in goal-setting discussions**
Ana Luisa Rubio Jimenez, University of Cambridge, United Kingdom

**Inclusive entanglement of friendship networks and academic peer assistance in primary school**
Kati Sormunen, University of Helsinki, Finland; Tuire Palonen, University of Turku, Finland; Evelina Niskala, University of Helsinki, Finland; Hanna Reunus, University of Helsinki, Finland; Netta Tilpana, University of Helsinki, Finland

**Primary school students’ contact experiences and their attitudes towards peers with disabilities**
Marwin Felix Loepfer, Paderborn University, Germany; Susanne Schwab, University of Vienna, Austria; Frank Hellmich, Paderborn University, Germany

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### Session F: 4
**Time:** 18:45-19:45  
**Location:** Session Room 1

#### SINGLE PAPER: PRE-SERVICE AND IN-SERVICE TEACHER EDUCATION

**Chair**
Kristina Schick, Technische University of Munich, Germany

**Patterns in professional relationships between trainee teachers and their mentors: An LPA approach**
Michael Goller, Friedrich Schiller University Jena, Germany; Tobias Kaerner, University of Konstanz, Germany; Elisabeth Mauß, University of Konstanz, Germany; Caroline Bonnes, University of Konstanz, Germany

**Artificial Intelligence in Teacher Education: A Systematic Review of Research**
ISMAIL CELIK, University of Oulu, Finland; Finland; Muhterem Dindar, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland

**Teachers’ Professional Digital Competence, Transformative Digital Agency and TeachMeets**
Stine Brynildson, UiT University College, Norway; Ika Nagel, UiT University College / University of Oslo, Norway; Irina Engeness, UiT University College, Norway
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**Time:** 18:45-19:45  
**Location:** Session Room 17

#### SINGLE PAPER: ATTITUDES AND BELIEFS IN TEACHING AND INSTRUCTION

**Chair**  
Mikael De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l’Enseignement Supérieur (ARES), Belgium

**Implementing and evaluating growth mindset pedagogy with Finnish elementary school teachers**  
Inkeri Rissanen, Tampere University, Finland; Sonja Laine, University of Helsinki, Finland; Lina Puusepp, University of Helsinki, Finland; Elinna Kuusisto, Tampere University, Finland; Kiri Tiri, University of Helsinki, Finland

*Every student can succeed! How a brief intervention reduces teachers’ domain-specific fixed mindsets*  
Anke Heyder, Technical University Dortmund, Germany; Ricarda Steinmayr, TU Dortmund, Germany; Andrei Cimpian, New York University, United States

**Teachers’ Growth Mindsets and Their Differential Treatment of Low- and High-Ability Students**  
Alexander Brownman, College of the Holy Cross, United States; David Miele, Boston College, United States; Sidney May, Boston College, United States; Shervina Perez, Boston College, United States; Ruth Butler, Hebrew University of Jerusalem, Israel

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### Session F: 6
**Time:** 18:45-19:45  
**Location:** Session Room 13

#### SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH IN PRE-SERVICE TEACHER EDUCATION

**Chair**  
Franziska Zellweger, Zurich University of Teacher Education, Switzerland

**Preservice teachers’ judgments - Do normative criteria and students’ background matter?**  
Christin Laschke, Humboldt-Universität zu Berlin, Germany; Bettina Roesken-Winter, Humboldt-Universität zu Berlin, Germany; Sven Schueler, Humboldt-Universität zu Berlin, Germany

*The influence of knowledge and available time on teachers’ diagnostic judgments on tasks*  
Andreas Rue, PH Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Katharina Lohl, University of Education Freiburg, Germany

*A start-up environment as a field-based practicum for technology teacher education*  
Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Clemens Wasbel, University of Teacher Education St.Gallen, Switzerland

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### Session F: 7
**Time:** 18:45-19:45  
**Location:** Session Room 2

#### SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH AND EDUCATIONAL TECHNOLOGY

**Chair**  
Maria Zimmermann, Humboldt University of Berlin, Germany

**The News Evaluator: An evidence based tool to support digital civic literacy in a world of fake news**  
Thomas Nygren, Department of Education, Sweden; Mona Guath, Department of Education, Uppsala University, Sweden; Carl-Anton Werner Axelsson, Division of Visual Information and Interaction, Department of Information Technology, Uppsala University, Sweden

*Video-Based Instruction in Flipped and Non-Flipped Classrooms: When Is It Effective and for Whom?*  
Marlene Wagner, Johannes Kepler University Linz, Austria; Detlef Urhahne, University of Passau, Germany

*Investigating students’ perceived benefits of system- vs. teacher-based learning analytics feedback*  
Claara Schumacher, Humboldt Universität zu Berlin, Germany; Dirk Ilenthaler, University of Mannheim, Germany

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### Session F: 8
**Time:** 18:45-19:45  
**Location:** Session Room 8

#### SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION

**Chair**  
Leah Primor, Haifa University, Israel

**Prospective primary teachers’ flexible use of arithmetic concepts, procedures, and strategies**  
Andreas Schütz, Zurich University of Teacher Education, Switzerland

**The Quality of Explanation Videos and their Relationship to Preservice Teacher Competencies**  
Matte Ring, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany

**Mathematics teacher students’ use of instructional videos**  
Anna-Katharina Poschhamp, Leuphana University of Lüneburg, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany; Timo Ehmke, Leuphana University of Lüneburg, Germany; Posti Kuhl, Leuphana Universität Lüneburg, Germany
### Session F: 9 | Time: 18:45-19:45 | Location: Session Room 5

**SINGLE PAPER: EXPERIMENTAL STUDIES IN PRE-SERVICE TEACHER EDUCATION**

| Chair | Reflective Goal-Setting Improves Academic Achievement; A Large-Scale Field Experiment  
Izaak Deeks, Erasmus University Rotterdam, Netherlands; Michéla Schippers, Erasmus University Rotterdam, Netherlands; Erik Van Schooten, Kohnstamm Institute, University of Amsterdam, Netherlands  
Effects of automatic adaptive AI-based feedback on diagnostic skills of pre-service teachers  
Michael Sailer, LMU Munich, Germany; Elisabeth Bauer, Ludwig-Maximilians-Universität (LMU), Germany; Rikka Hofmann, University of Cambridge, United Kingdom; Jan Kiesewetter, University of Munich, Germany; Julia Gläs, Ludwig Maximilians Universität (LMU), Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany  
Acquiring Professional Vision by Classroom Video: Effects of Segmenting and Self-Explanation Prompts  
Monika Martin, Albert-Ludwigs-Universität Freiburg, Germany; Meg Farrell, Technische Universität München, Germany; Tina Södel, Technische Universität München, Germany; Werner Riell, University of Education Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany |

### Session F: 10 | Time: 18:45-19:45 | Location: Session Room 7

**SINGLE PAPER: E-LEARNING AND ONLINE LEARNING**

| Chair | Unexpected effect of individualized mastery assessment feedback in short online grammar courses  
Uwe Maier, University of Education Schwäbisch Gmünd, Germany  
Challenges and opportunities experienced by Swiss VET teachers during the shift to remote teaching  
Francesca Amenduni, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Martina Rausseo, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland  
Digitally supported teaching and learning during the first COVID-19 lockdown  
Mandy Hommel, OTH Amberg-Weiden, Germany  
Understanding English teachers’ non-volitional use of online teaching during the COVID-19 pandemic  
Fang Huang, Qingdao University, China; Timothy Teo, Murdoch University, Australia |

### Session F: 11 | Time: 18:45-19:45 | Location: Session Room 11

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN STUDENT LEARNING**

| Chair | A qualitative study of the academic challenges and help-seeking processes of high and low achievers  
Francesca Suter, University of Zurich, Switzerland; Carmen Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland  
Knowledge is power – but you should use it!  
Sebastian Trepteohl, Ruhr-Universität Bochum, Germany; Julia Waldeyer, Ruhr-University Bochum, Germany; Jens Fleischer, University of Duisburg-Essen, Germany; Julian Roelle, Ruhr University Bochum, Germany; Deltev Leutner, University of Duisburg-Essen, Germany; Joachim Wirth, Ruhr-University Bochum, Germany  
Regulation in Collaborative Learning: An Expert Study to Assess Immediate of Regulation Strategies  
Martin Greisel, University of Augsburg, Germany; Laura Spang, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany |

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<td><strong>Student academic motivation during the COVID-19 lockdown: A cross-country comparison</strong> Ana Camacho, University of Porto and Polytechnic Institute of Porto, Portugal; Nadine Correia, Instituto Universitário de Lisboa, Portugal; Sonia Zaccocletti, University of Padova, Italy; Cecilia Aguiar, Instituto Universitário de Lisboa, Portugal; Lucía Mason, University of Padova, Italy; Rui Alexandre Alves, University of Porto, Portugal; João Daniel. ISPA - Instituto Universitário, Portugal</td>
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<td><strong>The Science Task Value Dynamics among Elementary students – A Longitudinal Study from Grade 1 to 5</strong> Janica Vinni-Laakso, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Kalle Juuti, University of Helsinki, Finland; Anni Loukomies, University of Helsinki, Finland; Katarina Salmen-Aro, Helsinki University, Finland</td>
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<td><strong>Short-Term Relations Between Students’ Situated Expectancies and Task Values in the Math Domain</strong> Daria Katharina Benden, TU Dortmund University, Germany; Fani Lauermann, TU Dortmund University, Germany</td>
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<td><strong>Student resources as mediational means in school science conversations</strong> Anniken Furberg, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway</td>
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<td><strong>We play the future: Exploring digital transformation in kindergarten through pretend play</strong> Lena Hostenstein, University of Teacher Education St.Gallen, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland</td>
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<td><strong>Examining the product and process features in the oral narratives of young children</strong> Anna Llaurado, UCL, United Kingdom; Emma Sumner, UCL, United Kingdom; Jessica Massonvive, UCL, France; Julie Dockrell, Institute of Education, United Kingdom</td>
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<td><strong>Chair</strong> Benzi Slakmon, Tel Aviv University, Israel</td>
<td><strong>Scholastic and Parental Homework Assistance. Effects on Students’ Achievement and Homework Behaviour</strong> Lisa Benckwitz, IPN Leibniz Institute for Science Education, Germany; Karin Gull, IPN Leibniz Institute for Science Education, Germany; Janina Roelof-Buchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany</td>
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<td><strong>Parental involvement in homework during Covid-19 confinement in Spain</strong> Natalia Suárez-Fernández, University of Oviedo, Spain; José Carlos Núñez, University of Oviedo, Spain; Estrella Fernandez Alba, University of Oviedo, Spain; Pedro Rosário, Universidade do Minho, Portugal</td>
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<td><strong>Developing Argument Skill Through Collaborative Engagement in Argumentation</strong> Kalypso Iordanou, University of Central Lancashire, Cyprus; Dora Tziaki, University of Central Lancashire Cyprus, Cyprus</td>
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**INVITED SYMPOSIUM: SIG 7: WHAT MACHINE LEARNING OFFERS TO LEARNING AND INSTRUCTION: POTENTIAL & ETHICAL CONSIDERATIONS**

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<td>Margot van Wermeskerken, Erasmus Medical Center, Netherlands</td>
<td>Rosemary Southwell, University of Colorado at Boulder, United States; Caitlin Mills, University of New Hampshire, United States; Sidney D'Mello, University of Colorado Boulder, United States</td>
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<tr>
<th>Organiser</th>
<th>How the Design of Teacher Tools Based on Learning Analytics May Be Shaped by Different Use Scenarios</th>
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<tr>
<td>Andreas Lachner, University of Tübingen, Germany</td>
<td>Vincent Alevrin, Carnegie Mellon University, United States; Bruce McLaren, Carnegie Mellon University, United States; Francesca Xhakaj, Carnegie Mellon University, United States; Kenneth Holstein, Carnegie Mellon University, United States</td>
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<tr>
<th>Discussant</th>
<th>Can and Should we Assess and Optimize Learners' Engagement and Cognitive Load with Machine Learning?</th>
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<tr>
<td>Paul Prinsep, University of South Africa (Unisa), South Africa</td>
<td>Peter Geijts, Institut für Wissensmedien / University of Tübingen, Germany; Birgit Brucker, Leibniz-Institut für Wissensmedien (IWM), Germany; Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Erkeleşda Kasnecci, University of Tübingen, Germany</td>
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<tr>
<td>Session G: 1</td>
<td>Time: 09:00-10:00</td>
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<tr>
<td><strong>SINGLE PAPER: MOTIVATION</strong></td>
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<tr>
<td><strong>Chair</strong> Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland</td>
<td><strong>University students' epistemic profiles, study engagement, self-regulation and interest</strong> Kirsti Lonka, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Jan Vermunt, Eindhoven University of Technology, Netherlands</td>
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<td><strong>Investigating the links between learning approach, epistemic beliefs, motivation and social support</strong> Manuel Bächtold, University of Montpellier, France; Jacqueline Papet, University of Montpellier, France; Dominique Bara Asensio, University of Montpellier, France; Sandra Bome, University of Montpellier, France; Kevin De Chechti, University of Montpellier, France; Agnieszka Jezorska, University of Montpellier, France; Philippe Gabriel, University of Avignon, France; Florence Cassignol, University of Perpignan, France</td>
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<td><strong>Introducing a dynamic situated expectancy-value model of moment-to-moment developmental dynamics</strong> Julia Moeller, Universität Leipzig, Germany; Jaana Viljaranta, University of Eastern Finland, Finland; Asko Tolvanen, University of Jyväskylä, Finland; Julia Dietrich, Friedrich-Schiller-Universität Jena, Germany</td>
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<th>Session G: 2</th>
<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: SELF-EFFICACY AND TEACHER EFFECTIVENESS</strong></td>
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<tr>
<td><strong>Chair</strong> Izaak Dekker, Erasmus University Rotterdam, Netherlands</td>
<td><strong>Measuring teachers’ teaching self-efficacy beliefs in higher education</strong> Irene Douswe-van Ark, University of Groningen, Netherlands; Ine Noben, University of Groningen, Netherlands; Jan Folkert Deiunum, University of Groningen, Netherlands</td>
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<td><strong>Antecedents of Person-job-fit. A comparison of early, mid- and late-career teachers.</strong> Anita Sandmeier, The Schwyz University of Teacher Education, Switzerland</td>
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<td><strong>Does spirituality or religiosity make a difference in explaining teachers’ professional beliefs?</strong> Manfred L. Piner, University of Erlangen-Nuremberg, Germany; Marcus Perthen, Friedrich Alexander-Universität Erlangen-Nürnberg, Germany</td>
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<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION</strong></td>
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<td><strong>Chair</strong> Florencia Gomez Zaccarelli, Pontificia Universidad Católica de Chile, Chile</td>
<td><strong>Unsolvable gender problems – postfeminist discourses in the talk of future physics teachers</strong> Johanna Larsson, Uppsala University, Sweden; Anders Johansson, Chalmers University of Technology, Sweden</td>
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<td><strong>Comparing three interventions to promote diagnostic competence in pre-service teachers</strong> Lea Grotgeut, Universität Paderborn, Germany; Katrin Klingseck, Universität Paderborn, Germany</td>
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<td><strong>Practice-based Teacher Education: Learning Sequence through Collaboration and Critical Thinking</strong> Alejandro Meneses, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; María Graciela Veas, Pontificia Universidad Católica de Chile, Chile; Silvana Arriagada, Pontificia Universidad Católica de Chile, Chile</td>
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<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: GAME-BASED LEARNING IN MATHEMATICS</strong></td>
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<td><strong>Chair</strong> Leonie Johann, NORD University, Norway</td>
<td><strong>A game-based approach to promoting adaptive expertise with rational numbers</strong> Jake McMullen, University of Turku, Finland; Anni Koskinen, University of Tampere, Finland; Tomi Kärki, University of Turku, Finland; Antero Lindstedt, University of Tampere, Finland; Saku Määttä, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland; Minna Hämälä-Sormunen, University of Turku, Finland; Kristian Kilii, Tampere University, Finland</td>
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<td><strong>Effects of Digital Games on Student Motivation in Mathematics: A Meta-analysis in K-12</strong> Daniela Fadda, University of Cagliari, Italy; Marta Pellegini, University of Florence, Italy; Giuliano Vivanel, University of Cagliari, Italy; Claudio Zandonella Callegari, University of Padua, Italy</td>
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<td><strong>Game elements increase engagement: Evidence from multimodal data sources</strong> Manuel Niaus, University of Innsbruck, Austria; Kristian Kilii, Tampere University, Finland; Korbinian Moell, Leibniz-Institut für Wissensmedien, Germany; Guilherme M. de O. Wood, University of Graz, Austria; Silvia Kober, University of Graz, Austria</td>
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<td>Session G: 5</td>
<td>Time: 09:00-10:00</td>
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<tr>
<td><strong>SINGLE PAPER: COMPUTER-ASSISTED LEARNING IN HIGHER EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Effects of Adaptive Quizzing: The Type of Adaptation Matters</td>
<td>Bart Rienties, Open University, United Kingdom</td>
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<td>Niklas Obergassel, Ruhr University Bochum, Germany; Svenja Heitmann, Ruhr-Universität Bochum, Germany; Stefan Fries, University of Bielefeld, Germany; Kirsten Berthold, University of Bielefeld, Germany; Axel Grund, University of Luxembourg, Luxembourg; Julian Roelke, Ruhr University Bochum, Germany</td>
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<td>Peer feedback for undergraduate interdisciplinary learning</td>
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<td>Rianne van Lambalgen, Utrecht University, Netherlands</td>
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<td>Investigating the Effectiveness of Role-Play Patient Simulations in Dental Education</td>
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<td>Elizabeth McAlpin, New York University, United States; Marci Levine, New York University, United States; Jan L. Plass, New York University, United States</td>
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<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: ASSESSMENT IN TEACHER PROFESSIONAL DEVELOPMENT</strong></td>
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<td><strong>Chair</strong></td>
<td>Measuring the quality of teacher professional development sessions - A newly developed tool</td>
<td>Linda Barman, The Royal Institute of Technology (KTH), Sweden</td>
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<td>Daniela Rezap, University of Kassel, Faculty of Human Sciences, Department of Educational Science, Germany; Lena Finger, Ruhr University Bochum, Germany; Alexander Grooschner, Friedrich Schiller University Jena, Germany; Richard Klöden, Vocational School Center for Technology I - Industrial School Chemnitz, Germany; Frank Lipowsky, University of Kassel, Germany; Dirk Richter, University of Potsdam, Germany</td>
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<td>Using video to assess preschool teachers’ knowledge of oral language pedagogy</td>
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<td>Sandra Mathers, University of Oxford, United Kingdom</td>
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<td>Investigating the validity of self-report measures that assess teacher technology-related knowledge</td>
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<td>Franziska Baier, Goethe-Universität Frankfurt, Germany; Lukas Schulze-vorberg, Goethe-University Frankfurt, Institute of Psychology, Germany; Mareike Kunter, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Germany; Holger Horz, Goethe-University Frankfurt, Institute of Psychology, Germany</td>
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<th>Session G: 7</th>
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<tr>
<td><strong>SINGLE PAPER: EDUCATIONAL POLICY</strong></td>
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<td><strong>Chair</strong></td>
<td>Measuring equity across the Nordics. Methodological choices as implications for educational policies</td>
<td>Katharina Schnitzler, Technical University of Munich, Germany</td>
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<td>Oleksandra Mittal, ILS, University of Oslo, Norway; Trude Nilsen, University of Oslo, Norway</td>
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<td>Effects of inspections on schools in challenging circumstances: a systematic literature review</td>
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<td>Bernardita Munoz Chereau, University College London, United Kingdom; Melanie Ehren, VU university of Amsterdam, Netherlands; Jo Hutchinson, Education Policy Institute, United Kingdom</td>
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<td>The ‘losers’ of the accountability game: ‘failing’ schools in England, USA and Chile</td>
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<td>Bernardita Munoz Chereau, University College London, United Kingdom; Alvaro Gonzalez, Universidad Católica Silva Henríquez, Chile; Coby Meyers, Virginia University, United States</td>
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<th>Session G: 8</th>
<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: SOCIAL INTERACTION IN TEACHER PROFESSIONAL DEVELOPMENT</strong></td>
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<td><strong>Chair</strong></td>
<td>Stories about Pedagogical Emotions in professional development contexts</td>
<td>Beat Rechsteiner, University of Zurich, Switzerland</td>
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<td>Karin Sartaj shaub, Ben Gurion University of the Negev, Israel; Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel</td>
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<td>Objective decision-making: Teacher allocation meetings’ structure and interaction</td>
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<td>Janneke Steenhof, Eindhoven School of Education, Netherlands</td>
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<td>Beyond attitudes and teaching methods: The role of teacher professional ethos in tackling bullying</td>
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<td>Eveline Gutzwiler-Heffelfinger, University of Fribourg, Switzerland</td>
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### SINGLE PAPER: SCHOOL EFFECTIVENESS

**Chair**
Chang Lu, University of Alberta, Canada

**Why do some students feel well at school and others do not? A discriminant analysis**
Ramona Obermeier, Johannes Kepler Universität Linz, Austria; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany; Juliane Schlesier, University of Oldenburg, Germany

**Digital Transformation in Vocational Education from the Perspectives of School Management & Teachers**
Martina Rauseo, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Andreas Harder, University of Konstanz, Germany; Deborah Glassay, HES-SO Valais-Wallis, Switzerland; Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Francesca Amendola, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland; Serge Imboden, HES-SO Valais-Wallis, Switzerland; Stephan Schumann, University of Constance, Germany

**Data rich and information poor? Improving instruction with multiple data.**
Sebastian Wurster, Johannes Gutenberg University Mainz, Germany

### SINGLE PAPER: MOTIVATION, EMOTION AND MATHEMATICS

**Chair**
Sabine Schlag, University of Wuppertal, Germany

**Does school affect private tutoring attendance? Predictors of private tutoring among tenth-graders**
Anna Hawrot, Leibniz Institute for Educational Trajectories (LITB), Germany

**Relation between facets of self-concept and study satisfaction in university mathematics programs**
Stefan Uher, Ludwig-Maximilians-Universität (LMU), Germany; Timo Kosiol, Ludwig-Maximilians-Universität (LMU), Germany; Stefanie Rasch, Otto-von-Guericke Universität Magdeburg, Germany

**Success, Pride, Motivation: A logical sequence? – Exploring the impact of attributions and context**
Judith Franke, RWTH Aachen University, Germany; Kerstin Helker, Eindhoven University of Technology, Netherlands

### SINGLE PAPER: FOREIGN AND SECOND LANGUAGE ACQUISITION

**Chair**
Guido Nottbusch, University of Potsdam, Germany

**Predictors for Code-Switching Behavior in Dual Language Learning Children**
Leila Teresa Schächtinger Tenés, Faculty of Psychology, University of Basel, Switzerland; Jessica Carolyn Bühlér, University of Basel, Switzerland; Letizia Volpin, University of Neuchâtel, Switzerland; Alexander Grob, University of Basel, Switzerland; Katrin Skonuppa, University of Neuchâtel, Switzerland; Robin Klaus Segerer, University of Basel, Switzerland

**Preschool brain- & behavioral data predict literacy outcomes in German (dialect)-speaking children**
Jessica Carolyn Bühlér, University of Basel, Switzerland; Urs Maurer, The Chinese University of Hong Kong, Hong Kong

**Effects of receptive-level phonological processing in mono- and bilingual preschoolers**
Jessica Carolyn Bühlér, University of Basel, Switzerland; Leila Teresa Schächtinger Tenés, Faculty of Psychology, University of Basel, Switzerland; Katrin Skonuppa, University of Neuchâtel, Switzerland; Alexander Grob, University of Basel, Switzerland; Robin Klaus Segerer, University of Basel, Switzerland
TUESDAY, 24 AUGUST 2021

Session G: 12  Time: 09:00-10:00  Location: Session Room 16

SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION

Chair
Tjis Rotsaert, Ghent University, Belgium

FACTORS INFLUENCING STUDENT ENGAGEMENT IN HIGHER EDUCATION CONTEXT
Huy Cuong Nguyen, University of Szeged, Viet Nam

Design guidelines for the assessment of interprofessional competencies in healthcare education.
Hester Smeets, Zuyd University of Applied Sciences & Maastricht University, Netherlands; Albine Moser, Zuyd University of Applied Sciences, Netherlands; Dominique Stijlmans, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands

What are students’ experiences of assessment adjustments? Moving towards inclusive assessment design
Joanna Tai, Deakin University, Australia; Mary Dracup, Deakin University, Australia; Merrin Macraken, Deakin University, Australia

Session G: 13  Time: 09:00-10:00  Location: Session Room 18

WORKSHOP: HOW TO ENHANCE UNIVERSITY STUDENTS’ WELL-BEING AND RESILIENCE: AN EDUCATIONAL ESCAPEROOM.

How to enhance university students’ well-being and resilience: an educational escaperoom.
Marjon Fokkens-Braeisma, University of Groningen, Netherlands; Irene Poort, University of Groningen, Netherlands; Lisa Kitz, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands

Session G: 14  Time: 09:00-10:00  Location: Session Room 5

ESPRESSO INVITED SYMPOSIUM: SIG 3: TEACHER LEARNING AND PROFESSIONAL DEVELOPMENT FROM A CONCEPTUAL CHANGE PERSPECTIVE

Chair
Getraud Benke, Klagenfurt University, Austria
Organiser
Stella Vosniadou, Flinders University, Australia
Discussant
Erno Lehtinen, University of Turku, Finland

Teachers’ Misconceptions About Learning Strategies: Analyses and Interventions
Alexander Renkl, University of Freiburg, Germany; Inga Glogower-Frey, University of Freiburg, Germany

Conceptual change for and during working life; the medical domain
Els Boshuizen, Open University of the Netherlands, Netherlands

A conceptual change perspective on understanding teachers’ belief systems
Stella Vosniadou, Flinders University, Australia

Session G: 15  Time: 09:00-10:00  Location: Session Room 15

INVITED SYMPOSIUM: SIG 1: LEARNING BY DOING WON’T SUFFICE: WHAT DETERMINES THE QUALITY OF PEER FEEDBACK?

Chair
Lieze Coertjens, Université catholique de Louvain (UCL), Belgium
Organiser
Lieze Coertjens, Université catholique de Louvain (UCL), Belgium
Discussant
Frans Peels, Utrecht University, Netherlands

How knowledge, professional vision, and experience predict peer feedback quality
Christopher Neil Pritlop, Leuphana University Luebeck / University of Hamburg, Germany; Kira Elena Weber, Leuphana University Luebeck, Germany; Marc Kleinheere, Leuphana University Luebeck, Germany

Systematic review on human and social variables in peer assessment
Jose Carlos Ocampo, University of Deusto, Spain; Javier Fernández, Universidad Autonoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain

The effects of perceived language skills on peer feedback and peer grading in secondary education
Jochem Alen, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Filitsa Dinglioudi, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

The impact of training targeting the social nature of peer feedback
Morgane Senden, Université catholique de Louvain (UCL), Belgium; Dominique De Jaeger, Université catholique de Louvain (UCL), Belgium; Lieze Coertjens, Université catholique de Louvain (UCL), Belgium
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<tr>
<th>Time: 10:45-11:45</th>
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<tr>
<td><strong>Keynotes I: 1</strong></td>
<td><strong>EARLI KEYNOTE SESSION: EARLY MANIFESTATIONS OF EXECUTIVE FUNCTIONS FROM THE END OF THE FIRST YEAR AT THE INFANT SCHOOL</strong></td>
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<tr>
<td>Chair</td>
<td>Early manifestations of Executive Functions from the end of the first year at the infant school</td>
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<td>Effiefena Gonda, Aristotle University of Thessaloniki, Greece</td>
<td>Cintia Rodriguez, Universidad Autonoma de Madrid, Spain</td>
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<tr>
<td><strong>Keynotes I: 2</strong></td>
<td><strong>EARLI KEYNOTE SESSION: INNOVATIVE METHODS AND TECHNOLOGIES FOR ENHANCING LEARNING AND PROFESSIONAL DEVELOPMENT</strong></td>
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<tr>
<td>Chair</td>
<td>Innovative Methods and Technologies for Enhancing Learning and Professional Development</td>
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<tr>
<td>Angelika Kullberg, University of Gothenburg, Sweden</td>
<td>Raija Hämäläinen, University of Jyväskylä, Finland</td>
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<tr>
<td><strong>Session H: 1</strong></td>
<td><strong>SINGLE PAPER: PRE-SERVICE TEACHER PROFESSIONAL DEVELOPMENT</strong></td>
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<tr>
<td>Chair</td>
<td>What is really important? Results of a study on feedback in the second phase of teacher training</td>
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<td>Emmanuel Manalo, Kyoto University, Japan</td>
<td>Stefan Siegel, University of Augsburg, Germany; Benedikt Wisniewski, University of Augsburg, Germany</td>
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<td></td>
<td>Agency development as a function of identity learning in teacher education</td>
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<td>Monique H.R.M.A.van der Heijden, De Kompel University of Applied Sciences, Netherlands; Douwe Beijaard, Eindhoven University of Technology, Netherlands; Jan Vemunt, Eindhoven University of Technology, Netherlands</td>
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<tr>
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<td>Supporting Student Teachers’ Conceptual Knowledge Acquisition Through Example-Based Learning</td>
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<td>Tim Steininger, Albert-Ludwigs-Universität Freiburg, Germany; Thamar Voss, University of Freiburg, Germany; Julia Kienzl, Albert-Ludwigs-Universität Freiburg, Germany; Joerg Wittwe, University of Freiburg, Germany</td>
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<td><strong>Session H: 2</strong></td>
<td><strong>SINGLE PAPER: LIFELONG LEARNING AND SOCIAL INTERACTION</strong></td>
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<tr>
<td>Chair</td>
<td>Subject talk. Tracing characteristics of social interaction</td>
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<tr>
<td>Meaghan Brugha, University of Cambridge, United Kingdom</td>
<td>Astrid Camilla Wlg, University of South-Eastern Norway, Norway; Tina Proitz, University of South-Eastern Norway, Norway</td>
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<td>The relation of professional qualification, collaboration and research performance</td>
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<td>Agnes Cichy, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany; Tuire Palonen, University of Turku, Finland</td>
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<td>Design considerations for a systemic approach to technology-supported professional learning</td>
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<td>Koula Charitos, The Open university UK, United Kingdom; Allison Littlejohn, University College London, United Kingdom; Heli Kaatrakoski, University of Stavanger, Norway</td>
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<td><strong>Session H: 3</strong></td>
<td><strong>SINGLE PAPER: SECONDARY EDUCATION</strong></td>
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<td>Chair</td>
<td>On the predictors of Computational Thinking measured with the Computational Thinking Scales</td>
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<td>Sally Gutierrez, University of the Philippines National Institute for Science and Mathematics Education Development, Philippines</td>
<td>Josef Guggemos, University of St.Gallen, Switzerland</td>
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<td>Schooling as context for the formation of supranational political support by students in Europe</td>
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<td>Katrin Hahn-Laudenberg, University of Wuppertal, Germany; Hermann J. Aba, University of Dussburg-Essen, Germany</td>
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<td>Prediction of teacher education students academic achievement based on the matriculation examination</td>
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<td>Jenni Kunnari, University of Oulu, Finland; Jouni Pursiainen, University of Oulu, Finland; Hannu Muikkonen, University of Oulu, Finland</td>
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### Session H: 4  
**Time:** 12:00-13:00  
**Location:** Session Room 6

**SINGLE PAPER: LEARNING TECHNOLOGIES**

**Chair**  
Mariette van Loon, University of Bern, Switzerland

**Learning from Eroneous Worked-Examples. The Influence of Type of Error and Prior Knowledge**  
Maik Bæege, Chemnitz University of Technology, Germany; Steve Nebel, Chemnitz University of Technology, Germany; Sascha Schneider, Chemnitz University of Technology, Germany; Justus Zimm, TU Chemnitz, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany

**Using microblogging and the language of possibility to create a space for open, reasoned debate**  
Paul Warwick, University of Cambridge, United Kingdom; Victoria Cook, University of Cambridge, UK, United Kingdom; Jan Dolonen, University of Oslo, Norway

**Online Dance Instructor: The influence of multiple perspectives and model orientation on learning**  
Birgit Brucker, Leibniz Institut für Wissensmedien (IWM), Germany; Sophie Hornuff, Eberhard Karls Universität Tübingen, Germany; Marc-Hallmann, Leibniz Institut für Wissensmedien (IWM), Germany; Peter Gerjets, Leibniz-Institut für Wissensmedien (IWM); Eberhard Karls Universität Tübingen, Germany

### Session H: 5  
**Time:** 12:00-13:00  
**Location:** Session Room 10

**SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION**

**Chair**  
Alessia Eletta Coppi, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland

**Fostering utility-value of educational research evidence in future teachers**  
Maximilian Knoerger, Technical University of Munich (TUM), Germany; Ricardo Böheim, University of Augsburg, Germany; Anima Dier, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany; Judith Harackiewicz, University of Wisconsin-Madison, United States

**Students' motivations for choosing a teacher training or non-teacher training programme**  
Robin Göller, Leuphana University Luebeck, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany

**Using the Theory of Planned Behavior to Explain Pre-Service Teachers’ Evidence-Informed Reasoning**  
Martin Greisel, University of Augsburg, Germany; Christina Wekerle, University of Augsburg, Germany; Theresa Wilkes, Saarland University, Germany; Kati Trempler, University of Wuppertal, Germany; Robin Stark, Saarland University, Germany; Ingo Kollar, University of Augsburg, Germany

### Session H: 6  
**Time:** 12:00-13:00  
**Location:** Session Room 11

**SINGLE PAPER: CITIZENSHIP EDUCATION**

**Chair**  
Tatiana Shubina, University of Oulu, Finland, Finland

**How classroom interaction supports citizenship education: An ethnography of using prior knowledge**  
Ivy Lau, Hong Kong Baptist University, Hong Kong

**Hard talk: exploring citizenship through arts education in a Chilean public school.**  
Rosario Palacios, Centro de Justicia Educatacional Pontificia Universidad Católica de Chile, Chile; Sofia Larrazabal, Pontificia Universidad Católica de Chile, Chile; Isidora Herrera, Pontificia Universidad Católica de Chile, Chile

**'I can’t remember of what it taught’ - young adults experiences of schools’ financial education**  
Manija Kortesalmi, Laurea University of Applied Sciences, Finland, Finland; Minna Auto, University of Helsinki, Finland; Mette Ranta, University of Jyväskylä, Finland

### Session H: 7  
**Time:** 12:00-13:00  
**Location:** Session Room 9

**SINGLE PAPER: COGNITIVE SKILLS AND MOTIVATION**

**Chair**  
Lihong Huang, Oslo Metropolitan University, Norway

**Cognitive abilities, trait interests, and educational preferences**  
Jeroen Lavijsen, KU Leuven, Belgium; Terence Tracey, Arizona State University, United States; Pieter Verachtert, KU LEUVEN, Belgium; Tine De Vroode, KU LEUVEN, Belgium; Bart Soensens, Ghent University, Belgium; Karine Verschueren, KU Leuven, Belgium

**Which Motivational Processes Predict Academic Achievement Beyond Intelligence and Personality?**  
Jeroen Lavijsen, KU Leuven, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Michiel Boncquet, Universiteit Gent, Belgium; Karine Verschueren, KU Leuven, Belgium

**Learning Strategy Deployment and Achievement Goal Orientation within MetaTutor**  
Megan Wedbush, University of Central Florida, United States; Roger Araujo, University of Central Florida, United States
### Session H: 8  
**Time:** 12:00-13:00  
**Location:** Session Room 8

#### SINGLE PAPER: SOCIAL INTERACTION IN PRIMARY EDUCATION

**Chair**  
Anna-Lena Ek Dahl, Jönköping University, Sweden

**Social Reproduction through Specialized Classes in Czechia: Why do Parents Dodge their Local School?**  
Radka Smith Slámová, Institute for Research and Development of Education, Faculty of Education, Charles University in Prague, Czech Republic

**Taking on a task: Children handling the premises of group discussions about democratic concepts**  
Lea Eldstål-Ahrens, University of Gothenburg, Sweden; Niklas Pramling, University of Gothenburg, Sweden; Malin Nilsen, University of Gothenburg, Sweden

**Effects of Teacher Feedback on Children’s Self-Concepts and Motivation in Science Lessons**  
Fabian Hoya, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Eva Blumberg, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

### Session H: 9  
**Time:** 12:00-13:00  
**Location:** Session Room 7

#### SINGLE PAPER: SELF-REGULATION

**Chair**  
Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary

**The relation between self-regulation and contextual-instructional characteristics of activities.**  
Antonia Zachariou, University of Roehampton, United Kingdom

**Self-Regulation in Early Writing Instruction**  
Perry Klein, The University of Western Ontario, Canada; Ashley Bildeff, Western University, Canada; Jili Dombrowski, The University of Western Ontario, Canada; Christine Giese, The University of Western Ontario, Canada; Kristen Wing-Yan Sha, The University of Western Ontario, Canada; Serena Thompson, The University of Western Ontario, Canada

**Effects of Self-Scoring Math Problem Solutions on 4th Grade Students’ Monitoring and Regulation**  
Sophie Oudman, Utrecht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

### Session H: 10  
**Time:** 12:00-13:00  
**Location:** Session Room 16

#### SINGLE PAPER: TEACHING AND INSTRUCTION IN PRIMARY EDUCATION

**Chair**  
Nicola Reimann, Durham University, United Kingdom

**Teaching effectiveness in primary education: Combining the Dynamic Model with dialogic pedagogy**  
Leonidas Kyriakides, University of Cyprus, Cyprus; Maria Vriki, University of Cyprus, Cyprus

**Students’ basic academic skills & individual support needs associate with teacher focus of attention**  
Saswati Chaudhuri, University of Jyvaskyla, Finland; Heli Muhonen, University of Jyvaskyla, Finland; Elja Pakarinen, University of Jyvaskyla, Finland; Marja-Kristiina Lerkkanen, University of Jyvaskyla, Finland

**Teachers’ occupational well-being during Covid-19 pandemic**  
Sanni Pöysä, University of Jyväskylä, Finland; Elja Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

### Session H: 11  
**Time:** 12:00-13:00  
**Location:** Session Room 1

#### SINGLE PAPER: COMMUNITIES OF PRACTICE

**Chair**  
Tamara Kastorff, Ludwig Maximilians-Universität (LMU), Germany

**Between Managerialism and Collegialism: Educational Innovators’ Networks in Higher Education**  
Tobias Jenert, Paderborn University, Germany

**“Otherwise, you can play driving the boat on your PlayStation instead”: Simulator-based training**  
ANASTASIA SKÅRPEI, NTNU · Norwegian University of Science and Technology, Norway; Charlott Seilberg, University of Gothenburg, Sweden

**On participation and learning to be a citizen. Troubling norms of identity in the performing arts**  
Petra Weckström, Örebro Teater, Sweden; Sweden; Sangeeta Bagga-Gupta, Jönköping University, Sweden
**Session H: 12**
**Time:** 12:00-13:00  
**Location:** Session Room 17

**SINGLE PAPER: MOTIVATION AND EMOTION IN HIGHER EDUCATION**

**Chair**
Kristina Mänty, University of Oulu, Finland

**Presentations**
- **University Teachers’ Professional Development: The Role of Achievement Goals for Learning**  
  Raven Rinus, Augsburg University, Germany; Markus Drevel, University of Augsburg, Germany; Oliver Dickhäuser, University of Mannheim, Germany; Martin Daumiller, University of Augsburg, Germany
- **Academic Procrastination: the role of future time perspective and episodic future thinking**  
  ANDRIANA DAMIANIDOU, Aristotle University of Thessaloniki, Greece; Eleftheria Gonda, Aristotle University of Thessaloniki, Greece; Grigoris Kiosseoglou, Aristotle University of Thessaloniki, Greece
- **Predicting Academic Emotions in the Learning Process Using EEG**  
  Thomas Martens, Medical School Hamburg, Germany; Moritz Niemann, MSH Medical School Hamburg, Germany

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**Session H: 13**
**Time:** 12:00-13:00  
**Location:** Session Room 12

**SINGLE PAPER: TEACHING AND INSTRUCTION IN STUDENT LEARNING**

**Chair**
Soeharto Soeharto, University of Szeged, Doctoral School of Education, Indonesia

**Presentations**
- **Fostering flexibility in equation solving by means of comparing and classroom discussions**  
  Christian Rüede, FHNW School of Education, Switzerland; Sog Yee Mok, University of Zurich, Switzerland; Fritz C. Staub, University of Zurich, Switzerland
- **The role of need for cognition and specific self-explanation instructions in text comprehension**  
  Susanne Narciss, TU Dresden, Germany; Maria Neumann, Dresden University of Technology, Germany; Antje Proske, TU Dresden, Germany
- **Promoting Learning through Elaborated Feedback in Online Quizzes with Closed Questions**  
  Natalie Enders, Universität Hildesheim, Germany; Robert Gaschler, FernUniversität in Hagen, Germany; Veit Kubik,  
  University of Bielefeld, Germany

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**Session H: 14**
**Time:** 12:00-13:00  
**Location:** Session Room 13

**SINGLE PAPER: MATHEMATICS**

**Chair**
Sikander Ali, Norwegian University of Science and Technology (NTNU), Norway

**Presentations**
- **Teacher Feedback in Flipped Mathematics Classrooms**  
  Mustafa Çevikbas, University of Hamburg, Germany; Gabriele Kaiser, University of Hamburg, Germany
- **Anxiety, motivation, & ability in math & reading in children with and without learning difficulties**  
  Courtney Pollack, Boston College, Massachusetts Institute of Technology, United States; Dayna Wilmot, Massachusetts Institute of Technology, United States; Tracy Cantann, Texas Christian University, United States; Kelly Halverson, Massachusetts Institute of Technology, United States; Andrea Imhot, University of Oregon, United States; Karolina Wade, Massachusetts Institute of Technology, United States; Rachel Romeo, Massachusetts Institute of Technology, United States; Jimmy Capella, Massachusetts Institute of Technology, United States; Isabelle Frosch, Massachusetts Institute of Technology, United States; Anila D’Mello, Massachusetts Institute of Technology, United States; Noor Al Dahan, MGH Institute of Health Professions, United States; John D.E. Gabrieli, Massachusetts Institute of Technology, United States; Joanna Christodoulou,  
  MGH Institute of Health Professions, United States

- **High Achievers in Mathematics: Metacognitive, Motivational and Emotional Profiles**  
  Dimitrios Moustakas, University of Macedonia, Greece; Eleftheria Gonda, Aristotle University of Thessaloniki, Greece

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**Session H: 15**
**Time:** 12:00-13:00  
**Location:** Session Room 18

**SINGLE PAPER: THE ROLE OF DIALOGUE IN DESIGNING FOR INTERDISCIPLINARITY**

**Chair**
Tuula Ikkala, University of Turku, Finland

**Presentations**
- **Co-designing for learning across disciplines: Design principles for student-led innovation**  
  Lina Markauskaitė, University of Sydney, Australia; Dwayne Riple, The University of Sydney, Australia; Natasha Arthurs, The University of Sydney, Australia; Maryam Khorosnejad, The University of Sydney, Australia
- **Knowledge integration and coordination of collaboration in interdisciplinary learning design teams**  
  Grina Damsa, University of Oslo, Norway; Greta Björk Gudmundsdottir, University of Oslo, Norway; Hanna Ragnarssöd,  
  University of Iceland School of Education, Iceland; Carol Paul Rodrigues, University of Oslo, Norway

- **Interdisciplinarity and school-learning in schools that comply with dialogic pedagogies**  
  Baruch Schwarz, Hebrew University of Jerusalem, Israel; Einat Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel; Boris Kozich, Weizmann Institute of Science, Rehovot, ISRAEL, Israel; Michal Tabach, Tel Aviv University, Israel; Anat Yarden The Weizmann Institute of Science, Weizmann Institute of Science, Israel
### Session H: 16  
**Time:** 12:00-13:00  
**Location:** Session Room 15

#### INVITED SYMPOSIUM: EFG: THE POTENTIAL OF BIOPHYSIOLOGY TO UNDERSTAND MOTIVATION, ENGAGEMENT AND LEARNING EXPERIENCES

**Chair**  
Tim Manhard, Utrecht University, Netherlands

**Discussant**  
Tim Manhard, Utrecht University, Netherlands

**Can You feel the Excitement? The Physiological Correlates of Students’ Self-reported Experiences**  
Reito Visajaani Salonen, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland; Katarina Salmenla-Aro, Helsinki University, Finland

**The effect of physical activity in primary school on classroom behaviour and learning experiences**  
Christina Heemskerk, University of Bern, Switzerland; Lars-Erik Malmberg, University of Oxford, United Kingdom; Steve Strand, University of Oxford, United Kingdom

**The dynamic experience of taking an exam: Ever changing cortisol and confidence**  
Jennifer Husman, University of Oregon, United States; Matthew Graham, University of Oregon, United States; Idalis Villanueva, Department of Engineering Education, University of Florida, United States; Darcie Christensen, Department of Engineering Education, College of Engineering, Utah State University, United States; Reinhard Pekrun, Ludwig Maximilians-Universität, Germany

### Session I: 1  
**Time:** 15:45-16:45  
**Location:** Session Room 7

#### ROUNDTABLE: PRIMARY EDUCATION

**Chair**  
Joni Lämsä, University of Jyväskylä, Finland

**“I can do this as well as you!” – Peers in mixed-age classes construct commonality and difference**  
Tina Walther, Technische Universität Dresden, Germany

**Learning through writing in school - phenomenological study of creative experiences**  
Franziska Herrmann, Technische Universität Dresden, Germany

**Computing-related Pre-conceptions of Primary School Children: Initial Insights from a Pre-study**  
Cyril Brom, Charles University, Czech Republic; Tereza Hannemann, Charles University, Czech Republic; Anna Drobná, Charles University, Czech Republic; Kristina Volná, Czech Television, Czech Republic

### Session I: 2  
**Time:** 15:45-16:45  
**Location:** Session Room 17

#### ROUNDTABLE: MOTIVATION

**Chair**  
Bernhard Standl, Karlsruhe University of Education, Germany

**Engagement as a collective process**  
Mayra Mascareño Lara, University of Groningen, Netherlands; Naomi de Ruiter, University of Groningen, Netherlands; Elisa Kupers, University of Groningen, Netherlands

**Investigating the relation between teachers’ professional vision and their motivational style**  
Nele Van Doren, University of Ghent, Belgium; Ruben Vanderlinde, Ghent University, Belgium; Katrien De Cock, Ghent University, Belgium; Leen Haenens, Ghent University, Belgium

**Effectiveness of Reader’s Theater programs in promoting reading skills and motivation**  
Jarkko Hautala, Nilo Mäki Institute, Finland; Milla Ronimus, Nilo Mäki Institute, Finland; Enni Jurtttila, Nilo Mäki Institute, Finland

### Session I: 3  
**Time:** 15:45-16:45  
**Location:** Session Room 4

#### ROUNDTABLE: LEARNING AND INSTRUCTION

**Chair**  
Berit Hepp, Humboldt-Universität zu Berlin, Germany

**Learning from Multiple Illustrated Texts about COVID-19**  
Jennifer Crompt, University of Illinois at Urbana-Champaign, United States; Andrea Kunze, University of Illinois at Urbana-Champaign, United States

**Intraindividual dynamics of interest development**  
Jasj Drapier, University Utrecht, Netherlands; Larrie Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

**Facilitating Peer-Learning in Computer Mediated Foreign Language Learning**  
Katerina Holubík, FernUni Hagen, Germany, Germany
### Session I: 4  
**Time:** 15:45-16:45  
**Location:** Session Room 18

**COLLABORATIVE WORKSPACE: DIDACTICAL DESIGN IN CLASSROOM RESEARCH: ESTABLISHING A MULTIDISCIPLINARY APPROACH TO DBR**

Didactical Design in Classroom Research: Establishing a multidisciplinary approach to DBR  
Sylvana Sołtowa Hashemi, University of Gothenburg; Halmsgat University, Sweden; Eva Nyberg, University of Gothenburg, Sweden; Peter Nyström, University of Gothenburg, Sweden; Ali Yildirim, University of Gothenburg, Sweden

### Session I: 5  
**Time:** 15:45-16:45  
**Location:** Session Room 6

**COLLABORATIVE WORKSPACE: RESEARCH ON USING VIRTUAL REALITY TO AUGMENT STEM TEACHERS’ PROMOTION OF SELF-REGULATION**

Research on Using Virtual Reality to Augment STEM Teachers’ Promotion of Self-Regulation  
Engin Ader, Boğaziçi University, Turkey; Roger Azevedo, University of Central Florida, United States; Sanna Järvelä, University of Oulu, Finland; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Tova Michalisky, Bar Ilan University, Israel

### Session I: 6  
**Time:** 15:45-16:45  
**Location:** Session Room 11

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND QUALITATIVE METHODS**

**Chair**  
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico

**Characteristics of Teachers’ Professional Communication about Teaching (PCT) – a Systematic Review**  
Christian Schadt, University of Hohenheim, Germany; Julia Warwas, Universität Hohenheim, Germany

**How narrative structure may foster teacher resilience: a qualitative analysis of two cases**  
Marc Clara, University of Lleida, Spain; Alba Vallés, University of Lleida, Spain; Àina Franch, University of Lleida, Spain; Jordi Coduras, University of Lleida, Spain; Patricia Silva, University of Lleida, Spain; Silvia Cavalcante, University of Lleida, Spain

**Diversity and systematics of data-based intervention decisions in early education Mathematics**  
Nicole Reinsdorf, Universität Potsdam, Germany; Miriam Bait, Leibniz Universität Hannover, Germany; Antje Ehrt, University of Potsdam / University of Johannesburg, Germany

### Session I: 7  
**Time:** 15:45-16:45  
**Location:** Session Room 10

**SINGLE PAPER: ASSESSMENT METHODS, ATTITUDES AND BELIEFS**

**Chair**  
Naomi de Ruijter, University of Groningen, Netherlands

**Mindset Moderates Healthcare Providers’ Performance in a Neonatal Resuscitation Simulator**  
Chang Lu, University of Alberta, Canada; Simran Ghuman, University of Alberta, Canada; Maria Cutumisu, University of Alberta, Canada; Georg Schmöelzer, University of Alberta, Canada

**A German Digital Reading Test for Grades 3 to 4: Development and Piloting**  
Susanne Seifert, University of Graz, Austria; Lisa Paleczek, University of Graz, Austria

**Parent’ perceptions and beliefs of assessment in Finnish basic education: A large-scale study**  
Juuso Henrik Nieminen, University of Eastern Finland, Finland; Paivi Ajponen, University of Eastern Finland, Finland
### Session I: 8 | Time: 15:45-16:45 | Location: Session Room 13

#### SINGLE PAPER: INSTRUCTIONAL DESIGN AND LEARNING TECHNOLOGIES

**Chair**
Syki Vigno, University of Gothenburg, Sweden

**Digital citizenship in primary education. From theoretical models to curriculums**
Lionel Alvarez, HEP-Fribourg | Université de Fribourg, Switzerland; Kostanza Cuko, University for Teacher Education Fribourg, Switzerland; Ania Tadlaoui-Brahmi, Universität für Teacher Education Fribourg, Switzerland

**Effects of digital media on knowledge acquisition in school: A systematic review of meta-analyses**
Tamara Kastorff, Ludwig-Maximilians-Universität (LMU), Germany; Karsten Stegmann, Ludwig-Maximilians-Universität (LMU), Germany; Sonja Berger, Ludwig-Maximilians-Universität (LMU), Germany; Michael Sailer, LMU Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Does the effect of instructor’s presence in videos vary with slide type and presentation type?**
Christina Sondemann, German Institute for Adult Education, Germany; Martin Merki, Deutsches Institut für Erwachsenenbildung, Germany

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### Session I: 9 | Time: 15:45-16:45 | Location: Session Room 9

#### SINGLE PAPER: COGNITIVE DEVELOPMENT AND CONCEPTUAL CHANGE

**Chair**
Klara Bolander Laksøv, Stockholm University, Sweden

**Modes of dealing with opposing theoretical perspectives in cognitive science**
Thorsten Scheiner, Australian Catholic University, Australia

**Conceptual change in random transfer probability reasoning**
Ida Kuklinsky, Ruppin Academic Center, Israel; Yael Tai, Tel Aviv University, Israel

**When do children understand that number words refer to exact cardinalities?**
Pierina Cheung, National Institute of Education/Nanyang Technological University, Singapore, Singapore

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### Session I: 10 | Time: 15:45-16:45 | Location: Session Room 8

#### SINGLE PAPER: INQUIRY LEARNING IN SCIENCE EDUCATION

**Chair**
Eric Pakulak, Stockholm University, Sweden

**Towards student' autonomy for peer-to-peer interaction: Affordance of dialogic scaffolding routines**
Sally Gutierrez, University of the Philippines National Institute for Science and Mathematics Education Development, Philippines

**How can deep networks help us in the coding of discussions in the context of inquiry learning?**
Pablo Uribe, Centro de Investigación Avanzada en Educación, Chile; Joni Lämsä, University of Jyväskylä, Finland; Abelin Jimenez, Universidad de Chile, Chile; Daniela Caballero, Universidad de Chile, Chile; Roberto Araya, Universidad de Chile, Chile; Raia Hämäläinen, University of Jyväskylä, Finland

**Exploring the Effectiveness of an Innovative Science Outreach Programme for Migrant Students**
Julia Schiefel, University of Tuebingen, Germany; Joana Moscoso, Native Scientist, United Kingdom; Ana Isabel Catarino, Flanders Marine Institute (VLIZ), Belgium; Jana Philipp, University of Tuebingen, Germany; Pedro Miranda Alfonso, Erasmus Medical Center, Department of Biostatistics, Netherlands; Ulrich Trautwein, University of Tübingen, Germany; Jessika Golle, University of Tuebingen, Germany; Patrick Rebuschak, Lancaster University, United Kingdom
## Session I: 11 | Time: 15:45-16:45 | Location: Session Room 12

### ESPRESSO SYMPOSIUM: FAMILY-SCHOOL COOPERATION: INSIGHTS INTO POLICY, EXPERIENCES, AND BEST PRACTICE

**Chair**
Caroline Villiger, University of Teacher Education Bern, Switzerland

**Discussant**
Angelika Paseka, University of Hamburg, Germany

**Types of Parent-School Cooperation – An Analysis of Cantonal Laws and Regulations in Switzerland**
Nadine Schulter, PH Bern - School of Teacher Education, Switzerland; Caroline Villiger, University of Teacher Education Bern, Switzerland; Anna Hostettler, PH Bern - School of Teacher Education, Switzerland

**Family-School Partnerships with migrant Families and Low-SES Families**
Hélène Leenendaal, Fontys University of Applied Sciences, Netherlands; Johan de Jong, Fontys University of applied sciences, Netherlands

**Family-School-Cooperation in ICT Contexts: Associations to Parents’ Skills and Parenting strategies**
Sabrina Bonanati, Paderborn University, Germany; Nicole Gruchel, University of Paderborn, Germany; Ricarda Kurock, University of Paderborn, Germany; Helke Buhr, University of Paderborn, Germany

**Best Practice in Cultivating School-Family Cooperation in Primary Education: A Scoping Review**
Paola Dusi, University of Verona, Italy; Audrey Addi-Recch, Tel Aviv University, Israel; Maria Lluisa Morì, University of Verona, Italy

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## Session I: 12 | Time: 15:45-16:45 | Location: Session Room 14

### SINGLE PAPER: ATTITUDES, BELIEFS AND MATHEMATICS

**Chair**
Kevin Ackermans, Open University, Netherlands

**How Classmates’ Gender Stereotypes Affect Students’ Math Self-Concepts: A Multilevel Analysis**
Fabian Wolff, Universität Koblenz-Landau, Germany

**Using representations in the mathematics classroom – Experts’ norms in Germany and Taiwan**
Paul Feltes, PH Freiburg, Germany; Anika Dreher, PH Freiburg, Germany; Arne Lindmeier, University of Jena, Germany; Ting-Ying Wang, National Taiwan Normal University, Taiwan; Feng-Jui Hsia, National Taiwan Normal University, Taiwan

**Means, Tails and Fairytales – Fabulous methods to investigate gender differences**
Christian Thurn, ETH Zurich, Switzerland; Thomas Braas, ETH Zurich, Switzerland; Michal Berkowitz, ETH Zurich, Switzerland

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## Session I: 13 | Time: 15:45-16:45 | Location: Session Room 5

### SINGLE PAPER: TEACHING AND INSTRUCTION IN SECONDARY EDUCATION

**Chair**
Frank Reinhold, University of Education Freiburg, Germany

**Quality of reading instruction in language classrooms: Subject specific analysis of teaching quality**
Anke Schmitz, Leuphana Universität Lüneburg, Germany; Fabiana Karstens, University of Cologne, Germany

**Teachers’ knowledge and beliefs about reading comprehension instruction: differences across tracks?**
Kim Van Aemel, Ghent University, Belgium; Koen Aesaert, Catholic University of Leuven, Belgium; Riekie Bogaert, Ghent University, Belgium; Hide Van Keer, Ghent University, Belgium

**Enhancing Students’ Financial Literacy to promote citizenship through the use of variation theory**
Ming Fai Pang, The University of Hong Kong, Hong Kong
### Session I: 14
**Time:** 15:45-16:45  
**Location:** Session Room 16

**SINGLE PAPER: REASONING AND PRE-SERVICE TEACHER EDUCATION**

| Chair | Expertise differences in professional vision among prospective teachers  
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<td>Jenny Lenkeit</td>
<td>Ann-Sophie Grub, Saarland University, Germany; Antje Bleiberg, Saarland University, Germany; Doris Lewalter, Technical University of Munich (TUM), Germany; Roland Brünenker, Saarland University, Germany</td>
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**Pre-Service Teachers’ Diagnostic Argumentation: Diagnostic Accuracy Is Not Enough**

| Elizabeth Bauer, Ludwig Maximilians-Universität (LMU), Germany; Michael Sailer, LMU Munich, Germany; Jan Kleeswetter, LMU University Hospital, Germany; Martin R. Fischer, LMU University Hospital, Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany |

**Fostering pre-service teachers’ reasoning script by productive failure: Does the grain level matter?**

| Theresa Wilkes, Saarland University, Germany; Martin Greisler, University of Augsburg, Germany; Christina Wekerle, University of Augsburg, Germany; Kai Trempler, University of Wuppertal, Germany; Ingo Koller, University of Augsburg, Germany; Robin Stark, Saarland University, Germany |

### Session I: 15
**Time:** 15:45-16:45  
**Location:** Session Room 3

**SINGLE PAPER: STUDENT LEARNING IN PRIMARY AND SECONDARY EDUCATION**

| Chair | Development of a measurement instrument for upper primary students’ reading strategy use  
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<td>Astrid Camilla Wig</td>
<td>Rieke Bogert, Ghent University, Belgium; Emmelien Marche, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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**Effect of reminding source relevance or providing prior knowledge in multiple texts comprehension.**

| María García Serrano, University of Salamanca, Spain; José Ricardo García Pérez, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain |

**Retrieval-, Distributed-, and Interleaved Practice in the Classroom: A Systematic Review**

| Sterre Ruiltenburg, Open University of the Netherlands, Netherlands; Gino Cзолото, Welten Institute - Open University of the Netherlands, Netherlands; Hélène Maria Jarozko, Open University of the Netherlands, Netherlands; Paul Kirschner, Open University of the Netherlands, Netherlands |

### Session I: 16
**Time:** 15:45-16:45  
**Location:** Session Room 2

**SINGLE PAPER: INFORMAL AND WORKPLACE LEARNING**

| Chair | The impact of the COVID-19 pandemic on the digital competencies of HRD professionals  
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<td>Anna-Lena Roos, University of Applied Sciences and Arts Northwestern Switzerland (FH NW), Switzerland</td>
<td>Judith Spiri, University of St.Gallen, Switzerland; Josef Guggemos, University of St.Gallen, Switzerland; Sabine Seufert, University of St.Gallen, Switzerland</td>
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**The relationship between emotional competence and team learning behaviours – a systematic review**

| Sebastian Gerberl, University Regensburg, Germany; Elena Stamatouli, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany |

**The Role of Empowerment and Reflection for Fostering Job Crafting and Innovative Work Behaviour**

| Gerhard Messmann, University of Regensburg, Germany |

### Session I: 17
**Time:** 15:45-16:45  
**Location:** Session Room 15

**INVITED SYMPOSIUM: SIG 10: SOCIAL INTERACTIONS AND LIFE LONG LEARNING**

| Chair | The discourses elderly persons are aging, learning and living by  
<table>
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<tbody>
<tr>
<td>Nathalie Muller Mirza, Université de Genève, Switzerland</td>
<td>Aleksander Bucal, University of Belgrade, Serbia; Marina Videnovic, University of Belgrade, Serbia</td>
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</tbody>
</table>

**Learning and development in older persons in situation of fragility: The creation of a day-center**

| Tania Zitoun, Institute of psychology and education, Switzerland; Martina Cebra, Institut Psychologie et Education, Université de Neuchâtel, Switzerland; Fabienne Gréeter, Institute of education and psychology, University of Neuchâtel, Switzerland |

**Sense-making and tacit knowledge by retirees involved as volunteers in nonprofit associations**

| Nathalie Muller Mirza, Université de Genève, Switzerland; Antonio Iannaccone, University of Neuchâtel, Switzerland; Vittoria Cesari Lusso, University of Neuchâtel, Switzerland |
## INVITED SYMPOSIUM: SIG 9: LEARNING STUDY IN PROSPECTIVE TEACHER EDUCATION

**Chair**
Angelika Kulberg, University of Gothenburg, Sweden

**Organiser**
Ake Ingerman, University of Gothenburg, Sweden

**Discussant**
Ake Ingerman, University of Gothenburg, Sweden

**How the integration of theory and practice supports pre-service teachers in teaching mathematics**
Permina Mårtensson, Jönköping University, Sweden; Anna-Lena Ek Dahl, Jönköping University, Sweden

**A phenomenological exploration of prospective teachers’ experiences learning about variation theory**
Diana Royea, University of British Columbia, Canada

**Supporting teacher educators’ professional learning through Lesson Study**
Sui Goel, Windesheim University of Applied Sciences, Netherlands

## INVITED SYMPOSIUM: EFG: FROM HETEROGENEOUS PERCEPTIONS OF INSTRUCTION AND STUDENT CHARACTERISTICS TO ADAPTIVE TEACHING

**Chair**
Lisa Bartach, University of Tübingen, Germany

**Organiser**
Lisa Bartach, University of Tübingen, Germany

**Discussant**
Richard Goellner, University of Tübingen, Germany

**Optimal configurations of student-perceived classroom structure and psychosocial learning climate**
Elizabeth Olivier, Université de Montréal, Canada; Alexandre Morin, Substantive-Methodological Synergy Research Laboratory, Concordia University, Canada; Isabelle Plante, Département de didactique, Université du Québec à Montréal, Canada; Véronique Dupéré, École de Psychologie, Université de Montréal, Canada; Isabelle Archambault, Université de Montréal, Canada

**Idiosyncratic Student Perceptions of Academic Support: Relations to Motivation and Achievement**
Alessandro Kocaj, Institute for Educational Quality Improvement (IQB), Germany; Claudia Neuendorf, Institute for Educational Quality Improvement (IQB), Germany; Kyle Davison, Department of Education, University of Oxford, United Kingdom

**First assessing then adapting: The role of information processing in accurate teacher judgments**
Katharina Schnitzler, Technical University of Munich, Germany; Doris Holzberger, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

## SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel

**‘I have seen it from my home’: Young children’s perceptions of the 2019 social unrest in Hong Kong**
Caroline Cohrsen, Education Faculty, Hong Kong; Nimila Rao, The University of Hong Kong, Hong Kong

**Student motivation in teacher learning groups**
Emmy Vrielings-Teunter, Open University of the Netherlands, Netherlands; Patrick Sins, Thomas More University of Applied Sciences, Netherlands; Nicky de Vries, iPabo University of Applied Sciences; Vrije Universiteit Amsterdam, Netherlands; Marjan Vermaulen, Haerlen Open Universiteit, Netherlands

**How do prospective teachers define the technical term of reflection?**
Renata Kiss-Kovacs, University of Szeged, Doctoral School of Education, Hungary
# Session J: 4  Time: 17:30-18:30  Location: Session Room 1

## SINGLE PAPER: HIGHER EDUCATION

**Chair**
Sandra Mathers, University of Oxford, United Kingdom

- **Will they go or will they stay? An integrative approach to model the risky phase of study entrance**
  Pascale Stephanie Petri, Justus-Liebig Universität Giessen, Germany; Alexander Minnaert, University of Groningen, Netherlands; Martin Kersting, Justus-Liebig University Giessen, Germany

- **Predicting diverse students’ self selection from higher education: A systematic review**
  Marieke Meuwese, Erasmus University Rotterdam, Netherlands; Jana Vietze, Erasmus University Rotterdam, Netherlands; Sanne van Herpen, Erasmus University Rotterdam, Netherlands; Aike Dias-Broens, Erasmus University Rotterdam, Netherlands; Renihte Pulini, Erasmus Universiteit Rotterdam, Netherlands; Sabine Severiens, Erasmus University Rotterdam, Netherlands

- **Relationship between students’ burnout profiles, study processes and academic achievement**
  Nina Katajauson, University of Helsinki, Finland; Jusso Henrik Nieminen, University of Eastern Finland, Finland; Jokke Hila, University of Helsinki, Finland

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# Session J: 5  Time: 17:30-18:30  Location: Session Room 10

## SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS

**Chair**
Karl-Heinz Pogner, Copenhagen Business School, Denmark

- **The impact of text position and (un)resolved conflict between texts on online processing and recall**
  Anne Schaueler, Leibniz-Institut für Wissensmedien, Germany; Yvonne Kammerer, Leibniz-Institut für Wissensmedien (IWM); International School of Management, Germany; Daniela Becker, Behavioral Science Institute Nijmegen, Netherlands

- **Digital and Printed Text Comprehension in First Graders: The role of Medium and Word Reading Skills**
  Lucia Mason, University of Padova, Italy; Elena Florit, University of Verona, Italy; Pietro De Carli, University of Padova, Italy

- **The Development of Reading Fluency from Grade 2 to 4**
  Guido Nottbusch, University of Potsdam, Germany; Sabine Röttig, University of Potsdam, Germany

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# Session J: 6  Time: 17:30-18:30  Location: Session Room 11

## SINGLE PAPER: PSYCHOMETRICS

**Chair**
Kerry Lee, The Education University of Hong Kong, Hong Kong

- **Detecting Differential Rater Functioning in Severity and Centrality**
  Kwan-Yu Jin, Hong Kong Examinations and Assessment Authority, Hong Kong; Thomas Eckes, TestDaF Institute, University of Bochum, Germany

- **Eyeing Up Virtual Reality for Healthcare Training: Using Pupilometry to Assess Cognitive Load**
  Joy Yeonjo Lee, Maastricht University, Netherlands; Nynke de Jong, Health Services Research, Faculty of Health, Medicine, and Life Sciences, Maastricht University, Netherlands; Jeroen Donkers, Maastricht University, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands

- **The Spanish intrinsic and extrinsic motivation scales of the MSLQ: Psychometrics by Rasch models**
  Tine Nielsen, UCL University College, Denmark; Inmaculada Martinez-Garcia, University of Cadiz, Spain; Enrique Alastor, Universidad de Cadiz, Spain

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# Session J: 7  Time: 17:30-18:30  Location: Session Room 13

## SINGLE PAPER: TEACHING AND INSTRUCTION

**Chair**
Antje Barabasch, EHB, Switzerland

- **Towards reshaping the future with online instruction: Nigeria teachers’ experiences in COVID-19 era**
  Rachel Atoomatofa, Delta State College of Education, Mosogar, Nigeria

- **Pedagogical use of exemplars in higher education: A systematic review**
  Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong; Ernesto Panadero, Universidad Deusto, Spain; David Carless, University of Hong Kong, United Kingdom

- **Defining mentoring in higher education: a systematic literature review**
  Wendy Nuis, Maastricht University, Netherlands; Simon Beausaert, Maastricht University, Netherlands
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<td><strong>SINGLE PAPER: MOTIVATION AND SELF-REGULATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Marjolein Deunk, University of Groningen, Netherlands</td>
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<tr>
<td><strong>Interplay between parents' and children's basic psychological need satisfaction</strong></td>
<td>Vanessa Kuri, University of Reading, United Kingdom; Niosaku Fukuzumi, Kochi University, Japan; Ryo Ishi, Nara University of Education, Japan; Ayame Tamura, Doshisha University, Japan; Naoki Nakazato, Oita University, Japan; Kazuhiro Ohtani, Hokkaido University, Japan; Shin-ichi Ishikawa, Doshisha University, Japan; Takanori Suzuki, Kochi University of Technology, Japan; Michiko Sakaki, University of Reading, United Kingdom; Kousuke Murayama, University of Reading, United Kingdom; Ayumi Tanaka, Doshisha University, Japan</td>
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<td><strong>Student questioning and perceived teacher support: Online vs in-person classes in the COVID-19 era</strong></td>
<td>Eleftheria Goniad, Aristotle University of Thessaloniki, Greece; Stuart Karabenick, University of Michigan, United States</td>
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<td><strong>Effort and Learning-Related Choices: the Impact of Sympathetic Activity and Ability Beliefs</strong></td>
<td>Smiddy Nieuwenhuis, VU University Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Denise van der Mee, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Nienke van Alstvedt, Vrije Universiteit Amsterdam, Netherlands</td>
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<tr>
<td><strong>SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH</strong></td>
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<td><strong>Chair</strong></td>
<td>Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia</td>
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<td><strong>Strategic learning with text-picture-combinations: learning strategy or learning technique?</strong></td>
<td>Sabine Schlag, University of Wuppertal, Germany</td>
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<td><strong>The impact of verbal fluency on the effect of a self-regulated learning training</strong></td>
<td>Nathalie Zetzmann, Saarland University, Germany</td>
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<td><strong>Impact of Visual Complexity of Instructional Materials on the Split-Attention Effect</strong></td>
<td>Shihong Zhang, Erasmus University Rotterdam, Netherlands; Tatjana Fincke, Erasmus University Rotterdam, Netherlands; Bjorn de Koning, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands</td>
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<th>Session J: 10</th>
<th>Time: 17:30-18:30</th>
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<td><strong>SINGLE PAPER: VIDEO ANALYSIS</strong></td>
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<td><strong>Chair</strong></td>
<td>Robin Galier, Leuphana University Lueneburg, Germany</td>
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<td><strong>Analysing pre- and in-service teachers’ feedback practices in a standardized microteaching setting</strong></td>
<td>Marc Klenknecht, Leuphana University Lueneburg, Germany; Anna Holstein, Leuphana University Lueneburg, Germany; Kira Elena Weber, Leuphana University Lueneburg, Germany; Christopher Neil Philp, Leuphana University Lueneburg / University of Hamburg, Germany</td>
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<tr>
<td><strong>Unraveling novices’ PPK and PCK professional vision: A comprehensive video-analysis coding scheme</strong></td>
<td>Meg Farrell, Technische Universität München, Germany; Monika Martin, Albert-Ludwigs-Universität Freiburg, Germany; Alexander Renk, Albert-Ludwigs-Universität Freiburg, Institut für Psychologie, Germany; Werner Riez, Pädagogische Hochschule Freiburg, Germany; Tina Seidel, Technische Universität München, Germany</td>
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**Session J: 11**  
**Time:** 17:30-18:30  
**Location:** Session Room 4

**SINGLE PAPER: ASSESSMENT, EVALUATION AND QUANTITATIVE METHODS**

**Chair**  
Laura Messerer, University of Mannheim, Germany

**Correlation of visual and spatial skills, combinatorial and divergent thinking of adolescents**  
Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Bernadett Babányi, Óbuda University Ybl Miklós Faculty of Architecture, and Civil Engineering and Doctoral School of Education, Óbuda University, Hungary; Tünde Simon, Hungarian University of Fine Arts Visual Education Department, Hungary; Álta Széth, Károli Gáspár University of the Reformed Church in Hungary, Faculty of Teacher Training, and Visual Culture Research Group of the Hungarian Academy of Science and ELTE University, Hungary

**Evaluating the effectiveness of peer assessment moderation to influence teamwork behavior**  
Bhavani Sridharan, Australian Catholic University, Australia; David Boud, University of Technology Sydney/ Deakin University, Australia; Jamie Mustard, Deakin University, Australia

**In search of the lingua franca of classroom discourse quality assessments**  
Edith Bouton, Hebrew University of Jerusalem, Israel; Christa Asterhan, Hebrew University of Jerusalem, Israel

**Session J: 12**  
**Time:** 17:30-18:30  
**Location:** Session Room 5

**SINGLE PAPER: CITIZENSHIP EDUCATION FOR PRE-SERVICE TEACHERS**

**Chair**  
Krzysztof Krejz, SWPS University of Social Sciences and Humanities, Poland

**Investigating teachers' perceptions of environmental citizenship: A systematic review**  
Yiannis Georgiou, Cyprus University of Technology / Cyprus Center for Environmental Research & Education, Cyprus; Andreas Hadjichambis, Cyprus Center for Environmental Research & Education, Cyprus; Demetra Hadjichambis, Cyprus Center for Environmental Research & Education, Cyprus

**The Role of Extracurricular Activities in Preparing Pre-service Teachers as Active Citizens**  
Sibel Akin-Sabuncu, TED University, Faculty of Education, Turkey

**Teaching ESD – factors influencing student teachers’ implementation intention**  
Elisabeth Wegner, University of Freiburg, Germany; Julia Stossel, University of Freiburg, Germany; Rebecca Baumann, University of Freiburg, Germany

**Session K: 1**  
**Time:** 18:45-19:45  
**Location:** Session Room 8

**ICT DEMONSTRATION: ACTRAIN@SCHOOL: CAN WE BRING AI TO THE CLASSROOM TO FOSTER SELF-REGULATED LEARNING?**

ACTrain@School: Can we bring AI to the classroom to foster self-regulated learning?  
Maria Wirtberger, University of Stuttgart, Germany

**Session K: 2**  
**Time:** 18:45-19:45  
**Location:** Session Room 17

**ICT DEMONSTRATION: LABOUR MARKET DRIVEN EDUCATION USING OPEN AND FREE EDUCATIONAL RESOURCES**

**Labour Market Driven Education using Open and Free Educational Resources**  
Mohammadreza Tavakoli, German National Library for Science and Technology (TIB), Germany; Gábor Kismihók, Leibniz Information Centre for Science and Technology, Germany; Stefan Moi, University of Amsterdam, Netherlands; Alan Berg, University of Amsterdam, Netherlands; Jaaro Vrolijk, University of Amsterdam, Netherlands

**Session K: 3**  
**Time:** 18:45-19:45  
**Location:** Session Room 10

**ICT DEMONSTRATION: SHARING TEMPLATES FOR LESSON PLANS IN THE EDUCATIONAL MICROBLOGGING TOOL TALKWALL**

Sharing templates for lesson plans in the educational microblogging tool Talkwall  
Ingivill Rasmussen, University of Oslo, Norway; Victoria Cisk, University of Cambridge, UK; United Kingdom; Ole Smedal, Department of Education, Norway; Paul Warwick, University of Cambridge, United Kingdom; Kari Anne Rødnes, University of Oslo, Norway
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<th>Time: 18:45-19:45</th>
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<tr>
<td><strong>ICT DEMONSTRATION: HOW TO ADDRESS STUDENTS’ COGNITIVE AND MOTIVATIONAL HETEROGENEITY IN ONLINE LEARNING ENVIRONMENTS</strong></td>
<td>How to address students’ cognitive and motivational heterogeneity in online learning environments&lt;br&gt;Julia Dietrich, Friedrich-Schiller-University Jena, Germany; Franziska Greiner, Friedrich Schiller University of Jena, Germany; Dört Weber-Liel, Friedrich-Schiller University Jena, Germany; Belinda Banweger, Friedrich-Schiller University Jena, Germany; Nicole Kämpfe, Friedrich-Schiller-University Jena, Germany; Baerbel Kracke, University of Jena, Germany</td>
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<th>Session K: 5</th>
<th>Time: 18:45-19:45</th>
<th>Location: Session Room 13</th>
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<tr>
<td><strong>ICT DEMONSTRATION: LIVE REMOTE PROCTORING WITH SAFE EXAM BROWSER FOR WRITTEN, ORAL OR COLLABORATIVE ONLINE EXAMINATIONS</strong></td>
<td>Live Remote Proctoring with Safe Exam Browser for Written, Oral or Collaborative Online Examinations&lt;br&gt;Tobias Habib, ETH Zurich, Switzerland; Daniel Schneider, ETH Zurich, Switzerland; Bruno Rütsche, ETH Zurich, Switzerland; Thomas Piend, ETH Zurich, Switzerland</td>
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<th>Session K: 6</th>
<th>Time: 18:45-19:45</th>
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<tr>
<td><strong>PANEL DISCUSSION: OPPORTUNITIES OF EQUAL EDUCATION ACCESS BY CONSIDERING THE RELATION BETWEEN LANGUAGE AND MATH SKILLS</strong></td>
<td>Opportunities of equal education access by considering the relation between language and math skills&lt;br&gt;Tanya Evans, University of Virginia, United States; Deanna Kayes, Not applicable, United States; Joerg-Tobias Kuhn, TU Dortmund University, Germany; Noelia Sánchez-Pérez, University of Zaragoza, Spain; Kirsten Winkel, University of Mainz, Germany</td>
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<tr>
<td><strong>PANEL DISCUSSION: DEVELOPING AND NURTURING POLITICAL EFFICACY AMONG YOUTH</strong></td>
<td>Developing and Nurturing Political Efficacy among Youth&lt;br&gt;Eva Kosberg, OsloMet, Norway; Tessa Eriksson Greve, Oslo metropolitan university, Norway; Lars Birger Davan, OsloMet, Norway; Grete Vandvik, Save the Children Norway, Norway; Ingrid Aapelund, The European Wergeland Center, Norway; Anders Kjøvetvedt, Oslo Metropolitan University, Norway</td>
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<th>Session K: 8</th>
<th>Time: 18:45-19:45</th>
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<tr>
<td><strong>PANEL DISCUSSION: NEW HORIZONS FOR CITIZENSHIP EDUCATION</strong></td>
<td>New Horizons for Citizenship Education&lt;br&gt;Ido Gideon, The Hebrew University of Jerusalem, Israel; Omer Keynan, The Hebrew University of Jerusalem, Israel; Benzi Slakmon, Tel Aviv University, Israel; Alessio Sutari, Università degli Studi di Padova, Italy; Jan Yarpanen, University of Tampere, Finland, Finland; Anne Söli, University of Gothenburg, Sweden; Asa Makitalo, University of Gothenburg, Sweden</td>
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### POSTER PRESENTATION: CITIZENSHIP EDUCATION

| Chair                  | Innovative forms of Bildung as an approach for democratic involvement and practice  
Stefanie A. Hillen, Department of Education, Norway; Rainer Christ, Head of Division (ret.) at Ministry for Science, Culture & Further Education, Rheinland-Palatinate, Germany  
Moral Education Curriculum in Italian middle school: a research design  
Liliana Silva, University of Messina, Italy; Maurizio Fabbri, Alma Mater Studiorum University of Bologna, Italy; Ira Vannini, Alma Mater Studiorum Università di Bologna, Italy  
Moral education as a tool for democratic societies: a documentary analysis in Italian middle schools  
Liliana Silva, University of Messina, Italy; Elia Pasolini, Alma Mater Studiorum Università di Bologna, Italy; Maurizio Fabbri, Alma Mater Studiorum Università di Bologna, Italy  
Understanding biodiversity’s conceptions based on student’s analogies  
Laura Leon, University of Geneva, Switzerland; Catherine Auvrin, University of Geneva, Switzerland; Emmanuel Sander, University of Geneva, Switzerland  
Cultural Education: A panacea for civic and political engagement in rural areas?  
Lea Fobel, University of Leipzig, Germany; Martin Büdel, University of Leipzig, Germany; Nina Kolleck, University of Leipzig, Germany  
Perception of and coping with multiple institutional discrimination by young women at school  
Eva Dalhaus, University of Education, Freiburg, Germany |

### POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT

| Chair                  | Shaping the future - teachers engagement with Education for Sustainable Development in Norway  
Sonia Felix, NTNU (Norwegian University of Science and Technology), Norway  
The Role Enactment of Academic Developers Supporting Teacher reDesign Teams in a University Setting  
Louloudi Detelina, UGENT, Belgium; Tijjs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium  
Teachers for the futures? Neglected sociomaterial dimension of teacher professionalism  
Ka Lok Cheung, The University of Hong Kong, Hong Kong; Carol Chan, The University of Hong Kong, Hong Kong; Sai Mun Stanley Ho, The University of Hong Kong, Hong Kong; Wing Hoi Cathy Shiu, The University of Hong Kong, Hong Kong  
Fostering distributed leadership at schools: A case study in the Asian context  
Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong; Yuan Yi Lo, The University of Hong Kong, Hong Kong  
Expertise development of university teachers in different teacher tasks: A multiple-case study  
Esther van Dijk, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands; Mariève van der Schaaf, University Medical Center Utrecht, Netherlands; Marjolein Kluijtmans, UMC Utrecht, Netherlands  
Assessing Teacher Design Teams as a tool for the empowerment of Project Integrated General Subjects  
Tina Gryson, Ghent University, Belgium; Katrin Strubbe, Ghent University, Belgium; Tony Valske, Ghent University, Belgium; Ruben Vanderinde, Ghent University, Belgium |
## Session K: 11
**Time:** 18:45-19:45  
**Location:** Session Room 16

### POSTER PRESENTATION: SOCIAL AND PEER INTERACTION

| Chair | Exploring Change in Networks Supporting the Deliberate Practice of Popular Musicians  
Manuel Laengler, University of Regensburg, Germany; Jasperina Brouwer, University of Groningen, Netherlands; Annete Timmermans, University of Groningen, Netherlands; Hans Gruber, University of Regensburg, Germany  
Towards Mathematics Education as part of Ethical Citizenship under Covid 19  
Sikunder Ali, Norwegian University of Science and Technology (NTNU), Norway  
Peer mentoring and learning in eSports: An apprentice’s learning in online in-game interactions  
Fredrik Russ, Nord University, Norway; Malida Ståhl, Åbo Akademi University in Vaasa, Finland; Kenneth Silseth, University of Oslo, Norway  
Cooperation in Designated Workplace Learning Settings: A Social Network Study Among Student Nurses  
Blanca Steffen, University of Paderborn, Germany; Michael Goller, Friedrich Schiller University Jena, Germany  
Collaborative intervention in children's concept formation and agentic future-making in schools  
Katsuhiro Yamazumi, Kansai University, Japan |  
| Systemic and individual differences in adolescents' interest ecologies.  
Joris Beek, University Utrecht, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Larjke Bronkhorst, Utrecht University, Netherlands |  
| Thea van Lankveld, Utrecht University, Netherlands |}

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## Session K: 12
**Time:** 18:45-19:45  
**Location:** Session Room 6

### POSTER PRESENTATION: EDUCATIONAL TECHNOLOGY

| Chair | Adaptive Educational Games and Their Use of Analytics – A systematic review  
Maik Biegele, Chemnitz University of Technology, Germany; Steve Nebel, Chemnitz University of Technology, Germany; Manuel Ninas, University of Innsbruck, Austria  
Digital Divide and Online Risks Among Hong Kong Secondary Students  
Fred H. F. Chan, The University of Hong Kong, Hong Kong; Allan H. K. Yuen, Yew Chung College of Early Childhood Education, Hong Kong |  
| Eye movements during learning of the molecular shapes with Augmented Reality  
Fang Ying Yang, National Taiwan Normal University, Taiwan; Hui Yu Wang, National Taiwan Normal University, Taiwan |  
| Users’ perceptions of adopting new technologies as a guide for tailored LA tool deployment in HE  
Amanda Sjöblom, Aalto University, Finland; Anni Silvola, University of Oulu, Finland; Jiri Lallimo, Aalto University, Finland |  
| Real time measuring of individual learners’ self regulation during learning  
Rick Dijkstra, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Max Hinne, Radboud University Nijmegen, Netherlands |  
| Increasing College Students’ Depth of Knowledge: Comparing Video and Discussion Board Responses  
Suzanne Lindt, Midwestern State University, United States; Stacia Miller, Midwestern State University, United States; Christina Janise McIntyre, Midwestern State University, United States |
### POSTER PRESENTATION: ASSESSMENT METHODS AND TOOLS

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<th>Predicting Math and Reading Achievement Using Dynamic Testing</th>
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<td>Montiz Börnert-Ringleb, Leibniz University Hannover, Germany; Jürgen Wilbert, Universität Potsdam, Germany</td>
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<th>Automated versus Human Scoring of Student-Generated Models of Scientific Systems</th>
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<td>Yujin Tao, University of North Carolina at Chapel Hill, United States; Kihyun &quot;Kelly&quot; Ryoo, University of North Carolina at Chapel Hill, United States; Kathleen McCarron, University of North Carolina, United States; Ziqian Xu, UNC Chapel Hill, United States; Mara Negrut, University of North Carolina at Chapel Hill, United States</td>
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<tr>
<th>Development of a multilevel communication model for higher education</th>
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<tr>
<td>Kristina Walz, Justus-Liebig-Universität Giessen, Germany; Edith Braun, Justus-Liebig-Universität Giessen, Germany</td>
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<th>Prediction of student outcomes with broadband and narrowband dimensions of behavior</th>
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<td>Pawel R. Kulawik, University of Potsdam, Germany; Jürgen Wilbert, Universität Potsdam, Germany; Robert Schlack, Robert Koch Institute, Germany; Montiz Börnert-Ringleb, Leibniz University Hannover, Germany</td>
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<th>An Investigation of Item Difficulties to Assess Students Multiple Representations in Work and Energy</th>
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<tr>
<td>Fitria Antiyanti, University of Szeged, Doctoral School of Education, Hungary; Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary</td>
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<th>An Emic Approach to Develop Expectancy-Value-Cost Measures of Student Motivation in Rwanda</th>
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<td>Dominik Bulla, Oxford University, United Kingdom</td>
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### POSTER PRESENTATION: ONLINE LEARNING

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<tr>
<th>Chair</th>
<th>Norwegian Teachers' Learning in MOOC: Insights into epistemic practices and teacher digital agency</th>
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<td>Irina Engenes, Østfold University College, Norway; Magnus Nohr, Østfold University College, Norway</td>
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<tr>
<th>Comparison of digital and analog learning environments to foster self-regulated learning</th>
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<td>Nathalie Zeitmann, Saarland University, Germany</td>
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<th>REST: A MOBILE APPLICATION TO EMPOWER TEACHERS' RESILIENCE</th>
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<td>Maria Platsidou, University of Macedonia, Greece; Athena Danilioudou, University of Macedonia, Greece; Georgia Diamantopoulou, University of Macedonia, Greece; Paul Hatziagiannakoglou, University of Macedonia, Greece</td>
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<th>Secondary school teachers' online FA practice (during Covid-19 lockdown)</th>
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<tr>
<td>Marijke Vouwen, Wageningen University and Research Centre, Netherlands; Judith Gulikers, Wageningen University, Netherlands; Penny den Brok, Wageningen University and Research Centre, Netherlands</td>
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<tr>
<th>Investigating the effects of learner characteristics and Instructional Design in online learning</th>
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<td>Lisa Holzer-Schultz, University of Regensburg, Germany; Silke Schworm, University of Regensburg, Germany</td>
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<tr>
<th>Teachers' Role in Promoting Self-Regulated Learning Using Digital Media</th>
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<tr>
<td>Désirée Fahrni, Pädagogische Hochschule Schwyz, Switzerland; Doreen Prasse, Schwyz University of Teacher Education, Switzerland; Elena Iten, Pädagogische Hochschule Schwyz, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland</td>
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POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
FOTINI POLYCHRONI, NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, Greece

- **Effectiveness of follow-up classroom observations after school inspections in Northern Germany**
  Inga Wagner, University of Koblenz-Landau, Germany

- **Tacit dimensions of religious teacher praxis: a research project**
  Cristian Simoni, University of Padua, Italy

- **Evaluating New Approaches in Initial Teacher Training — Mentorship programs in School Practice**
  Stefan Kulakow, University Greifswald, Germany; Diana Raufelder, University Greifswald, Germany; Frances Holterrichter, University Greifswald, Germany

- **Does Reverse Mentoring promote (pre-service) teacher competence regarding digital media?**
  Franziska Bailer, Goethe-Universität Frankfurt, Germany; Julia Doehmann, Goethe-University Frankfurt, Germany; Charlotte Dignath, DIPIF Leibniz Institute for Education Research Frankfurt, Germany; Katja Kruth-Heinzl, German University of Administrative Sciences Speyer, Germany; Mareike Kunter, DIPIF | Leibniz Institute for Research and Information in Education, Germany

- **The design of a professional development initiative for university teachers**
  Britta Adams, Ghent University, Belgium; Laura Monique Thomas, Ghent University, Belgium; Martin Valcke, Ghent University, Belgium

- **A Pre-Service Math Teacher’s Professional Identity Development Trajectory through Online Reflections**
  Amine Merve Ercan, Middle East Technical University, Turkey; Nur Akkus Cakir, Middle East Technical University, Turkey

POSTER PRESENTATION: VOCATIONAL EDUCATION AND WORKPLACE LEARNING

**Chair**
Gillian Lake, DCU, Ireland

- **Citizenship education, labour market needs and the technical education in Sierra Leone**
  Alberto Nagle Cajes, Independent Consultant, Uruguay

- **Digital learning arrangements in VET within the Swiss pharmaceutical industry**
  gaby walker, Edigössisches Hochschulinstitut für Berufsbildung, Switzerland; Antje Barabasch, EHB, Switzerland

- **In-Service versus Pre-Service Teachers’ Understanding of Learning Progress Assessment Data**
  Wiebke Vorpahl, University of Hohenheim, Germany; Julia Warwas, University of Hohenheim, Germany

- **Experiments as a means to cater for better transfer in continued professional development**
  Sofie Kobayashi, University College Copenhagen, Denmark

- **Learning to work autonomously throughout the apprenticeship at the Swiss Postal Service**
  Antje Barabasch, EHB, Switzerland; Fabio Briante, EHB, Switzerland

- **Exploring performance feedback experiences of residents working at a COVID-department**
  Marja Lesterhuis, University of Antwerp; Spaarns Gasthuis, Netherlands; Marlies Euringa, Spaarns Gasthuis, Netherlands; Marieke van der Schaal, University Medical Center Utrecht; Netherlands; Reinier Hof, University Medical Center Utrecht, Netherlands

INVITED SYMPOSIUM: SIG 13: MORAL AND DEMOCRATIC EDUCATION IN AN AGE OF EXTREMISM

**Chair**
Hazel Bryan, University of Huddersfield, United Kingdom

**Organiser**
Eveline Gutzwiller-Hettenfinger, University of Fribourg, Switzerland

**Discussant**
Paul Thomas, University of Huddersfield, United Kingdom

- **Muslims, Security and the Question of ‘Prevent’**
  Shiamim Mah, University of Huddersfield, United Kingdom

- **Muslim Children at Risk of Social Maladjustment: Developing a New Method to Study a Blind Spot**
  Kamil Nasibullayev, Academy of Sciences of the Republic of Tatarstan, Russian Federation; Natalia Kopylova, Kutafin Moscow State Law University, Russian Federation

- **Chilling the student voice? Counter-terrorism policy and the ‘political citizen’ in English Schools**
  Paul Thomas, University of Huddersfield, United Kingdom

- **Securitised, safeguarding and democratic themes in counter-terrorism education policies**
  Hazel Bryan, University of Huddersfield, United Kingdom; Lynn Revel, Canterbury Christ Church University, United Kingdom; Andrea Szukala, Institute of Political Science (IIPol), Univ of Muenster, Germany
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<th>Session L: 1</th>
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<td><strong>POSTER PRESENTATION: ARGUMENTATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Kati Sormunen, University of Helsinki, Finland</td>
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<td><strong>Effects of dialogic education: traces of dialogism in teachers’ small stories</strong></td>
<td>Benzi Slakmon, Tel Aviv University, Israel; Orly Shapira, Tel Aviv University, Israel</td>
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<td><strong>Students’ arguing skills: impact of teaching beliefs and students’ epistemological understanding</strong></td>
<td>Iris Huiders, Ghent University, Belgium; Michel Voet, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium</td>
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<td><strong>Reasoning in early years – the role of animations in children’s play with building blocks</strong></td>
<td>Ove Bergersen, Department of Early Childhood Education, Norway</td>
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<td><strong>Argumentation and knowledge construction in higher education: A Vygotskian perspective</strong></td>
<td>Ingrid González, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile</td>
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<td><strong>Text-Based Dialogic Pedagogy in Early Childhood Classrooms: Mapping the Landscape</strong></td>
<td>Ian A.G. Wilkinson, Ohio State University, United States; Leiah Groom-Thomas, Ohio State University, United States; Joowon Lee, Ohio State University, United States</td>
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<td><strong>Students’ Scientific Evaluation of Astronomy Concepts</strong></td>
<td>Archana Dobaria, Temple University, United States; Janelle Bailey, Temple University, United States; Svetla Mohan, University of Maryland, College Park, United States; Timothy Klaxon, University of Maryland, College Park, United States; Josh Medrano, University of Maryland, College Park, United States; Joshua Jaffe, University of Maryland, College Park, United States; Doug Lombardi, University of Maryland, College Park, United States</td>
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<td>Session L: 2</td>
<td>Time: 09:00-10:00</td>
<td>Location: Session Room 6</td>
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<td><strong>POSTER PRESENTATION: COMPREHENSION OF TEXT AND GRAPHICS</strong></td>
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<td><strong>Chair</strong></td>
<td>Hye Rin Lee, University of California Irvine, United States</td>
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<td><strong>An analytic description of ProjectExpert: A reading program for 8th-grade vocational students</strong></td>
<td>Kim Van Ammel, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Koen Aesaert, Catholic University of Leuven, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<td><strong>Development of a progress monitoring tool for upper primary students’ reading comprehension</strong></td>
<td>Rieke Bogaste, Ghent University, Belgium; Koen Aesaert, KU Leuven (BE), Belgium; Emmelien Mervielde, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<td><strong>THE CONTRIBUTION OF PROSODY IN ORAL COMPREHENSION IN THE FRAMEWORK OF SIMPLE VIEW OF READING</strong></td>
<td>NATALIA CALVO-BLÁZQUEZ, Universidad de Salamanca, Spain; JOSÉ RICARDO GARCÍA PÉREZ, Universidad de Salamanca, Spain; Emilio Sánchez, Facultad de Psicología, Spain</td>
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<td><strong>Multiple-text task-oriented reading in 4th and 6th graders: comprehension vs selection skill</strong></td>
<td>Ruth Villalon, University of Cantabria, Spain; Hector Garcia-Rodrigo, University of Cantabria, Spain; Ma. Angeles Melero Zabai, Universidad de Cantabria, Spain; Maria Belen Izquierdo, Universidad de Cantabria, Spain</td>
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<td><strong>Role-Taking in Literary Text Reception and its Relation to Reading Attitudes and Text Comprehension</strong></td>
<td>Nora Heyne, Otto-Friedrich-Universität Bamberg, Germany; Maximilian Pfost, University of Bamberg, Germany; Hanna Heller, Otto-Friedrich-Universität Bamberg, Germany</td>
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<td><strong>Influence of the gender asterisk (“Gendersternchen”) on comprehensibility and interest</strong></td>
<td>Marcus Friedrich, Technische Universität Braunschweig, Germany; Elke Heise, Institut für Pädagogische Psychologie, TU Braunschweig, Germany; Veronika Dröfler, Institut für Pädagogische Psychologie, TU Braunschweig, Germany</td>
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### POSTER PRESENTATION: READING COMPREHENSION

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<td>Julia Schieter, University of Tübingen, Germany</td>
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| **Piloting a digital learning environment for differentiated reading materials in diverse classrooms** |
| Lisa Palczewski, University of Graz, Austria; Daniela Ender, Private University College of Teacher Education Diocese of Graz-Seckau, Austria; David Wohlhart, Private University College of Teacher Education Diocese of Graz-Seckau, Austria; Susanne Seelen, University of Graz, Austria; Jessica Berger, University of Graz, Institute of Education Research and Teacher Education, Austria; Katharina Prinz, University of Graz, Institute of Education Research and Teacher Education, Austria |

| **Transmission and transaction beliefs: The factor structure of the German Reader Belief Inventory** |
| Nina Mahlow, Leibniz Institute for Educational Trajectories (LITB), Germany; Carolin Hahnel, DIPF; Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Ulf Kroehne, DIPF, 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; Cornelia Schoor, University of Bamberg, Germany |

| **Improving reading skills in L1 and L2 classes – teachers’ opinion on Hungarian reading instruction** |
| Blanka Tary, University of Szeged, Doctoral School of Education, Hungary |

| **Does L2 proficiency make a difference when Hungarian teachers read in L1 and L2?** |
| Blanka Tary, University of Szeged, Doctoral School of Education, Hungary |

| **Do students pay attention to texts on screens as in print? An EEG study** |
| Pablo Delgado, University of Valencia, Spain; Ladislao Salmeron, University of Valencia, Spain; Lidia Altamura, University of Valencia, Spain; Marta Vergara-Martinez, University of Valencia, Spain |

| **Effects of score-based and log data-based feedback in a test of multiple document comprehension** |
| Theresa Zink, Otto-Friedrich-Universität Bamberg, Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Ulf Kroehne, DIPF, Germany; Tobias Derbo, DIPF | Leibniz Institute for Research and Information in Education, Germany; Nina Mahlow, Leibniz Institute for Educational Trajectories (LITB), 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; Johannes Neumann, Bergische Universität Wuppertal, Germany; Cornelia Schoor, University of Bamberg, Germany |

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### POSTER PRESENTATION: SCIENCE EDUCATION

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<td>Uwe Maier, University of Education Schwäbisch Gmünd, Germany</td>
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| **Knowledge For Everyone: Translating Psychological Evidence Into Plain Language** |
| Martin Kenner, Leibniz Institute for Psychology (ZPID), Germany; Marlene Stölzl, Leibniz Institute for Psychology (ZPID), Leibniz Institute for Resilience Research (LIR), Germany; Anita Chasiotis, Leibniz Institute for Psychology (ZPID), Germany; Klaus Lieb, Leibniz Institute for Resilience Research (LIR), Germany; Michael Bosnjak, Leibniz Institute for Psychology (ZPID), Germany |

| **Productive and argumentative discussions in science in Chile: practices, needs, and challenges** |
| Florencia Gomez Zuccarelí, Pontificia Universidad Católica de Chile, Chile; Natalie Cándido Vencescas, Pontificia Universidad Católica de Chile, Chile; Belén Hernández, Pontificia Universidad Católica de Chile, Chile |

| **Scaffolding Collaborative Discourse and Modeling Practices** |
| Yinu Hu, University of North Carolina at Chapel Hill, United States; Yujin Tao, University of North Carolina at Chapel Hill, United States; Kihyun “Kelly” Ryoo, University of North Carolina at Chapel Hill, United States |

| **Analysing science, technology, engineering and mathematics (STEM) field with topic modelling** |
| Ar Turku, University of Jyväskylä, Finland; Catalina Espinoza, University of Chile, Chile; Raaja Hämäläinen, University of Jyväskylä, Finland; Tommi Kärkkäinen, University of Jyväskylä, Finland; Joni Lämä, University of Jyväskylä, Finland; Matias Mäki-Kuutti, University of Jyväskylä, Finland |

| **How do people search for content and source information across knowledge domains?** |
| Holger Futterleib, University Erfurt, Germany; Leonie Altmann, University Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Tillmann Betzsch, University Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany |

| **Task perception, task performance, and learning outcomes in simulation-based inquiry learning** |
| Tomi Jaakkola, Tampere University, Finland; Koen Veer mans, University of Turku, Finland |
**Session L: 5**

**Time:** 09:00-10:00  
**Location:** Session Room 5

### POSTER PRESENTATION: ATTITUDES AND BELIEFS

**Chair**  
Mårk White, University of Oslo, Norway

- **Promoting and supporting future teachers’ attitudes towards inclusion through an e-learning module**  
  Daria Ferencik-Lehmkuhl, University of Cologne, Germany; Itham Huynh, University of Cologne, Germany; Vanessa Heuser, University of Cologne, Germany; Ayana Tamawaki, University of Cologne, Germany

- **“HERO” – Effects of an attributional retraining program**  
  Daniel Schropp, Ulm University, Germany; Lisa Ronspade, Ulm University, Germany; Tina Seufert, Ulm University, Germany

- **Facilitating Teacher Learning about Classroom Discourse: The Role of Constructivist Beliefs**  
  Dennis Hauck, Friedrich-Schiller-University Jena, Germany; Alexander Groeschner, Friedrich-Schiller University Jena, Germany; Martina Alles, Technische Universität München (TUM), Germany; Maralena Weil, Technical University of Munich, Germany; Ricardo Böhme, University of Augsburg, Germany; Ann-Kathrin Schindler, Technische Universität München, Germany; Tina Seidel, Technische Universität München, Germany

- **The promise and challenges of peer facilitation to support teacher learning about dialogic teaching**  
  Elisa Calcagni, Friedrich Schiller University Jena, Germany

- **Local facilitation of practitioner-led inquiry into classroom dialogue using a research-based tool**  
  Sara Hennessy, University of Cambridge, United Kingdom; Ruth Kershner, University of Cambridge, United Kingdom; Elisa Calcagni, Friedrich Schiller University Jena, Germany; Farah Ahmed, University of Cambridge, England, United Kingdom

- **Q Methodology: Assessing subjectivities in teacher education through structured ranking of items**  
  Susann Julia Lexig, Friedrich-Schiller-University Jena, Germany; Hanna Köhler, Friedrich-Schiller-University Jena, Germany; Carina Carusa, University of Padheroun, Germany; Michael Goller, Friedrich Schiller University Jena, Germany

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**Session L: 6**

**Time:** 09:00-10:00  
**Location:** Session Room 7

### POSTER PRESENTATION: STUDENT LEARNING AND PEER INTERACTION

**Chair**  
Hsin-Yi Chang, National Taiwan Normal University, Taiwan

- **A phenomenological study of adolescent thinking in dialogue about literary texts**  
  Sadia Shafquat, University of Cambridge, UK, United Kingdom

- **How preterm birth and social burdens of the family are affecting on children’s executive functions?**  
  Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland; Switzerland; Simone Schaub, University of Applied Sciences of Special Needs Education, Switzerland; Erich Ramsauer, PH Bern, University of Teacher Education, Switzerland; Andrea Lanfranchi, University of Applied Sciences of Special Needs Education, Switzerland; Alex Neuhauser, University of Applied Sciences of Special Needs Education, Switzerland

- **The Relation of Representational Competence and Conceptual Knowledge about Electromagnetism**  
  Sarah Malone, Saarlouis University, Germany; Peter Edelbrunner, ETH Zurich, Switzerland; Andreas Lichtberger, ETH Zurich, Switzerland; Stefan Küstermann, TU-Kaiserslautern, Germany; Jochen Kuhn, TU Kaiserslautern, Physics Education Research Group, Germany; Andreas Vaterlaus, ETH Zurich, Switzerland; Elisabeth Sterke, ETH Zurich, Switzerland; Roman Schmidt, ETH Zurich, Switzerland; Ralph Schumacher, ETH Zurich, Switzerland; Kristin Altmeier, Saarlouis University, Germany; Roland Brünerken, Saarlouis University, Germany

- **The Effect of Standing versus Sitting on Creativity in Vocational Education and Training Students**  
  Petra Jutteijn, Open University of the Netherlands, Netherlands; Inge van der Wulf, Open University of the Netherlands, Netherlands; Amika Singh, Muher Institute, Netherlands; Hans Savelberg, Maastricht University, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands

- **Dog-Assisted Interventions in Higher Education: A Way to Promote Students’ Perceived Well-Being**  
  Cathrin Rothkopf, Universität Regensburg, Germany; Silke Schwarm, University of Regensburg, Germany

- **Stress management and resilience fostering in students’ curricula: Implementation of an intervention**  
  Natalie Peters, TU Dresden, Fakultät Wirtschaftswissenschaften, Germany
**Session L: 7**  
**Time:** 09:00-10:00  
**Location:** Session Room 3  

### POSTER PRESENTATION: TEACHING AND INSTRUCTION

**Chair**  
Sonja Berger, Ludwig-Maximilians-Universität (LMU), Germany

#### Assessing secondary teachers' gender competencies and stereotypes in physics  
Sanja Atanasova, Pädagogische Hochschule St. Gallen, Switzerland; Nicolas Robin, Fachdidaktik Naturwissenschaften, Switzerland; Dorothee Brevelli, Pädagogische Hochschule Luzern, Switzerland

#### Critical Thinking in Norwegian Teacher Education (CT-TED)  
Leila Ferguson, Kristiansia University College, Norway; Jamila Bubikova-Moan, Kristiansia University College, Norway; Magne Sikabedt Jensen, Ostfold University College, Norway

#### Identifying and Implementing Digital Teaching-Learning-Scenarios in Pre-Service Teacher Education  
Nadine Schlotrams-Bodenstein, Karlsruhe University of Education, Germany; Bernhard Stadl, Karlsruhe University of Education, Germany

#### Self-efficacy of pre-service teachers on writing instruction in inclusive classrooms  
Sandra Schwinnng, University of Wuppertal, Germany; Sarah Jagemann, Bergische Universität Wuppertal, Germany

#### Critical Thinking as a Tool in Education for Sustainable Development  
Elke Sinakou, University of Antwerp, Belgium; Paragota Avelthroit, Solkoop Inc, Greece

#### Reinterpreting Pedagogical Diagnostics for Implementation in Teacher Education Programmes  
Claudia Schreiner, University of Innsbruck, Austria; Austria; Christian Kraler, Teacher Education and School Research, Austria

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**Session L: 8**  
**Time:** 09:00-10:00  
**Location:** Session Room 10  

### POSTER PRESENTATION: COLLABORATIVE LEARNING

**Chair**  
Courtney Pollack, Boston College, Massachusetts Institute of Technology, United States

#### Investigating the relation of situational self-efficacy and participation in group level regulation  
Sara Ahoja, University of Oulu, Finland; Finland; Jonna Malmberg, University of Oulu, Finland; Finland; Hanna Jarvenoja, University of Oulu, Finland

**A Scoping Review on Concepts and Interventions of Socially Shared Metacognitive Regulation**  
Mari Aker, Faculty of Educational Sciences - Open University of the Netherlands, Netherlands; Jan van Bruggen, Open University, Netherlands; Marjan Vermeulen, Hoornan Open University, Netherlands

#### Sequences of participatory roles and metacognitive regulation during collaborative learning  
Olli-Pekka Heinimäki, University of Turku, Finland; Tuula Iskala, University of Turku, Finland

#### Studying psychophysiological conditions enabling cognitive regulation in collaborative learning.  
Marta Sobocinski, University of Oulu, Finland; Andy Nguyen, University of Oulu, Finland; Sanna Järvetiqué, University of Oulu, Finland

#### Learning of working life competencies through collaborative problem-solving in higher education  
Niina Impoli, University of Oulu, Finland; Pirro Isiklantteri, University of Oulu, Finland, Finland; Bhavna Rawat, University of Oulu, Finland

#### Solving problems collaboratively, but remotely in higher education: Relevance of pedagogical design  
Pirro Isiklantteri, University of Oulu, Finland; Finland; Niina Impoli, University of Oulu, Finland; Bhavna Rawat, University of Oulu, Finland
### POSTER PRESENTATION: SELF-REGULATION AND SELF-EFFICACY

**Chair**  
Ania Tadaoui-Brahmi, HEP Fribourg, Switzerland

- **Professional Vision Practices in Video Intervention: Can Self-Regulated Learning Make a Difference?**  
  Orna Heaysman, School of Education, Bar-Ilan University, Israel; Bracha Kramarski, Bar-Ilan University, Israel

- **Teachers’ Self-regulation in different disciplines: Do authentic experiences matter?**  
  Bracha Kramarski, Bar-Ilan University, Israel; Orna Heaysman, School of Education, Bar-Ilan University, Israel

- **Child’s Self-Regulated Learning (SRL) and Mother’s SRL, Metaprocesses, and External Regulation**  
  Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Lihi Sarfaty, University of Haifa, Faculty of Education, Israel

- **What are we really aiming for? Identifying concrete student behavior in formative assessment**  
  Judith Gulkens, Wageningen University, Netherlands; Marjoke Veugen, Wageningen University and Research Centre, Netherlands; Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands

- **Oral feedback in the foreign language classroom: Student perceptions and the role of proficiency**  
  Yoshiyuki Nakata, Doshisha University, Japan; W. L. Quint Oga-Baldwin, Waseda University, Japan; Atsuko Tsuda, Hyogo Prefectural Kawasani Midori Senior High School, Japan

- **Efficacy, Autonomy, and Clarity: Fostering Agentic Engagement Online**  
  Jeff Vor mund, George Mason University, United States; Angela Miller, George Mason University, United States; Melissa Broeckelman-Post, George Mason University, United States

### Session L: 10

**Time:** 09:00-10:00  
**Location:** Session Room 13

### POSTER PRESENTATION: WRITING AND LITERACY

**Chair**  
Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

- **Empowering Secondary School Students’ Argumentative Writing Skills.**  
  Yana Landrieu, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

- **Teaching (academic and professional) writing for participation in society**  
  Vibeke Christensen, University of Southern Denmark, Denmark; Peter Hobel, Institute for the Studies of Culture, University of Southern Denmark, Denmark

- **Academic writing, feedback and Disciplinary Writing Tutors**  
  Peter Hobel, Institute for the Studies of Culture, University of Southern Denmark, Denmark; Vibeke Christensen, University of Southern Denmark, Denmark

- **Concise text procedures as an indicator of writing competency in 4th grade persuasive texts**  
  Veronika Österbauer, IGS, Austria; Antonia Bachinger, Federal Institute for the Quality Assurance in the Austrian School System, IGS, Austria; Gabrièle von Eichhorn, Institut des Bundes für Qualitätsicherung im Österreichischen Schulwesen (IGS), Austria; Michael Prof. Dr. Krellle, Chemnitz University of Technology, Germany

- **An Investigation into Measures of Linguistic Accuracy in Written Corrective Feedback Research**  
  Nang Kham Thit, University of Szeged, Doctoral School of Education, Hungary

- **Do image interpretation models foster students’ historical thinking competencies?**  
  Kevin van Loon, PH FHNW, Switzerland
 Session L: 11  |  Time: 09:00-10:00  |  Location: Session Room 18

**POSTER PRESENTATION: EARLY CHILDHOOD EDUCATION**

**Chair**
Marwin Felix Looper, Paderborn University, Germany

**Early Childhood Educator Individual And Collaborative Job Crafting**
Janine Hostetler Schäfer, PHSG, Switzerland

**The use of software solution to support children’s transition from Pre-school to Primary School**
Gillian Lake, DCU, Ireland

**Predicting early childhood education teacher candidates’ views of coding**
Bian Le, The Pennsylvania State University, United States; Anna Y. Zhang, The Pennsylvania State University, United States; Eunseo Lee, The Pennsylvania State University, United States; ChanMin Kim, The Pennsylvania State University, United States

**Using lag sequential analysis to determine significant behavior transitions while debugging**
Bian Le, The Pennsylvania State University, United States; ChanMin Kim, The Pennsylvania State University, United States; Emre Dinc, The Pennsylvania State University, United States; Anna Y. Zhang, The Pennsylvania State University, United States

**Effects of an intervention designed to promote the transfer of parents’ language supporting skills**
Alex Hodgskis, University of Oxford, United Kingdom; Sandra Mathers, University of Oxford, United Kingdom; Victoria Murphy, University of Oxford, United Kingdom

**Interaction quality in early child-care centers and its associations with structural characteristics**
Franka Baron, German Youth Institute, Germany; Dorothea Dornheim, University of Bamberg, Germany; Simone Lehr, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany

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 Session L: 12  |  Time: 09:00-10:00  |  Location: Session Room 9

**POSTER PRESENTATION: PRE-SERVICE AND IN-SERVICE TEACHER EDUCATION**

**Chair**
Josef Guggemos, University of St.Gallen, Switzerland

**Participating in an academic lifelong learning course affects self-efficacy for teaching adults**
Nurit Gur-Yash, Oranim Academic College of Education, Israel; Ponit Herscu-Klusa, Oranim Academic College of Education, Israel; Sara Pe'er, Oranim Academic College of Education, Israel

**Metacognitive knowledge and skills among teachers who engage in a participatory action research**
Shirley Miedlensky, Oranim Academic College, Shamir Institute, University of Haifa, Israel; Irri Sasson, Tel-Hai College, Israel

**Supporting beginning teachers’ professional identity: Studying an induction model in South Africa**
Ruben Vanderinde, Ghent University, Belgium; Marguerite Müller, University of the Free State, Bloemfontein, Free State, South Africa; South Africa; Laura Monique Thomas, Ghent University, Belgium; Melissa Tuytens, Ghent University, Belgium; Loran Peeck, VVOB, South Africa

**Why prospective elementary school teachers (don’t) intend to teach Climate Change?**
Petra Breitenmoser, Zurich University of Teacher Education & University of Zurich, Switzerland; Manuela Keller-Schneider, Zurich University of Teacher Education, Switzerland

**Motivated but overconfident? Effects of feedback on teacher self-efficacy and self-assessments**
Helen Ernst, University of Freiburg, Germany; Anja Prinz, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany

**Research starting points of internship integrated practitioner research in initial teacher education**
Katharina Heissenberger, Pädagogische Hochschule Steiermark, Austria; Sabine Reisser, Pädagogische Hochschule Steiermark, Austria; Georg Krammer, University College of Teacher Education Styria, Austria; Marlies Matyschek-Jaук, Pädagogische Hochschule Steiermark, Austria

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 Session L: 13  |  Time: 09:00-10:00  |  Location: Session Room 16

**ICT DEMONSTRATION: DEVELOPING CLASSROOM MANAGEMENT STRATEGIES IN A VIRTUAL-REALITY KINDERGARTEN CLASSROOM**

**Developing Classroom Management Strategies in a Virtual-Reality Kindergarten Classroom**
Jolien Mouw, University of Groningen / GION, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Andrea Snipe, University of Groningen / GION, Netherlands
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<tr>
<th>Session L: 14</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 11</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: REAL-TIME CAPTURING OF EMOTIONAL AND BEHAVIORAL STUDENT ENGAGEMENT TRAJECTORIES DURING CLASS</strong></td>
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<tr>
<td>Real-time capturing of emotional and behavioral student engagement trajectories during class</td>
<td>Jorgos Papastefanou, Bodymonitor Institute for physiological emotion analyses, Germany</td>
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<th>Session L: 15</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 14</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: RECO: A SHINY APP FOR AUTOMATICALLY CODING SHORT TEXT RESPONSES IN ASSESSMENTS</strong></td>
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<tr>
<td>ReCo: A Shiny App for Automatically Coding Short Text Responses in Assessments</td>
<td>Fabian Zehner, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Nico Andersen, DIPF</td>
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<tr>
<th>Session L: 16</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 17</th>
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<tr>
<td><strong>ICT DEMONSTRATION: THE E-LEARNING SETTING CIRCLE: A DIGITAL TOOL GUIDING E-LEARNING PROJECTS AND RESEARCH</strong></td>
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<tr>
<td>The E-Learning Setting Circle: A Digital Tool Guiding E-Learning Projects and Research</td>
<td>Marco Rüth, University of Cologne, Germany; Kai Kaspar, University of Cologne, Germany</td>
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<tr>
<th>Session L: 17</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 15</th>
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<tbody>
<tr>
<td><strong>SPONSORED SESSION: MDPI - EDUCATION SCIENCES</strong></td>
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<tr>
<td>MDPI - Education Sciences</td>
<td>Nora McIntyre, In3endi Research Centre, United Kingdom</td>
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<th>Session L: 18</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 4</th>
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<tr>
<td><strong>INVITED SYMPOSIUM: SIG 14: DEVELOPING CONNECTIVITY BETWEEN EDUCATION AND WORK: PRINCIPLES AND PRACTICES</strong></td>
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<tr>
<td>Chair</td>
<td>Sya Zitter, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands</td>
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<tr>
<td>Organiser</td>
<td>Simon Beusaart, Maastricht University, Netherlands</td>
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<tr>
<td>Discussant</td>
<td>Eva Kyndt, University of Antwerp, Belgium</td>
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<tr>
<td>Teachers’ use of digital boundary objects to connect school and workplace-based learning</td>
<td>Nina Kilbrink, Karlstad University, Sweden; Aim-Britt Enochsson, Karlstad University, Sweden; Annelie Andersson, Karlstad University, Sweden; Annica Adelors, Karlstad University, Sweden</td>
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<tr>
<td>Collaborative Communication between Teachers and Company Supervisors for Integrative Teaching</td>
<td>Viviana Sappa, Swiss Federal Institute for Vocational Education and Training, Switzerland; Sanny Choy, Griffith University, Australia; Carmela Aprea, University of Mannheim, Germany</td>
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<tr>
<td>Pedagogic strategies at the boundary of school and work</td>
<td>Annes Khalid, UU University of Applied Sciences, Netherlands; Marco Macereouw, NHL Stenden University of Applied Sciences, Netherlands; Machteld Bouwman, Utrecht University of Applied Sciences, Netherlands</td>
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<tr>
<th>Keynotes II: 1</th>
<th>Time: 10:45-11:45</th>
<th>Location: Auditorium B</th>
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<tbody>
<tr>
<td><strong>EARLY KEYNOTE SESSION: LEARNERS’ RESOURCES AS MODERATORS FOR INSTRUCTIONAL DESIGN, SELF-REGULATION AND COGNITIVE LOAD</strong></td>
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<tr>
<td>Chair</td>
<td>Sanna Järvelä, University of Oulu, Finland</td>
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<tr>
<td>Learners’ resources as moderators for instructional design, self-regulation and cognitive load</td>
<td>Tina Seufert, Ulm University, Germany</td>
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<tr>
<td>Session M: 1</td>
<td>Time: 12:00-13:00</td>
<td>Location: Session Room 16</td>
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<tr>
<td><strong>SYMPOSIUM: MEASURING DEMOCRATIC CITIZENSHIP AT SCHOOL: ONE MEASURE FITS ALL?</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Anke Munnikisma, University of Amsterdam, Netherlands</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Anke Munnikisma, University of Amsterdam, Netherlands</td>
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<tr>
<td><strong>Measuring Citizenship Competences: An Assessment of Measurement Invariance</strong></td>
<td>Lianne Hoek, University of Amsterdam, Netherlands; Anke Munnikisma, University of Amsterdam, Netherlands; Anne Bert Dijkstra, University of Amsterdam, Netherlands</td>
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<tr>
<td><strong>Acceptance and Conflict Resolution: How Can Peer Relations Help to Measure Democratic Citizenship?</strong></td>
<td>Minke Krijnen, Utrecht University, Netherlands; Tim Mainhard, Utrecht University, Netherlands; Bjorn Wansink, Utrecht University, Netherlands; Jan van Tatenhuijzen, Utrecht University, Netherlands</td>
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<tr>
<td><strong>Prioritising Practice: What Classroom Practices Teach us about the School’s Role in Citizenship</strong></td>
<td>Margot Joris, KU LEUVEN, Belgium; Orhan Agirdag, KU Leuven / University of Amsterdam, Belgium; Maarten Simons, KU LEUVEN, Belgium</td>
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<th>Session M: 2</th>
<th>Time: 12:00-13:00</th>
<th>Location: Session Room 11</th>
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<tr>
<td><strong>SYMPOSIUM: MEASURING TEACHING QUALITY: WHAT MEASUREMENT MODEL SHOULD BE APPLIED?</strong></td>
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<tr>
<td><strong>Chairs</strong></td>
<td>Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Marcus Pietsch, Leuphana University Lueneburg, Germany</td>
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<tr>
<td><strong>Are student perceptions of teaching quality reliable measures for evaluating teaching quality?</strong></td>
<td>Hannah Bijlsma, University of Twente, Netherlands; Coes Glas, University of Twente, Netherlands; Adri Vischer, Univ. of Twente, Netherlands</td>
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<tr>
<td><strong>Measuring teaching quality domains: second-order factors or latent composite scores?</strong></td>
<td>Wolfgang Wagner, University of Tübingen, Germany; Richard Goelner, University of Tübingen, Germany; Ann-Kathrin Jaeckl, University of Tübingen, Germany; Norman Rose, Universitätsklinikum Jena, Germany</td>
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<td><strong>Teaching quality: a network of causally interacting quality aspects?</strong></td>
<td>Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland</td>
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<th>Time: 12:00-13:00</th>
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<tr>
<td><strong>SYMPOSIUM: HOW TO INTEGRATE RETRIEVAL PRACTICE INTO EXISTING EDUCATIONAL ACTIVITIES</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Julian Roelle, Ruhr University Bochum, Germany</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Julian Roelle, Ruhr University Bochum, Germany</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Andrew Butler, Washington University, United States</td>
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<tr>
<td><strong>Effects of Enriching Instructional Video Learning with Retrieval Practice Before or After Restudy</strong></td>
<td>Vincent Hoogerheide, Utrecht University, Netherlands; Twan van der Zanden, Utrecht University, Netherlands; Andreas Lachner, University of Tübingen, Germany; Gesa van den Broek, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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<tr>
<td><strong>Question Generation and Retrieval Practice – Sequencing Open and Closed Book Enhances Learning</strong></td>
<td>Timo Endres, University of Freiburg, Germany; Vincent Hoogerheide, Utrecht University, Netherlands; Valeska Guidi, University of Freiburg, Germany; Tamara Van Gog, Utrecht University, Netherlands; Alexander Renki, University of Freiburg, Germany</td>
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<td><strong>Generating Answers to Prequestions Supplements the Benefits of Retrieval Practice</strong></td>
<td>Shana Carpenter, Iowa State University, United States</td>
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<tr>
<td><strong>Retrieval Practice Before Generative Learning Exceeds Generative Learning Before Retrieval Practice</strong></td>
<td>Linda Froese, Ruhr University Bochum, Germany; Rebecca Krebs, Ruhr University Bochum, Germany; Jasmin Morino, Ruhr University Bochum, Germany; Niklas Obergassel, Ruhr University Bochum, Germany; Julia Waldeyer, Ruhr University Bochum, Germany</td>
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Session M: 4  Time: 12:00-13:00  Location: Session Room 6

**SYMPOSIUM: MULTIPLE PERSPECTIVES ON SEDUCTIVE DETAILS**

**Chairs**
Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Manuel Ninaux, University of Innsbruck, Austria

**Organisers**
Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Manuel Ninaux, University of Innsbruck, Austria

**Discussant**
Jan L. Plass, New York University, United States

Looking behind the scenes of seductive details: Combining Eye-Tracking and Thinking-Aloud
Babette Park, Leuphana University Lueneburg, Germany; Andreas Korbach, Saarland University, Germany; Lisa Stark, Saarland University, Germany; Roland Brunken, Saarland University, Germany

Using EEG and Eye-Tracking to study the seductiveness of decorative pictures
Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany

Seductive details in immersive virtual reality
Jocelyn Panong, University of Wisconsin - Madison, United States; Richard Mayer, University of California, Santa Barbara, United States

Using fMRI to investigate the emotional effects of seductive details in a game-based learning task
Manuel Ninaux, University of Innsbruck, Austria; Simon Grepl, Leibniz-Institut für Wissensmedien, Germany; Kristian Kili, Tampere University, Finland; Arto Lindstad, Tampere University of Technology, Finland; Johannes Blösche, Department of Psychology, University of Tübingen, Germany; Julia Bahmühler, Centre for Mathematical Cognition, Loughborough University, United Kingdom; Elise Klein, Université de Paris, France; France; Hans-Otto Kaniuth, Herie- institute for Clinical Brain Research, University of Tübingen, Germany; Korbman Moeller, Centre for Mathematical Cognition, Loughborough University, United Kingdom

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Session M: 5  Time: 12:00-13:00  Location: Session Room 9

**SYMPOSIUM: LOOKING FOR GROWTH: MODELING LEARNING PROGRESS DATA**

**Chair**
Boris Forthmann, University of Münster, Germany

**Organisers**
Natalie Foerster, University of Münster, Germany; Boris Forthmann, University of Münster, Germany; Elmar Souvignier, University of Muenster, Germany

**Discussant**
Denis Dumais, University of Denver, United States

Negligible booklet effects and graphical progress norms for CBM of arithmetic abilities
Christin Schwenk, TU Dortmund University, Germany; Sarah Chromik, TU Dortmund University, Germany; Philipp Doebler, TU Dortmund University, Germany; Tobias Kuhn, TU Dortmund University, Germany

Modeling a smooth learning trajectory and testing individual deviations from the global trajectory
Gesa Brunn, TU Dortmund University, Germany; Fritz Frese, Stiftung Tierärztliche Hochschule Hannover, Germany; Philipp Doebler, TU Dortmund University, Germany

Continuous Norming of Learning Progress Assessments in Reading
Natalie Foerster, University of Münster, Germany; Boris Forthmann, University of Münster, Germany; Elmar Souvignier, University of Muenster, Germany

Using learning progress assessment data to estimate learning capacity
Christoph Weber, University of Education Upper Austria, Austria; Christoph Helm, Johannes Kepler University Linz, Austria; David Kemethofer, Institute of Education and Psychology, Austria

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Session M: 6  Time: 12:00-13:00  Location: Session Room 10

**SYMPOSIUM: INTERDISCIPLINARY COLLABORATIONS TO IMPROVE EARLY LEARNING VIA EVIDENCE-BASED PRESCHOOL CURRICULA**

**Chair**
Eric Pakulak, Stockholm University, Sweden

**Discussant**
Courtney Stevens, Willamette University, United States

Interdisciplinary development of a two-generation preschool curriculum for at-risk children
Eric Pakulak, Stockholm University, Sweden

Interdisciplinary approaches to tailored intervention and risk assessment
Sebastian Lipina, CEMIC-CONICET, Argentina

Interdisciplinary Collaboration in the Agder Project
Ingurren Stenksen, University of Stavanger, Norway

DigiTaktik: A Digital Tool for Learning and Formative Feedback in the Context of Early Math
Susanne Kjälblad, Stockholm University, Sweden; Sofia Frankenberg, Stockholm University, Sweden; Agneta Guz, Lund University, Sweden; Magnus Haake, Lund University, Sweden; Eric Pakulak, Stockholm University, Sweden
### SYMPOSIUM: READING PROCESSES IN TASK-ORIENTED READING: RELEVANCE OF STRATEGIES AND READING PATTERNS

**Chair**
Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands

**Organiser**
Mariska Oikinger, Rotterdam University of Applied Sciences, Netherlands

**Discussant**
Ivar Bråten, University of Oslo, Norway

**Quantity and quality of elementary school students' strategy use in reciprocal reading groups**
Vanessa A. Völlinger, Justus-Liebig-Universität Giessen, Germany; Lisa-Kristin Münker, Justus-Liebig-University of Giessen, Germany

**Reading Strategies and Patterns during Task-Oriented Reading**
Jolique Keistra, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands; Ludo Verhoeven, Radboud University, Netherlands

**The effects of text availability and question type in task-oriented reading of multiple documents**
Raquel Cerdan, University of Valencia, Spain; Ignacio Manez, University of Valencia, Spain; Maria Angeles Serrano, University of Valencia, Spain

**Self-regulatory activities for task-oriented reading in higher education**
Mariska Oikinger, Rotterdam University of Applied Sciences, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands

### SYMPOSIUM: RECENT RESEARCH ON CLASSROOM DISTURBANCES

**Chair**
Boris Eckstein, University of Teacher Education St. Gallen, Switzerland

**Organiser**
Boris Eckstein, University of Teacher Education St. Gallen, Switzerland

**Discussant**
Reto Luder, Zurich University of Teacher Education, Switzerland

**Exploring teachers’ visual attention on classroom disturbances and student engagement**
Nina C. Jansen, Bergische Universität Wuppertal - Institut für Bildungsforschung, Germany; Jasmin Decristian, University of Wuppertal; IDoA-Research Center, Germany

**Classroom Disturbances from the Perspective of Teachers, Students, and External Observers**
Marion Scherzinger, PBBern, Switzerland; Alexander Wettstein, PBBern / University of Bern, Switzerland

**Conditions of Classroom Disturbances**
Boris Eckstein, University of Teacher Education St. Gallen, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Kurt Reusser, University of Zurich, Switzerland

### SYMPOSIUM: ANALYSING EDUCATIONAL DIALOGUES: INTEGRATIVE AND CRITICAL PERSPECTIVES

**Chair**
Fiona Maine, University of Cambridge, United Kingdom

**Organisers**
Michael Baker, CNRS - Telecom Paris, France; Baruch Schwarz, Hebrew University of Jerusalem, Israel

**Discussant**
Sten Ludvigsen, University of Oslo, Norway

**A critical perspective on coding methodologies for analysing teacher-student dialogue**
Sara Hanneysey, University of Cambridge, United Kingdom; Mania Viriki, University of Cyprus, Cyprus; Christine Howe, University of Cambridge, United Kingdom; Neil Mercer, University of Cambridge, United Kingdom

**Emotions in Collaborative Learning – Process-orientation and multimodalities in video-observation**
Pia Nåye, University of Jyväskylä, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

**Affective Dialoguing: Socio-Cognitivo-Emotional Natures of Collaboration in Educational Interactions**
Claire Pelo, ECP Laboratory, France; Kristine Lund, CNRS & École Normale Supérieure de Lyon, France

**Methodological challenges in analysing values in students’ interactions**
Gabriel Pallares, CNRS - I3 - Telecom ParisTech, France; Talli Cedar, The Hebrew University of Jerusalem, Israel; Michael Baker, CNRS - Telecom ParisTech, France; Françoise Deloigne, CNRS - Telecom ParisTech, France; Lucas Berti, Department of Psychology, NTNU, Norway; Baruch Schwarz, Hebrew University of Jerusalem, Israel
**Session M: 10** | Time: 12:00-13:00 | Location: Session Room 12
---
**SYMPOSIUM: THE CLASSROOM AS A STIMULATING CONTEXT FOR STUDENTS' COGNITIVE DEVELOPMENT**

**Chair**
Dieter Baeyens, KU Leuven, Belgium

**Discussant**
Petrà Warreyen, Ghent University, Belgium

The Role of Teacher-Child Interactions on Executive Function Development in Toddlerhood
Süleyem Kopulu, Utrecht University, Netherlands; Hanna Mulder, Utrecht University, Netherlands; Eva van de Weijer-Bergsma, Utrecht University, Netherlands; Elma Blom, University Utrecht, Netherlands

Teacher-child relationships and self-regulation: The role of closeness and autonomy support
Joana Cadima, University of Porto, Portugal; Carolina Guedes, University of Porto, Portugal; Tiago Ferreira, University of Porto, Portugal

Myth or truth – Does sitting close to the teacher support students’ learning and self-regulation?
Friederike Blume, DIPF | Leibniz Institute for Research and Information in Education, Germany; Ann Christine Ehlis, University of Tübingen, Germany; Annette Conzelmann, University of Tübingen, Germany; Caterina Gawrilow, University of Tübingen, Germany

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**Session M: 11** | Time: 12:00-13:00 | Location: Session Room 2
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**SYMPOSIUM: UNDERSTANDING AND PROMOTING STUDENTS' ORAL PARTICIPATION IN CLASS**

**Chair**
Susanne Jurkowski, Universität Erfurt, Germany

**Organiser**
Lukas Mundelsee, University of Erfurt, Germany

**Discussant**
Christine Pauli, University of Fribourg, Switzerland

Effects on collaboration on students’ hand raising
Lukas Mundelsee, University of Erfurt, Germany; Susanne Jurkowski, Universität Erfurt, Germany

Course characteristics enhancing students’ oral participation in higher education
Elisabeth Fischer, University of Kassel, Germany; Martin Haenze, University of Kassel, Germany

Motivational and cognitive correlates of student hand raising
Ricardo Böheim, University of Augsburg, Germany; Maximilian Knogler, Technical University of Munich (TUM), Germany; Tim Urdan, Santa Clara University, United States; Tina Seidel, Technische Universität München, Germany

Student oral participation and silent behavioral engagement
Klára Sedova, Masaryk University, Czech Republic; Martin Sedlacek, Masaryk University, Czech Republic

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**Session M: 12** | Time: 12:00-13:00 | Location: Session Room 14
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**SYMPOSIUM: USING VIGNETTES IN MATHEMATICS TEACHER EDUCATION AND RESEARCH: THE ROLE OF KNOWLEDGE AND BELIEFS**

**Chair**
Karen Skilling, University of Oxford, United Kingdom

**Organiser**
Marita Eva Friessen, University of Education Freiburg, Germany

**Discussant**
Orly Buchbinder, University of New Hampshire, United States

Vignettes as tools to enhance pre-service teachers’ noticing
Pedro Ivars, University of Alicante, Spain; Caneida Fernández, University of Alicante, Spain; Salvador Linares, University of Alicante, Spain

Using vignettes to provoke pre-service teachers’ beliefs about professional knowledge and practice
Karen Skilling, University of Oxford, United Kingdom

What role do different knowledge facets play when teachers analyse mathematics classroom situations?
Marita Eva Friessen, University of Education Freiburg, Germany; Sebastian Kuntze, Ludwigshburg University of Education, Germany
### SYMPOSIUM: EMOTIONAL AND MOTIVATIONAL PROCESSES AND THEIR ROLE FOR SELF-REGULATION OF LEARNING

**Chairs**  
Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Thea Peetsma, University of Amsterdam, Netherlands

**Organisers**  
Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Thea Peetsma, University of Amsterdam, Netherlands

**Discussant**  
Susan Beltman, Curtin University, Australia

**Interplay of affect and metacognitive regulation in collaborative science learning**  
Tuike Iskala, University of Turku, Finland; Tarja Pietarinen, University of Turku, Finland; Marja Vauras, University of Turku, Finland; Simone Volek, Murdoch University, Australia

**Understanding the process of self-determined learning motivation in vocational education**  
Mathias Mejch, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Self-regulated learning after stressful events: The role of resilience and future time perspective**  
Joost Jansen in de Wal, University of Amsterdam, Netherlands; Lucija Andre, University of Amsterdam, Netherlands; Jaap Schutema, University of Amsterdam, Netherlands; Thijmen Van Alphen, University of Amsterdam, Netherlands; Thea Peetsma, University of Amsterdam, Netherlands

**The relationship between eudaimonic and hedonic motives and self-regulated learning**  
Bernhard Schmitz, TU Darmstadt, Germany; Björn Mattes, Technical University of Darmstadt, Germany

### SYMPOSIUM: “IS THIS CREDIBLE INFORMATION?” INVESTIGATIONS ON THE EVALUATION OF SCIENTIFIC ONLINE INFORMATION

**Chair**  
Friederike Hendriks, IPN – Leibniz Institute for Science and Mathematics Education, Germany

**Organisers**  
Friederike Hendriks, IPN – Leibniz Institute for Science and Mathematics Education, Germany; Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany

**Discussant**  
Iris Tabak, Ben-Gurion University of the Negev, Israel

**Information easiness and prior beliefs influence evaluation of scientific online information**  
Lisa Scharrer, Ruhr-Universität Bochum, Germany; Rainer Bromme, University of Münster, Germany; Marc Stadler, University of Bochum, Germany

**“Mask wearing might be effective!” Does uncertainty communication affect source evaluation?**  
Inese Janssen, Westfälische Wilhelms-Universität Münster, Germany; Friederike Hendriks, IPN – Leibniz Institute for Science and Mathematics Education, Germany; Regina Jucks, WWU Münster, Germany

**Students’ Epistemic Criteria for Evaluating Climate Change YouTube Videos**  
Fayez Abed, University of Haifa, Faculty of Education, Israel; Santi Barzilai, University of Haifa, Israel

**“Liking” social media posts with credibility labels: The role of epistemic aims and criteria**  
Christiana Varda, Cyprus University of Technology, Cyprus; Eleni Kyza, Cyprus University of Technology, Cyprus

### SYMPOSIUM: DIFFERENT PERSPECTIVES IN UNDERSTANDING TEACHER AND STUDENT ADJUSTMENT AND WELL-BEING

**Chair**  
Eija Pakarinen, University of Jyväskylä, Finland

**Organiser**  
Eija Pakarinen, University of Jyväskylä, Finland

**Discussant**  
Lars-Erik Malmberg, University of Oxford, United Kingdom

**Teachers’ instructional support and students’ peer relationships quality**  
Sigrun K. Eresvåg, University of Stavanger, Norway; Trude Havik, University of Stavanger, Norway; Maren Stahl Leria, University of Stavanger, Norway; Grete Sørensen, University of Stavanger, Norway

**Teacher self-efficacy and perceived inadequacy across Grade 1**  
Ville Rokala, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Sirpa Eskelä-Haapanen, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland

**The role of teacher–child interactions for teacher adjustment: An intervention study**  
Karine Verschueren, KU Leuven, Belgium; Anne-Katrien Koenen, KU Leuven, Belgium; Sanne Van Craeyveldt, KU Leuven, Belgium; Caroline Vancraeyveldt, KU Leuven, Belgium; Hilde Colpin, KU Leuven, Belgium
# ESPRESSO INVITED SYMPOSIUM: E-CER: IN SEARCH OF THE 'GOOD' TEACHER: PERSPECTIVES ON TEACHER COMPETENCE

**Chair**
Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Organisers**
Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany; Robert Klassen, University of York, United Kingdom

**Discussant**
Tina Seidel, Technische Universität München, Germany

**Teachers' Psychological Characteristics: An Integrative Review**
Lisa Bardach, University of Tübingen, Germany; Robert Klassen, University of York, United Kingdom; Nancy Perry, University of British Columbia, Canada

**Teacher's early stress early stress predicts their later well-being: A 10 year longitudinal study**
Uta Klussmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Thamar Voss, University of Freiburg, Germany; Dirk Richter, University of Potsdam, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Changes in perceived teaching competences for types of beginning teachers, sources and implications**
Helen Watt, The University of Sydney, Australia; Paul Richardton, Monash University, Australia

**Standardized Mixed-Reality Simulation Tasks: A New Measurement Approach to Improving Teaching**
Courtney Bell, University of Wisconsin, United States; Geoffrey C. Phelps, Educational Testing Service, United States; Barbara Wener, Educational Testing Service, United States; Daniel McCaffrey, Educational Testing Service, United States; Margaret M. Witterspoon, Educational Testing Service, United States

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# INVITED SYMPOSIUM: SIG 24: DEVELOPING RESEARCH AND ACADEMIC CAREERS IN UNCERTAIN TIMES

**Chair**
Montserrat Castelló, Ramon Llull University, Spain

**Organiser**
Erika Lööstrem, University of Helsinki, Finland

**Discussant**
Kirsi Pyhältö, University of Helsinki, Finland

**The impact of the COVID-19 pandemic on researcher activity and development**
Inge Van der weijden, Leiden University, Netherlands;Montserrat Castelló, Ramon Llull University, Spain; Agata Lambrechts, University of York, United Kingdom; Irina Laktina, University of Central Lancashire Cyprus, Cyprus; Erika Lööstrem, University of Helsinki, Finland; Michelle McGinn, Brock University, Canada; Isabelle Skalvri, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

**Remote doctoral supervision experiences: challenges and affordances**
Erika Lööstrem, University of Helsinki, Finland; Søren Bergsgaard, Aarhus University, Denmark; Solveig Comér, University of Helsinki, Finland; Faye He, Peking University, China; Kelsey Inouye, Oxford University, United Kingdom; Shosh Leshem, Kibbutzim College of Education, Israel, Israel; Irina Laktina, University of Central Lancashire Cyprus, Cyprus; Michelle McGinn, Brock University, Canada; Matilda Sasa, Berne State University, Nigeria; Gina Wisker, University of Bath, United Kingdom

**(How) can the research on two-mode virtual communication help us refine our online collaboration?**
Montserrat Castelló, Ramon Llull University, Spain; Citra Amelia, Deakin University, Indonesia; Josephine Bergmans, Leiden University, Netherlands; Laura Colombo, University of Buenos Aires, Argentina; Kelsey Inouye, University of Oxford, United Kingdom; Marian Jazvac-Martek, McGill University, Canada; Irina Laktina, University of Central Lancashire Cyprus, Cyprus; Erika Lööstrem, University of Helsinki, Finland; Lynn McAlpine, McGill University, Canada; Anna Sala-Bubani, Ramon Llull University, Spain; Anu Tammeleht, Tallinn University, Estonia

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# SYMPOSIUM: STUDENT PERCEPTIONS OF TEACHING QUALITY PUT TO THE TEST

**Chair**
Hannah Bijstma, University of Twente, Netherlands

**Discussant**
Anna-Katharina Prætorius, Institut für Erziehungswissenschaft, Switzerland

**Effects of student composition on teaching quality: Implications for the validity of student ratings**
Benjamin Caspar Fauth, University of Tübingen, Germany; Cansu Atlay, LEAD Graduate School & Research Network, Germany; Hanna Dumont, DIPF | Leibniz Institute for Research and Information in Education, Germany; Jasmin Direcstian, University of Wuerttemberg; IDA Research Center, Germany

**Exploring Student Perceptions of Differentiated Instruction**
Marieke van Geel, University of Twente, Netherlands; Trynek Keuning, University of Twente, Netherlands

**A comparison of the teaching quality perspectives of school inspectors, students, and teachers**
Adrie Vischer, Univ. of Twente, Netherlands; Hannah Bijstma, University of Twente, Netherlands
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<td>Mutual relationships between the levels of and changes in interest and self-efficacy during a task</td>
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<tr>
<td>Katarina Nuutila, University of Helsinki, Finland</td>
<td>Markku Niemivirta, University of Eastern Finland, Finland; Katarina Nuutila, University of Helsinki, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Turku, Finland; Gyöngyver Molnar, University of Szeged, Hungary</td>
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<td><strong>Organiser</strong></td>
<td>On-task expectancy, value, and achievement emotions: A combination of two Expectancy-Value-Models</td>
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<td>Luke K. Fryer, The University of Hong Kong, Hong Kong</td>
<td>Belinda Berweger, Friedrich-Schiller-University Jena, Germany; Sebastian Born, University Hospital Jena, Center for Seepsis Control and Care, Germany; Julia Dietrich, Friedrich-Schiller-University Jena, Germany</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>The course interest that tasks built</td>
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<td>K. Ann Renninger, Swarthmore College, United States</td>
<td>Luke K. Fryer, The University of Hong Kong, Hong Kong; Alex Shum, The University of Hong Kong, Hong Kong; Evan Pickett, The University of Hong Kong, Hong Kong; George Alexon, The University of Hong Kong, Hong Kong; Timothy Wooterspoon, The University of Hong Kong, Hong Kong</td>
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<td><strong>Repeat Visitors: A Situation Designed to Examine the Earliest Phases of Interest Development</strong></td>
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<td>Amanda Durk, Northern Illinois University, United States; Sarah Post, Cornerstones of Science, United States; Audra P. Jensen, Northern Illinois University, United States; Joy Pawinskoiko, Northern Illinois Universit, United States; Cody Gibson, Northern Illinois University, United States; Paul B. Dusenberg, Space Science Institute, United States</td>
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<th>Time: 15:45-16:45</th>
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<td>Predicting learning disabilities status: The role of early domain-general and domain-specific skills</td>
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<tr>
<td>Christin Schwenk, TU Dortmund University, Germany</td>
<td>Cristina Rodriguez, Universidad de La Laguna (1) Universidad Católica de la Santísima Concepción (2), Chile; Roberto Ferreira, Pontificia Universidad Católica de Chile, Chile</td>
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<td><strong>Discussant</strong></td>
<td>Insight into the relationship between specific and comorbid learning difficulties – a meta-analysis</td>
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<td>Bert De SMeedt, KU Leuven, Belgium</td>
<td>Nutti Viesel-Nordmeyer, Technische Universität Dortmund, Germany; Julia Reuber, Zentrum für systemische Schulberatung (school psychology) Hamm, Germany; Jörg Tobias Kuhn, TU Dortmund University, Germany; Kristina Moll, University Hospital, Ludwig Maximilians-University Munich, Germany; Heinz Holling, University of Muenster, Germany; Christian Dobel, University Hospital Jena, Germany</td>
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<td><strong>Comorbidity overlaps between ADHD and Specific Learning Disorders</strong></td>
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<td>Irene C. Mammarella, University of Padova, Italy; Giulia Crisci, University of Padova, Italy; Ramona Cardillo, University of Padova, Italy; Sara Cavioi, University of Padova, Italy</td>
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<td><strong>Effects of tablet-based math and reading interventions in children with comorbid learning disorders</strong></td>
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<tr>
<td>Christin Schwenk, TU Dortmund University, Germany; Heike Mehathase, University Hospital, Ludwig Maximilians-University Munich, Germany; Ann-Katrin Schulz, TU Dortmund University, Germany; Teresa Mann, TU Dortmund University, Germany; Jörg-Tobias Kuhn, TU Dortmund University, Germany; Kristina Moll, University Hospital, Ludwig Maximilian-University Munich, Germany; Gerd Schulte Köme, University Hospital, Ludwig-Maximilian-University Munich, Germany</td>
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<td><strong>Session N: 4</strong></td>
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<td><strong>SYMPOSIUM: INSIGHTS INTO THE PRECURSORS OF RELATIONAL REASONING</strong></td>
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<td><strong>Chair</strong></td>
<td>Fostering multiplicative reasoning in early math education: A case study</td>
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<tr>
<td>Ellen VanLuyk, KU Leuven - University of Leuven, Belgium</td>
<td>Xenia Varnavoussi, University of Ioanna, Greece; Georgia Pitta, University of Ioanna, Greece; Maria Kaldrimidou, x, Greece</td>
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<td><strong>Organiser</strong></td>
<td>Early quantitative reasoning: The association between patterning and proportional reasoning</td>
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<td>Ellen VanLuyk, KU Leuven - University of Leuven, Belgium; Nore Wijns, KU Leuven, Belgium; Joke Torbeys, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Wim Van Dooren, KU LEUVEN, Belgium</td>
<td>Ellen VanLuyk, KU Leuven - University of Leuven, Belgium; Nore Wijns, KU Leuven, Belgium; Wim Van Dooren, KU LEUVEN, Belgium; Patrick Onghena, KU LEUVEN, Belgium</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>We can count on curricular math for probability, but what else might be helpful?</td>
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<td>Matthew Ingles, Loughborough University, United Kingdom</td>
<td>Anne-Sophie Supply, KU LEUVEN, Belgium; Nore Wijns, KU Leuven, Belgium; Wim Van Dooren, KU LEUVEN, Belgium; Patrick Onghena, KU LEUVEN, Belgium</td>
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<td><strong>Guiding students’ attention towards multiplicative relations around them: A classroom intervention</strong></td>
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<td>Staku Määttä, University of Turku, Finland; Minna M. Hannula-Sormunen, University of Turku, Finland; Hilma Haima, University of Turku, Finland; Jake Muñoz, University of Turku, Finland</td>
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SYMPOSIUM: IMPROVING STUDY SUCCESS IN HIGHER EDUCATION BY SELF-ASSESSMENTS FOR INFORMED STUDY DECISIONS

Chair
Laurie Delnoij, Open University, Netherlands
Organisers
Laurie Delnoij, Open University, Netherlands; Pascale Stephanie Petri, Justus-Liebig-Universität Giessen, Germany; Sofie Van Cauwenberghge, Ghent University, Belgium
Discussant
Edith Braun, Justus-Liebig-Universität Giessen, Germany

Prediction of Study Success Based on Cognitive and Non-cognitive Skills towards Higher Education
Sofie Van Cauwenberghge, Ghent University, Belgium; Elisabeth Roels, Ghent University, Belgium

Designing an Online Self-Assessment for Informed Study Decisions in Higher Online Education
Laure Delnoij, Open University, Netherlands; Josia Jannesen, Open University of the Netherlands, Netherlands; Kim Dirkx, Open University, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands

Does It Suit You? A Self-assessment Approach to Support Prospective Students' Study Choice
Pascale Stephanie Petri, Justus-Liebig-Universität Giessen, Germany; Vera Wengert, Justus-Liebig-Universität Giessen, Germany; Martin Kersting, Justus-Liebig-Universität Giessen, Germany

SYMPOSIUM: STUDENTS’ COGNITIVE AND NON-COGNITIVE LEARNING GAINS: THE ROLE OF TEACHING AND TEACHER COMPETENCIES

Chair
Alexander Naumann, DIPF | Leibniz Institute for Research and Information in Education, Germany
Organisers
Alexander Naumann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Dimitra Kolovou, University of Teacher Education St.Gallen, Switzerland
Discussant
Anneke Timmermans, University of Groningen, Netherlands

Are some schools less unjust than others?
Luisa Grötzschmacher, University of Vienna, Germany; Svenja Vieluf, German Institute for International Educational Research (DIPF); Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany

Ratings of Expert Classroom Observers, Teachers, and Students: Consistency and Predictive Validity
Charalampos Charalambous, University of Cyprus, Cyprus; Sergios Sergiou, Department of Education, University of Cyprus, Cyprus

Relation of Teachers’ Judgment Accuracy to Students’ Achievement Gains in Mathematics and German
Dimitra Kolovou, University of Teacher Education St.Gallen, Switzerland; Alexander Naumann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland

Sensitivity of Non-Cognitive Outcome Measures to Effects of Teaching
Alexander Naumann, DIPF | Leibniz Institute for Research and Information in Education, Germany; Burkhard Gniewosz, University of Salzburg, Austria; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany

SYMPOSIUM: YOUNG CHILDREN’S PATTERNING COMPETENCIES IN RELATION TO CHILD AND CONTEXTUAL FACTORS

Chair
Nore Wijns, KU Leuven, Belgium
Discussant
Camilla Bjorklund, University of Gothenburg, Sweden

Ecuadorian 4-5-year-olds patterning competencies and their association with mathematical abilities
Gina Bojorque, Universidad de Cuenca, Ecuador; Neil Gonzales, Universidad de Cuenca, Ecuador; Nore Wijns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium

Associations between patterning and numerical ability in 4- to 6-year olds
Nore Wijns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium

Patterning during free play – different materials prompt different mathematical structures
Miriam Lüken, Bielefeld University, Germany

Development of a repeating patterning test from a bimodal perspective
Viktor Werner, Universität Hamburg, Germany; Hannel-Faulhaber Barbara, Universität Hamburg, Germany
### SYMPOSIUM: WHAT COUNTS? PICTURE BOOK CHARACTERISTICS IN THE DOMAIN OF EARLY MATHEMATICS

**Chair**
Colleen Uscianowski, University of Cincinnati, United States

**Organisers**
Joke Torbeyns, KU Leuven, Belgium; Colleen Uscianowski, University of Cincinnati, United States

**Discussant**
Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland

#### An opportunity for math learning: A feature analysis of math language in popular children’s books
Colleen Uscianowski, University of Cincinnati, United States

#### Young children’s mathematical picture books: content and structural features
Suzanne Slijper, Katholieke Universiteit Leuven, Belgium; Emke Op ‘t Eynde, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium

#### Teachers’ awareness of the learning-supportive characteristics of picture books in early mathematics
Ilida Elia, University of Cyprus, Cyprus; Van den Heuvel-Panhuizen Van den Heuvel-Panhuizen, Utrecht University, Netherlands & Nord University, Norway; Dag Maasdam, Nord University, Norway; Eleni Deligianni, Cyprus Ministry of Education, Culture, Sports and Youth, Cyprus; Cathrine Björknes, Nord University, Norway

#### The role of mathematical content-related interaction in shared picture book reading
Hanna Palmér, Linnaeus University, Sweden; Camilla Björklund, University of Gothenburg, Sweden

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### SYMPOSIUM: TEACHERS’ AND TEACHER EDUCATORS’ EVIDENCE-INFORMED PRACTICE: TAKEAWAYS FOR TEACHER EDUCATION

**Chair**
Christina Wekerle, University of Augsburg, Germany

**Organiser**
Christina Wekerle, University of Augsburg, Germany

**Discussant**
Christof Wecker, Universität Hildesheim, Germany

#### Why initial teacher training is only part of the solution... (CANCELLED)
Julie Nelson, National Foundation for Educational Research (NFER), United Kingdom; Matthew Walker, National Foundation for Educational Research (NFER), United Kingdom

#### Teacher educators as central agents in an evidence-based practice agenda: A latent profile analysis
Amika Diory, Technical University of Munich (TUM), Germany; Maximilian Knegler, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

#### From research evidence to teaching action: Teacher educators’ views of evidence-informed practice
Despoina Georgiou, Utrecht University, Netherlands; Sog Yee Mok, University of Zurich, Switzerland; Cui Ping, Eindhoven University of Technology, Netherlands; Tina Seidel, Technische Universität München, Germany

#### Contrasting pre-, in-service teachers’ and educational researchers’ evidence-informed reasoning
Christina Wekerle, University of Augsburg, Germany; Katharina Klamar, Universität Augsburg, Germany; Kai Wagner, Saarland University, Germany; Kai Trenkmann, University of Wuppertal, Germany; Martin Greisot, University of Augsburg, Germany; Theresa Wilkes, Saarland University, Germany; Robin Stark, Saarland University, Germany; Ingo Kollar, University of Augsburg, Germany

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### SYMPOSIUM: STUDENTS’ VALUES OF TOLERANCE AND CITIZENSHIP – RESULTS FROM ICCS 2016

**Chair**
Johanna Fee Ziemies, University of Duisburg-Essen, Germany

**Organiser**
Johanna Fee Ziemies, University of Duisburg-Essen, Germany

**Discussant**
Kathrin Hahn-Laudenberg, University of Wuppertal, Germany

#### Citizenship Norms Among Native and Immigrant Students From A European Perspective
Maria Magdalena Isac, KU LEUVEN, Belgium; Ellen Claes, KU Leuven, Belgium; Andres Sandoval-Hernandez, University of Bath, United Kingdom

#### Citizenship Norms and Tolerance in European Adolescents
Andres Sandoval-Hernandez, University of Bath, United Kingdom; Ellen Claes, KU Leuven, Belgium; Nicola Savvides, University of Bath, United Kingdom; Maria Magdalena Isac, KU LEUVEN, Belgium

#### Which aspects of schooling are suitable to foster tolerance among adolescents?
Johanna Fee Ziemies, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany
### Session N: 11
**Time:** 15:45-16:45  
**Location:** Session Room 6

**SYMPOSIUM: PROBLEM SOLVING - EFFECTS OF CHILDREN'S INTERINDIVIDUAL COMPETENCES AND PEDAGOGICAL APPROACHES**

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<tr>
<td>Chair</td>
<td>Anke Maria Weber, University of Koblenz-Landau, Germany</td>
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<tr>
<td>Organiser</td>
<td>Anke Maria Weber, University of Koblenz-Landau, Germany</td>
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<tr>
<td>Discussant</td>
<td>Samuel Greiff, University of Luxembourg, Luxembourg</td>
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|              | Verbal processes and mental effort in bilingual and monolingual children's planning performance  
|              | Susanne Enke, University of Leipzig, Germany; Catherine Gunzenhauser, University of Freiburg, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Henrik Saalbach, University of Leipzig, Germany |
|              | Preschool Construction Play as a Means to Enhance Problem Solving and Self-Regulation Capabilities  
|              | Ornit Spakor-Levy, Bar-Ilan University, Israel; Taly Shechter, Bar-Ilan University, Israel |
|              | Examining 5- to 7-year-old children’s testing and optimizing with a gear engineering task  
|              | Timo Reuter, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz - Landau, Germany |
|              | The Association of Offline and Online Inquiry Skills with Conceptual and Procedural Knowledge  
|              | Joep van der Graaf, Radboud University Nijmegen, Netherlands                          |

### Session N: 12
**Time:** 15:45-16:45  
**Location:** Session Room 5

**SYMPOSIUM: EFFECTIVENESS OF TEACHING: DOES TASK-DESIGN MATTER?**

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<td>Leonie Jacob, University of Tübingen, Germany</td>
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<tr>
<td>Organisers</td>
<td>Leonie Jacob, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany</td>
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<tr>
<td>Discussant</td>
<td>Logan Fiorella, University of Georgia, United States</td>
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|              | Learning-by-Teaching: Testing the Social-Presence Hypothesis by Manipulating Audience Size  
|              | Vincent Hoogerheide, Utrecht University, Netherlands; Andreas Ladner, University of Tübingen, Germany; Leonie Jacob, University of Tübingen, Germany; Inga Glogger-Frey, University of Freiburg/Department of Psychology, Germany; Tamara Van Gog, Utrecht University, Netherlands; Alexander Renkl, University of Freiburg, Germany |
|              | Does Inducing Social Presence Enhance the Effectiveness of Teaching in Written Form?  
|              | Leonie Jacob, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany |
|              | Modality Transfer: Instructional Implications for e-Learning by Teaching – A Field Study  
|              | Tobias Mannhart, University of Regensburg, Germany; Silke Schworm, University of Regensburg, Germany |
|              | Teaching on video as an instructional strategy to prepare open-minded citizenship lessons  
|              | Suzan van Brussel, Avans University of Applied Sciences, Netherlands; Miranda Timmermans, Avans university of applied sciences, Netherlands; Peter Verkooijen, Erasmus University Rotterdam, the Netherlands, Netherlands; Fred Paas, Department of Psychology and Education and Child Studies, Netherlands |

### Session N: 13
**Time:** 15:45-16:45  
**Location:** Session Room 14

**SYMPOSIUM: INTEGRATING EVIDENCE TO ADDRESS CONFLICTING CLAIMS: CHALLENGES AND INSTRUCTIONAL APPROACHES**

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<td>Clark Chinn, Rutgers University, United States</td>
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<tr>
<td>Discussant</td>
<td>Helge Strømsæ, University of Oslo, Norway</td>
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|              | Linking disciplinary knowledge and epistemic dimensions in student evidentiary reasoning with CADE  
|              | Aila Samarapungavan, Purdue University, United States; Karl Classe, Purdue University, United States; Nancy Palaez, Purdue University, United States; Stephanie Gardner, Purdue University, United States |
|              | Integrating evidence when some evidence is cherry picked: Challenges for undergraduates  
|              | Toshio Mochizuki, Sendai University, Japan; Clark Chinn, Rutgers University, United States; Etsuji Yamaguchi, Kobe University, Japan |
|              | Integrating Multiple Scientific Documents Using Document Maps  
|              | Danna Tal-Saviv, University of Haifa, Israel; Sant Barzilai, University of Haifa, Israel; Fayez Abed, University of Haifa, Faculty of Education, Israel; Shirir Mor-Hagari, University of Haifa, Faculty of Education, Israel |
WEDNESDAY, 25 AUGUST 2021

Session N: 14
Time: 15:45-16:45
Location: Session Room 9

SYMPOSIUM: RELATIONS BETWEEN CHILD-CARE QUALITY AND TODDLER’S COGNITIVE, SELF-REGULATORY AND SOCIAL OUTCOMES.

Chairs
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany

Organisers
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany

Discussant
Pamela Sammons, University of Oxford, United Kingdom

Relationship between CLASS-Toddler and children’s self-regulation in Finland and Portugal
Jenni Salminen, University of Jyväskylä, Finland; Carolina Guades, Faculty of Psychology and Educational Sciences, University of Porto, Portugal; Joana Cadima, Faculty of Psychology and Educational Sciences, University of Porto, Portugal; Eija Pakarinen, University of Jyväskylä, Finland; Maria-Kristina Lennkanen, University of Jyväskylä, Finland

Can web-mediated trainings improve teacher-child interactions and toddler’s socio-emotional skills?
Sonja Perren, University of Konstanz, Germany; Yvonne Reyhing, Pädagogische Hochschule Thurgau, Switzerland

Relations between quality of teacher-child interaction and toddler’s mathematical outcomes.
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany; Dorothea Domhuel, University of Bamberg, Germany; Nadine Bossot, Otto-Friedrich-University Bamberg, Germany; Franka Baron, German Youth Institute, Germany; Johanna Klemm, Otto-Friedrich-University Bamberg, Germany; Hans Guenther Rossbach, University of Bamberg, Germany; Sabine Weinert, University of Bamberg, Germany

Relations between child-care quality and toddler’s math, literacy, and socio-emotional skills
Gerlinde Grosse, Early Childhood Education Research, Germany; Romy Schorff, University of Potsdam, Germany; Stefanie Barth, University of Potsdam, Germany; Antonia Simon, University of Potsdam, Germany; Alexander Soemer, University of Potsdam, Germany

Session N: 15
Time: 15:45-16:45
Location: Session Room 4

SYMPOSIUM: DIGITAL PERSONALIZED LEARNING: CONCEPTUALIZATION, OPERATIONALIZATION AND IMPACT

Chair
Rani Van Schoor, KU LEUVEN, Belgium

Organiser
Rani Van Schoor, KU LEUVEN, Belgium

Discussant
Natalia Kucirkova, University of Stavanger, Norway

State of the art of research on digital personalized learning: a systematic review
Rani Van Schoor, KU LEUVEN, Belgium; Jan Ellen, KU Leuven, Belgium; Anneline Raes, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium

Multimodal deep learning model for operationalization regulation in collaborative learning
Andy Nguyen, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Yaneen Wang, Carnegie Mellon University, United States; Carolyn Rose, Carnegie Mellon University, United States; Jorina Malmberg, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland

The effect of adaptivity in digital technologies: modeling learning efficiency using game data
Stefanie Vanbecelaere, KU Leuven, Belgium; Dries Debeer, KU LEUVEN, Belgium; Wim Van Den Noortgate, KU LEUVEN, Belgium; Bert Reynvoet, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium

Session N: 16
Time: 15:45-16:45
Location: Session Room 15

INVITED SYMPOSIUM: EFG: NEW SOLUTIONS FOR EDUCATIONAL EYE-TRACKING RESEARCH

Chairs
Markku Hannula, University of Helsinki, Finland; Nora McIntyre, Insead Research Centre, United Kingdom; Maiko Schindler, Universität zu Köln University of Cologne, Germany

Organisers
Svea Haataja, University of Helsinki, Finland; Hataoka Maria Jarodzka, Open University of the Netherlands, Netherlands

Discussant
Hans Gruber, University of Regensburg, Germany

The potential benefits of AI for supporting eye tracking in mathematics education and beyond
Maiko Schindler, Universität zu Köln University of Cologne, Germany; Achim Lillenthal, Örebro university, Sweden

Clustering targets of visual attention in a classroom: Combining spatial and temporal dimensions
Markku Hannula, University of Helsinki, Finland; Mikko Toivanen, SeeTrue technologies, Finland

Multimodal joint attention to mathematical objects through a dual eye-tracking lens
Markku Hannula, University of Helsinki, Finland; Anna Shvarts, Utrecht University, Netherlands; Andrey Stepanov, National Research University Higher School of Economics, Russian Federation

WEDNESDAY, 25 AUGUST 2021
### ESPRESSO PAPER: STUDENT LEARNING AND SELF-REGULATION

**Chair**
Gudrun Ziegler, Luxembourg multi-LEARN Institute, France

The unrecognised potential of potential-based achievement goals  
Dirk Tempelaar, Maastricht University, Netherlands

Metacognitively aware students exhibit higher creativity and motivation to learn  
Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Marek Urban, Jan Evangelista Purkyně University, Czech Republic; Ondřa Pasout, J. E. Purkyně University, Czech Republic; Jifi Kombra, J. E. Purkyně University, Czech Republic

Daily fluctuations in motivation – A longitudinal diary study over an entire semester at university  
Henrik Bellhäuser, Johannes Gutenberg University Mainz, Germany; Björn Mattes, Technical University of Darmstadt, Germany; Patrick Liborius, Universität Liechtenstein, Liechtenstein

Effects of strategy support on self-regulated use of retrieval practice in higher education  
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; Anita Heijtjes, Avans University of Applied Sciences, Netherlands

To ask or to answer? The effects of answering self-generated questions on expository text retention  
Felicitas Biwer, Maastricht University, Netherlands; Wisnu Wiradhan, Bina University, Institute for Psychology, Indonesia; Mirjam oude Egbrink, Maastricht University, Netherlands; Antine de Bruijn, Maastricht University, Netherlands

Triggering goal orientation influences the testing effect  
Tino Endres, University of Freiburg, Germany; Alexander Eitel, University of Giessen, Germany; Alexander Renkl, University of Freiburg, Germany

### ESPRESSO PAPER: EDUCATIONAL EFFECTIVENESS AND IMPROVEMENT

**Chair**
Seog Yee Mok, University of Zurich, Switzerland

The importance of school improvement capacities for improvement processes based on inspection data  
Tanja Rettinger, Johannes Gutenberg University Mainz, Germany

Pandemic as a driving force for improvement? An analyses of predictors and perceived effects  
Katharina Maag-Merki, University of Zurich, Switzerland; Tobias Fohlhoff, Johannes Gutenberg University of Mainz, Germany; Tanja Rettinger, Johannes Gutenberg University Mainz, Germany; Francesca Suter, University of Zurich, Switzerland

Children’s digital experience: Understanding children’s perspectives and agency  
Janniche Elisabeth Broch Wilhelmsen, Oslo Metropolitan university, Norway

Contextual embeddedness of school leadership strategies during the COVID-19 Pandemic  
Stefan Brauckmann-Sajkewicz, Alpen-Adria-University, Institute of instructional and school development, Austria; Georg Krammer, University College of Teacher Education Styria, Austria

Student Autonomy and Support during transition: Co-creation of transition to Practice Curriculum  
Shreene Suliman, Hamad Medical Corporation, Qatar; Karen Könings, Maastricht University, Netherlands; Margaret Allen, Hamad Medical Corporation, Qatar; Ayad Al-Moslih, Qatar University, Qatar; Alison Carr, Qatar University, Qatar; Richard Koopmans, University Hospital Maastricht, Netherlands

Dealing with challenges in times of disruptions – resilient types of schools  
Nina Jede, University Heidelberg, Germany; Katharina Kriegbaum, Heidelberg University, Germany
### ESPRESSO PAPER: WRITING AND TEACHING APPROACHES

**Chair**
Inmaculada Martínez-García, University of Cadiz, Spain

**WRITING TALK: TEACHERS’ MANAGEMENT OF DIALOGIC METATALK ABOUT WRITING**
Debra Myhill, University of Exeter, United Kingdom

The influence of thinking dispositions on synthesis writing: A randomized control trial
Christian Tarchi, University of Florence, Italy; Ruth Villaxen, University of Cantabria, Spain

The effects of a genre-based interconnected reading and writing instruction
Moniek Vis, Rijksuniversiteit Groningen, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands; Kees de Groot, University of Groningen, Netherlands; Jacqueline van Kuijningen, NHL Stenden University of Applied Sciences / Open University, Netherlands

**EXPLORING TEACHERS’ ORCHESTRATION OF METATALK ABOUT WRITTEN TEXT**
Ruth Newman, University of Exeter, United Kingdom

Implementation and review of students’ writing strategy awareness in storytelling
Christina Knott, University Regensburg, Germany; Anita Schlichter, University of Regensburg, Germany; Johannes Wild, Universität Regensburg, Germany

Primary school teacher students’ self-assessed competence development: baseline of first semesters
Julia Klug, PH Salzburg, Austria; Andrea Magnus, PH Salzburg, Austria

### ESPRESSO PAPER: ASSESSMENT METHODS AND TOOLS

**Chair**
Moritz Börner-Ringleb, Leibniz University Hannover, Germany

**To Play or not to Play: Assessment of Early Mathematical Competencies via Linear Number Board Games**
Johanna Skille, Catholic University Eichstätt-Ingolstadt, Germany; Katja Seitz-Stein, Catholic University Eichstätt-Ingolstadt, Germany

**Disentangling self-assessment: Self-assessor profiles in Secondary Education**
Leire Pinedo, Universidad de Deusto, Spain; Javier Fernández, Universidad Autónoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain

**Disentangling self-assessment: Self-assessor profiles in Higher Education**
Leire Pinedo, Universidad de Deusto, Spain; Javier Fernández, Universidad Autónoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain

**Developing a measure on bachelor students’ experiences of peer ja self-assessment**
Vivi Virtanen, Häme University of Applied Sciences, Finland; Hanna Askainen, University of Helsinki, Finland; Ljisa Myrry, University of Helsinki, Finland; Lauri Partanen, Aalto University, Finland

**Children as Consumers: Extended Competence Modelling with Process Data from a Virtual Supermarket**
Philine Drake, German Institute for International Educational Research (DIPF), Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany; Gunnar Mau, DFGS Deutsche Hochschule für Gesundheit & Sport, Germany; Manuel Froitzheim, Center for Economic Education, University of Siegen, Germany; Hanna Schramm-Klein, Faculty of Business Administration, University of Siegen, Germany; Michael Schwieren, Center for Economic Education, University of Siegen, Germany; Theresa Menekes, Faculty of Business Administration, University of Siegen, Germany

**Middle school students’ understanding of assignments in a self-directed learning environment**
Gertraud Benke, Klagenfurt University, Austria; Samantha Clay, University College of Teacher Education, Carinthia, Austria
Session O: 5  |  Time: 17:30-18:30  |  Location: Session Room 4

**ESPRESSO PAPER: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION**

**Chair**
Mayra Mascareño Lara, University of Groningen, Netherlands

If you tell me, I will help you – Family climate and parental support for adolescents’ internet use
Ricarda Kurock, University of Paderborn, Germany; Nicole Gruchel, Universität Paderborn, Germany; Sabrina Bonanati, Paderborn University, Germany; Heike M. Bühl, Paderborn University, Germany

Home Learning Environment, parental support and different types of students’ internet use
Nicole Gruchel, Universität Paderborn, Germany; Ricarda Kurock, University of Paderborn, Germany; Sabrina Bonanati, Paderborn University, Germany; Heike M. Bühl, Paderborn University, Germany

Cognitive training in kindergarten and insights into cognitive activities at home
Efsun Annac, Ludwig Maximilian University of Munich, Germany; Frank Nikl, Department of Psychology, Ludwig Maximilian University of Munich, Germany

Effects of the family ecosystem on lives of the digital generation: Four European case studies
Olaf Kapella, University of Vienna, Austrian Institute for Family Studies, Austria; Merike Sisask, Tallinn University, Estonia; Maria Roth, Babes-Bolyai University, Romania; Tove Lafton, Oslo Metropolitan University, Norway

Remote assessment of cognitive functions in children: a systematic review
Chiara Pecini, University of Florence, Italy; Costanza Ruffini, University of Florence, Italy; Gabriella Giuliano, University of Florence, Italy; Monica Morini, University of Florence, Italy

Analysis of students’ interactions during playing and modifying half-baked rhetorical games
Evrykleia Paragnostou, National & Kapodistrian University of Athens, Greece; Chronis Kynigos, National & Kapodistrian University of Athens, Greece

Session O: 6  |  Time: 17:30-18:30  |  Location: Session Room 6

**ESPRESSO PAPER: TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**
Nicola Reimann, Durham University, United Kingdom

Peer observation as a teacher professional development mechanism: Participant teachers’ perception
Ester Miquel, Autonomous University of Barcelona, Spain; David Duran Giabet, Universitat Autònoma de Barcelona, Spain; Mònica Corcèlles, Universitat Ramon Llull, Spain; Jesus Ribosa, Universitat Autònoma de Barcelona, Spain

Using videos to promote reflective practice on higher education teaching: a cross-national study
Anna Serbati, University of Padova, Italy; Fulvio Biddau, University of Padova, Italy; Fiona Daiziel, University of Padova, Italy; Alessio Suran, Università degli Studi di Padova, Italy

Scaffolding collaborative reflection: the role of facilitators
Nicola Reimann, Durham University, United Kingdom; Taha Rajab, Durham University, United Kingdom; Titi Dragas, University of Durham, United Kingdom; Julie Rattray, University of Durham, United Kingdom; Malcolm Murray, Durham University, United Kingdom

Intercultural Reflecting Teams in higher education: a closer look at challenges in teaching
Carmen Heckmann, Goethe University Frankfurt, Germany; Sabine Fabrizo, Goethe-Universität Frankfurt, Germany; Miriam Hansen, Goethe-Universität Frankfurt, Germany; Julia Mendzhentiskaya, Goethe-Universität Frankfurt, Germany

Identification of professional development needs of a group of teachers for attaining school goals
Dace Narsone, University of Latvia, Latvia; Liga Čakāne, University of Latvia, Latvia; Anete Butkēvica, University of Latvia, Latvia

University Teachers’ Professional Development: A Scoping Review
Marilou Bélie, Université de Sherbrooke, Canada; Valérie Jean, Université de Sherbrooke, Canada; Sawsen Laikal, Université de Sherbrooke, Canada; Tanya Chichekan, Université de Sherbrooke, Canada; Nicolas Fernandez, Université de Montréal, Canada; Patrick Lavio, Université de Montréal, Canada; Kathleen Lechasseur, Université Laval, Canada; Louise Boyer, Université de Montréal, Canada
WEDNESDAY, 25 AUGUST 2021

Session O: 7  |  Time: 17:30-18:30  |  Location: Session Room 3

ESPRESSO PAPER: TEACHER EDUCATION

Chair
Jule Krüger, Universität Duisburg-Essen, Germany

Using the FA-cycle to Explore Teachers’ Formative Assessment Activities
Liebeth Baartman, Utrecht University of Applied Sciences, Netherlands; Judith Guikens, Wageningen University, Netherlands; Machiel Bouwmans, Utrecht University of Applied Sciences, Netherlands

The prominence of loss - physical aspects of teaching online during the Covid-19 pandemic
Eva Wennäs Brante, Malmö University, Sweden; Anna-Lena Godhe, Malmö University, Sweden

Facilitating Peer Feedback with Video Annotation in Teacher Education
Ilka Nagel, Östfold University College / University of Oslo, Norway; Irina Engeness, Östfold University College, Norway

Using Visual Thinking Strategies for stimulating intercultural sensitivity in pre-service teachers
Marjolijn Deunk, University of Groningen, Netherlands; Harke Korpershoek, University of Groningen, Netherlands; Mariëtte Hingsman, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands; Annegien Langeloo, Alfa College, Netherlands

Contrasting two brief online interventions to write better argumentative synthesis at university
Ruth Viladom, University of Cantabria, Spain; Maria Luna, Universidad a Distancia de Madrid (UDIMA), Spain; Isabel Martínez-Alvaraz, Madrid Open University (UDIMA), Spain; Mar Matese, Universidad Autónoma de Madrid, Spain

Key elements of critical digital literacies from the perspective of school education
Mimra Lakula, University of Helsinki, Finland; Lisa Komáki, University of Helsinki, Finland; Veera Kallunki, University of Helsinki, Finland; Anastasia Gouseli, University of Hull, United Kingdom; Darren Mundy, University of Hull, United Kingdom; Juliana Raffaghello, Universitat Oberta de Cataluny, Spain; Marc Romero, Universitat Oberta de Catalunya, Spain; Teresa Romeu, Universitat Oberta de Catalunya, Spain; Maria Ranieri, University of Florence, Italy; Isabella Bruni, University of Florence, Italy; Alice Rolf, University of Florence, Italy

Session O: 8  |  Time: 17:30-18:30  |  Location: Session Room 16

ESPRESSO PAPER: TEACHER PROFESSIONAL DEVELOPMENT

Chair
Emer Ring, Mary Immaculate College, Limerick, Ireland

New teachers’ professional development needs in response to emergency remote teaching in Scotland
Rachel Shank, University of Aberdeen, United Kingdom; Mark Carver, University of Strathclyde, United Kingdom

Building blocks for higher education teachers’ professional development aimed at innovation with IT
Marlies ter Beek, University of Twente, Netherlands; Kim Schildkamp, University of Twente, Netherlands; Dorien Hopster-den Otter, University of Twente, Netherlands; Dana Uerz, HAN University of Applied Sciences (UAS), Netherlands; Anne Horvers, Radboud University Nijmegen, Netherlands

An integral approach towards professional development aimed at educational innovation with IT
Marlies ter Beek, University of Twente, Netherlands; Marieke van Geel, University of Twente, Netherlands; Dorien Hopster-den Otter, University of Twente, Netherlands

‘SustainableFood’, a school-NGO collaboration towards more sustainable food consumption
Ole Smordal, Department of Education, Norway; Margret Sævarsdottir, Department of Education, University of Oslo, Norway; Mant Hovland, Department of Education, University of Oslo, Norway

Residual impacts of professional development: A cross case analysis
Karen Kooliener, Arizona State University, United States; Nanette Seago, WestEd, United States; Nicora Placa, Hunter College, City University of New York, United States

Personal and professional contribution of SEL continuing education program to preschool teachers
Yael Kesner Baruch, Beit Berl College, Klar Saba, & Levinisky College of Education, Tel Aviv, Israel, Israel
### ESPRESSO PAPER: ETHNOGRAPHY

**Chair**  
Julia Morina, University of Bern, Switzerland

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<td>Kristina Kumpulainen, University of Helsinki, Finland; Heidi Sairanen, University of Helsinki, Finland</td>
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<td><strong>Digital Civic Participation Youth Cultures in Estonia, Greece and the UK</strong></td>
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### ESPRESSO PAPER: METHODS IN LEARNING RESEARCH

**Chair**  
Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

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<td><strong>Predictors of Practicing with an Adaptive Arithmetic Learning Program</strong></td>
<td>Anna Hilz, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karin Guille, Leibniz Institute for Science and Mathematics Education, Germany; Janina Roloff-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany</td>
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<td><strong>The role of social relatedness for drop-out intention in first semester STEM students</strong></td>
<td>Julia Eberle, Ruhr-Universität Bochum, Germany; Nicole Krämer, University of Duisburg Essen, Germany; Niko Rummel, Ruhr University Bochum, Germany</td>
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<td>Dorthe Herbrechter, Heidelberg University, Germany; Xenia Kuhn, German Institute for Adult Education, Germany</td>
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**Chair**
Leonie Jacob, University of Tübingen, Germany

**Capturing motivation and affect using multimodal data: Toward theory-driven learning analytics**
Elizabeth Cloud, University of Central Florida, United States; Florence Gabriel, University of South Australia, Australia; Roger Azevedo, University of Central Florida, United States

**Studying emotional contagion in collaborative learning: Challenges and opportunities for LA research**
Muhterem Dindar, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Sara Ahola, University of Oulu, Finland; Xiaohua Huang, University of Oulu, Finland; Guoying Zhao, University of Oulu, Finland

**What can enactment of control during learning tell about students’ motivation?**
Inge Molenaar, Radboud University Nijmegen, Netherlands; Anne Horvers, Radboud University Nijmegen, Netherlands; Rick Dijkstra, Radboud University Nijmegen, Netherlands

**How Emotional Dispositions Influence the Online Learning Behaviour**
Dirk Renthaler, University of Mannheim, Germany; Muhittin Sahin, University of Mannheim, Germany; Clara Schumacher, Humboldt-University Berlin, Germany

**Student engagement across academic paths: using LA as a support for study planning and monitoring**
Anni Silvola, University of Oulu, Finland; Amanda Sjöblom, Aalto University, Finland; Sami-Santeri Svensk, Tampere University, Finland; Jiri Latimo, Aalto University, Finland; Pia Nayuki, University of Jyväskylä, Finland; Hanni Muukkonen, University of Oulu, Finland

**Examining moderators of effects of dashboard feedback on learner motivation and performance**
Anja Hawitschek, Otto-von-Guericke-Universität Magdeburg, Germany; Galina Rudolf, TU Bergakademie Freiberg, Germany; Sebastian Zug, TU Bergakademie Freiberg, Germany

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### ESPRESSO PAPER: LEARNING TECHNOLOGIES

**Chair**
Mathias Mejeh, University of Bern, Switzerland

**University Students’ Ecologies of Digital Resources. A mixed methods study**
Dan Uhara, University of Oslo, Faculty of Education, Norway; Crina Damsa, University of Oslo, Norway; Lisa Toft Henriksen, University of Oslo, Norway

**Effects of Gamified Feedback in Adaptive Retrieval Practice on Learning and Motivation**
Gesa van den Broek, Utrecht University, Netherlands; Maarten van der Velde, University of Groningen, Netherlands; Stefanie Scholten, Utrecht University, Netherlands; Bente van Thuijl, Utrecht University, Netherlands; Hedde van Rijn, University of Groningen, Netherlands; Liesbeth Koster, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Different Levels of Guidance in Hands-on and Virtual Science Laboratories – What Works Best When?**
Hasan Ozgur Kapco, Yıldız Technical University, Turkey; Hakan Akyüz, Yıldız Technical University, Turkey; Hakki Cakır, Yıldız Technical University, Turkey

**How Virtual and Physical Manipulatives Affect Preschoolers’ Understanding of Balancing a Scale**
Yvoni Pavlou, University of Cyprus, Cyprus; Marios Papaevripidou, University of Cyprus, Cyprus; Zacharias Zacharia, University of Cyprus, Cyprus

**20 Years of Combining Physical and Virtual Experiments in Science Education: a Systematic Review**
Salome Wimmer, Leibniz-Institut für Wissensmedien (IWM) Tübingen, Germany; Jochen Kuhn, TU Kaiserslautern, Physics Education Research Group, Germany; Katharina Scheler, Leibniz-Institut für Wissensmedien, Germany

**Promoting Scientific Practices and Collective Knowledge Advances through Idea-Friend Maps**
Xueqi Feng, The University of Hong Kong, China; Carol Chan, The University of Hong Kong, Hong Kong; Jan van Aalst, University of Hong Kong, Hong Kong
### ESPRESSO PAPER: PRIMARY EDUCATION

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<th>Arthur Graesser, University of Memphis, United States</th>
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<td><strong>Cognitive skills, task-interest and self-beliefs in children with dysfluency in reading and math</strong> Jenni Putkonen, University of Jyväskylä, Finland; Mikko Aro, University of Jyväskylä, Finland; Kenneth Elilund, University of Jyväskylä, Finland; George Georgiou, University of Alberta, Canada; Rikkika Heikkilä, University of Jyväskylä, Finland; Tuire Kaponen, University of Jyväskylä, Finland; Jonna Salminen, City of Jyväskylä, Finland; Victor van Daal, Edge Hill University, United Kingdom</td>
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<td><strong>Is children’s social networking site usage linked to academic achievement?</strong> Athanasia Kokou, University of Cambridge, UK, United Kingdom; Rupert Wegerif, University of Cambridge, United Kingdom</td>
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<td><strong>Exploring how co-located microblogging can support young students’ collaborative reasoning</strong> Anja Amundrud, University of Oslo, Norway; Ingvill Rasmussen, University of Oslo, Norway; Ole Smandal, Department of Education, Norway</td>
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<td><strong>How are pupils’ self-regulated learning profiles and tablet computer use for learning related?</strong> Laura Hirsto, University of Eastern Finland, Finland</td>
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### ESPRESSO SYMPOSIUM: GROWTH MINDSET AND EFFECTIVE SCHOOLING IN DIFFERENT CONTEXTS

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<th>Maria Tuls, University of Salzburg, Austria</th>
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<td>Maria Tuls, University of Salzburg, Austria</td>
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<td>Discussants</td>
<td>Pia Kreijks, University of Cambridge, United Kingdom; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands</td>
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<td><strong>Adaptive orientations towards failure and growth mindset in effective schools in difficult contexts</strong> Maria Tuls, University of Salzburg, Austria; Dominik Harmsch, University of Salzburg, Austria; Roland Bernhard, University of Salzburg, Austria</td>
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<td><strong>Students’ growth mindset: Relation to teacher beliefs, teaching practices, and school climate</strong> Justin Yu, University of Helsinki, Finland; Pia Kreijks, University of Cambridge, United Kingdom; Katarina Salmela-Aro, Helsinki University, Finland</td>
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<td><strong>Well-intentioned but dysfunctional: Teachers’ feedback to students with a migrant background</strong> Helene Zeeb, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany</td>
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<td><strong>“Doing” mindsets in classrooms: A coding scheme for teacher-student mindset-related verbalizations</strong> Naomi de Ruiter, University of Groningen, Netherlands</td>
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### ESPRESSO SYMPOSIUM: USING STUDENT FEEDBACK FOR TEACHING DEVELOPMENT AND TEACHER PROFESSIONALIZATION IN SCHOOLS

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<th>Chairs</th>
<th>Sebastian Röhl, University of Tubingen, Germany; Wolfram Rollett, University of Education Freiburg, Germany</th>
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<tr>
<td>Organisers</td>
<td>Sebastian Röhl, University of Tubingen, Germany; Wolfram Rollett, University of Education Freiburg, Germany</td>
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<tr>
<td>Discussant</td>
<td>Adrie Visscher, Univ. of Twente, Netherlands</td>
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<td><strong>Effects of student feedback on teaching quality in schools – a meta-analysis</strong> Sebastian Röhl, University of Tubingen, Germany</td>
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<td><strong>Does smartphone-assisted student feedback affect teaching quality?</strong> Hannah Bijlsma, University of Twente, Netherlands; Adrie Visscher, Univ. of Twente, Netherlands</td>
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<td></td>
<td><strong>Pre-service teachers’ attitudes towards student feedback and reflection in Germany and Switzerland</strong> Corinne Wyss, FHWW School of Education, Switzerland; Kerstin Göbel, University of Duisburg-Essen, Germany; Katharina Neuber, University of Duisburg-Essen, Germany; Meike Raaffaib, Pädagogische Hochschule Zürich, Switzerland</td>
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</table>
### Session O: 16 | Time: 17:30-18:30 | Location: Session Room 9

**ESPRESSO SYMPOSIUM: EMPOWERMENT OF TEACHERS FOR TECHNOLOGY-ENHANCED TEACHING: BOUNDARY CONDITIONS AND STRATEGIES**

**Chair**
Jürgen Schneider, University of Tübingen, Germany

**Organisers**
Iris Backisch, University of Tübingen, Germany; Armin Fabian, University of Tübingen, Germany

**Discussant**
Jo Tondeur, Vrije Universiteit Brussel, Belgium

**TPACK and Contextual Knowledge: Unpacking that mysterious outer circle**
Eliana Brianza, University of Zurich, Institute of Education, Switzerland; Mirjam Schmid, University of Zurich, Switzerland; Dominik Pietko, University of Zurich, Switzerland

**Another jangle fallacy? Validity of Technological Pedagogical Content Knowledge self-reports**
Jürgen Schneider, University of Tübingen, Germany; Iris Backisch, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany; Ronny Schener, University of Oslo, Norway

**What pre-service teachers gain from a teacher training course? TPACK perspective**
Teemu Valtonen, University of Eastern Finland, Finland; Mikki Eriksson, University of Eastern Finland, Finland; Sirpa Kari Törnä, University of Eastern Finland, Finland; Ville Tathamainen, University of Eastern Finland, Finland; Erikko Sointu, University of Eastern Finland, Finland

**Fostering Technology Integration of Pre-Service Teachers: A Quasi-experimental field study**
Armin Fabian, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany; Ulrike Franke, University of Tübingen, Germany; Judith Press, University of Tübingen, Germany

### Session O: 17 | Time: 17:30-18:30 | Location: Session Room 10

**ESPRESSO SYMPOSIUM: UNDERSTANDING AND FOSTERING EARLY METACOGNITION AND SRL: EFFECTS OF EXERCISES, BELIEFS AND FEEDBACK**

**Chair**
Mariette van Loon, University of Bern, Switzerland

**Discussant**
Nancy Perry, University of British Columbia, Canada

**Effects of monitoring exercises, feedback, incentives and modeling on students' calibration**
Engin Ader, Boğaziçi University, Turkey; Kubra Ture, Bogazici University, Turkey

**My brain needs a break: Children’s willpower theories are related to behavioral self-regulation**
Miriam Compagnoni, University of Zurich, Switzerland; Vanda Sieber, University of Zurich, Switzerland; Veronika Job, Technische Universität Dresden, Germany

**Young learners’ use of increased autonomy and personalized visualizations to regulate learning**
Anne Horvors, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Rick Dijkstra, Radboud University, Netherlands

**Relations between monitoring accuracy, SRL, and performance for fourth and sixth graders**
Mariette van Loon, University of Bern, Switzerland; Namh Ooi, University of Bern, Switzerland

### Session O: 18 | Time: 17:30-18:30 | Location: Session Room 15

**INVITED SYMPOSIUM: SIG 22: GENES, BRAIN, AND SOCIAL CONTEXTS: THEIR INTERACTIONS AND IMPLICATIONS FOR EDUCATION**

**Chair**
Stephan Vogel, University of Graz, Austria

**Discussant**
Jessica Massonnè, University College London - Institute of Education, United Kingdom

**Brain-based markers and socioeconomic status relate to expressive vocabulary development**
Chiara Canton, IRCCS Eugenio Medea, Italy

**Relations of parent-child number-related interactions to brain measures of number processing**
O. Ece Demir-Lira, University of Iowa, United States

**Investigating the genetic architecture of noncognitive skills using GWAS-by-subtraction**
Petline Demange, Vrije Universiteit Amsterdam, Netherlands

**SES and genetic markers of educational attainment both influence neurocognitive development**
Nicholas Judd, Karolinska Institute, Sweden
### Session P: 1 | Time: 18:45-19:45 | Location: Session Room 18

**SINGLE PAPER: ARGUMENTATION AND TEACHER PROFESSIONAL DEVELOPMENT**

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<th>Chair</th>
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<tr>
<td>Altec Kohler, HEP-BEJUNE, Switzerland</td>
<td>The role of teacher professionalism in changing dialogic and argumentative practices&lt;br&gt;Christiania Karoussou, University of Nicosia, Cyprus; Maria Evagorou, University of Nicosia, Cyprus; Maria Vrikli, University of Cyprus, Cyprus</td>
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<td>Teacher’s argumentative lesson plan in two professional development programs: a qualitative study&lt;br&gt;Gabriel Fortes, Universidad Alberto Hurtado, Chile; Marisol Gómez, Universidad Alberto Hurtado, Chile; Joaquín Grez, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile</td>
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<td>An investigation of teacher professional learning that resulted in significant shifts in practice&lt;br&gt;Matthew Wilsey, Stanford University, United States; Coralie Delhaye, Stanford University, United States; Jonathan Osborne, Stanford University, United States; Hilda Borko, Stanford University, United States; Emily Reigh, Stanford University, United States</td>
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### Session P: 2 | Time: 18:45-19:45 | Location: Session Room 5

**SINGLE PAPER: SOCIAL INTERACTION IN INFORMAL, LIFELONG AND COLLABORATIVE LEARNING**

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<th>Chair</th>
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<tr>
<td>Karsten Wutschka, Center for Research on Education and School Development, TU Dortmund University, Germany</td>
<td>Gaining insight into one’s own and experts’ knowledge by explaining: an experimental study&lt;br&gt;Nina Vaupotic, University of Münster, Germany; Dorothie Kienhues, University of Münster, Germany; Regina Jucks, WWU Münster, Germany</td>
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<td>Facts don’t speak for themselves: Discussing evidence about Covid-19 in three Reddit communities&lt;br&gt;Mark Felton, San Jose State University, United States; Ellen Middaugh, San Jose State University, United States; Henry Fan, San Jose State University, United States</td>
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<td>Teachers’ collaborative argumentation when reasoning the selection of online educational information&lt;br&gt;Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany</td>
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### Session P: 3 | Time: 18:45-19:45 | Location: Session Room 10

**SINGLE PAPER: MATHEMATICS AND SECONDARY EDUCATION**

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<tr>
<td>Anna Serbati, University of Padova, Italy</td>
<td>NNB in understanding the concept of variable - the role of integrity and the phenomenal sign bias&lt;br&gt;Konstantinos Christou, University of Western Macedonia, Greece; Despoina-Ioanna Kyrvei, University of Western Macedonia, Greece</td>
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<td>Long-term effects of biased distributions of rational number tasks in mathematics textbooks&lt;br&gt;Parvan Babari, Pädagogische Hochschule Schwyzer, Switzerland; Andrea Cantieri, Schwyzer University of Teacher Education (Pädagogische Hochschule Schwyzer), Switzerland; Lennart Schalk, PH Schwyzer, Switzerland</td>
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<td>Computer-based PS-I: Adaptive fitting of own and foreign errors during focused error processing&lt;br&gt;Antje Booggaard, University of Education Freiburg, Germany; Katharina Lobl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany</td>
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### Session P: 4 | Time: 18:45-19:45 | Location: Session Room 3

**SINGLE PAPER: E-LEARNING AND ONLINE LEARNING**

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<tr>
<td>Suzanne Splinter, Katholieke Universiteit Leuven, Belgium</td>
<td>Exploring factors for experts’ response rate on an educational Community Question-Answering platform&lt;br&gt;Harry Stokhof, HAN University of Applied Sciences, Netherlands; Kalliope Meli, University of Patras, Greece; Konstantinos Lavdas, University of Patras, Greece</td>
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<td>Between acculturation and self-determination: a study at the Ecole Hôtelière de Lausanne&lt;br&gt;Charlotte de Boer, Université de Genève, Switzerland; Nathalie DELOBBE, University of Geneva, Switzerland; Sébastien Fernandez, Ecole Hôtelière de Lausanne, Switzerland</td>
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<td>Language Teachers’ Instructional Use of Technology in the COVID-19 Era&lt;br&gt;Wai Ming Cheung, The University of Hong Kong, Hong Kong; Fai Mei WONG, Baptist Lui Ming Choi Primary School, Hong Kong, Hong Kong; Serena Chan, The University of Hong Kong, Hong Kong</td>
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### SINGLE PAPER: WRITING AND LITERACY IN PRIMARY AND SECONDARY EDUCATION

**Chair**
Martijn Moorer, Vrije Universiteit Amsterdam, Netherlands

- **An intervention study of writing in Technical Education at lower secondary school**
  Johan van Driel, University of Amsterdam, Netherlands

- **Handwriting and keyboarding effects on K-6 students writing and reading outcomes: A meta-analysis**
  Anabela Malhique, Murdoch University, Australia; Debora Valcar, Murdoch University, Australia; Deborah Pino-Pasternak, University of Canberra, Australia; Susan Ledger, Murdoch University, Australia; Margaret Merga, Edith Cowan University, Australia

- **Secondary school students’ cognitive processes while writing-from-sources in history and philosophy**
  Lieke Holdinda, University of Amsterdam, Netherlands; Tanja Janssen, Universiteit van Amsterdam, Netherlands; Gert Rijkaarslom, University of Amsterdam, Netherlands

### SINGLE PAPER: COGNITIVE DEVELOPMENT

**Chair**
Emily Grossnickle Peterson, American University, United States

- **Music Professional Training Fosters Inhibitory Oculomotor Control: Longitudinal eye tracking study**
  Krzysztof Krejtz, SWPS University of Social Sciences and Humanities, Poland; Agata Radziwiecz, SWPS University of Social Sciences and Humanities, Poland; Andrew Duchowski, School of Computing, Clemson University, United States; Izabela Krejtz, SWPS University of Social Sciences and Humanities, Poland

- **Visual expertise in ECG interpretation: an eye-tracking augmented re situ interview approach**
  William Wu, Queen's University, Canada; Andrew Hall, Queen's University, Canada; Heather Braund, Queen's University, Canada; Colm Bell, Queen's University, Canada; Adam Szulewski, Queen's University, Canada

- **Acute physical activity and cognition. An intraindividual study of primary school children.**
  Lars-Erik Malmberg, University of Oxford, United Kingdom; Christina Heemskerk, University of Bern, Switzerland; Henry Lo, University of Surrey, United Kingdom; Patrick Esser, Oxford Brookes University, United Kingdom; Helen Dawes, Oxford Brookes University, United Kingdom; Stefan Kozhabashev, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

### SINGLE PAPER: TEACHING APPROACHES

**Chair**
Theresa Wilkes, Saarland University, Germany

- **Teacher questions and student responses in case-based learning: A video study in medical education**
  Martin Gartmeier, Technical University of Munich (TUM), Germany; Alexander Hapfelmeier, Technical University of Munich (TUM), Germany; Marc Gruenewald, Technical University Munich, Germany; Janina Hüsler, Technische Universität München (TUM), Germany; Theresa Pflutscheller, Technical University of Munich (TUM), Germany; Tina Seidl, Technische Universität München, Germany; Pascal Berberat, Technische Universität München (TUM), Germany

- **Teachers’ Interests & Instructional practices in Action in Education for Sustainable Development**
  Eleni Sinakou, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; Peter Van Petegem, University of Antwerp, Belgium

- **Fading solution steps and revealing the solution when modelling skills**
  Katharina Engelmann, Universität Hildesheim, Germany; Corinna Behrendt, Universität Hildesheim, Germany; Christof Wecker, Universität Hildesheim, Germany
### Session P: 8
**Time:** 18:45-19:45  
**Location:** Session Room 8

**SINGLE PAPER: ASSESSMENT AND EVALUATION**

| Chair | Student-Teacher Relationship Drawings and Student Characteristics: A Cross-Cultural Comparison  
Mengdi Chen, University of Amsterdam, Netherlands; Marjolein Zee, University of Amsterdam, Netherlands; Debora Roorda, University of Amsterdam, Netherlands  
Students' self-beliefs in mathematics and the learning environment - TIMSS 2019 insights  
Jelena Radosic, University of Oslo, Norway; Hege Kaarstein, Department of Teacher Education and School Research, University of Oslo, Norway  
Identification of gifted and talented children through nomination practices: a systematic review  
Francesco Marsili, University of Perugia - Italy; Italy; Marta Pellegrini, University of Florence, Italy |

### Session P: 9
**Time:** 18:45-19:45  
**Location:** Session Room 12

**SINGLE PAPER: COMPUTER-ASSISTED AND MULTIMEDIA LEARNING**

| Chair | Learning Robotics in Virtual Reality: Impact of Sequencing and Prompting on Learning Outcome  
Andrea Vogt, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Franziska Babei, Ulm University, Institute of Psychology and Education, Department Human Factors, Germany; Philipp Hock, Ulm University, Institute of Psychology and Education, Department Human Factors, Germany; Martin Baumann, Ulm University, Institute of Psychology and Education, Department Human Factors, Germany; Tina Sauert, Ulm University, Germany  
Learning with augmented reality - integrating virtual instructional elements into the physical world  
Jule Krüger, Universität Duisburg-Essen, Germany; Vera Vohwinkel, Universität Duisburg-Essen, Germany; Daniel Bodemer, Universität Duisburg-Essen, Germany  
Supportive Elements for Coherence Formation Increase Code Comprehension  
Andrea Vogt, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Thomas Witte, Ulm University, Institute of Software Engineering and Programming Languages, Germany; Matthias Tichy, Ulm University, Institute of Software Engineering and Programming Languages, Germany; Tina Sauert, Ulm University, Germany |

### Session P: 10
**Time:** 18:45-19:45  
**Location:** Session Room 4

**SINGLE PAPER: VOCATIONAL EDUCATION**

| Chair | Factors influencing VET teachers' intention to use technology in the COVID-19 era  
Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Martina Rausso, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Francesca Amendini, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland  
Fostering Apprentices Observation Through Annotations and Descriptions  
Alessia Eletta Coppi, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland; Jean-Luc Gurtner, University of Fribourg, Switzerland  
Feasibility and Acceptability of ‘Sit-to-Stand’ Desks in the VET Setting, A Qualitative Study  
Mara Kirschnher, Open University of the Netherlands, Netherlands |

### Session P: 11
**Time:** 18:45-19:45  
**Location:** Session Room 2

**SINGLE PAPER: ARGUMENTATION, DIALOGUE AND REASONING**

| Chair | Fostering primary students’ competence of data-based argumentation – An intervention study  
Jens Krummenauer, Ludwigshafen University of Education, Germany; Sebastian Kuntze, Ludwigshafen University of Education, Germany  
Deliberative Teaching for Sustainable Citizenship: An Emerging Field?  
Antonia Larrain, Universidad Alberto Hurtado, Chile; María Teresa Rojas, Universidad Alberto Hurtado, Chile; Gabriel Fortes, Universidad Alberto Hurtado, Chile  
Interdisciplinary Dialogic Education and the Challenge of Disciplinary Egocentrism  
Lihi Telem, Technion - Israel Institute of Technology, Israel; Einat Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel |
### SINGLE PAPER: ARTIFICIAL INTELLIGENCE IN CONVERSATION AND DISCOURSE ANALYSIS

**Chair**  
Sonia Ile, University of Cambridge, United Kingdom

**Automatically Measuring Features of Teacher Discourse from Classroom Audio in English Language Arts**  
Sidney D’Mello, University of Colorado Boulder, United States; Emily Jensen, University of Colorado Boulder, United States; Meghan Elizabeth Dale, University of Pittsburgh, United States; Patrick Donnelly, Oregon State University Cascades, United States; Amanda Godley, University of Pittsburgh, United States; Sean Patrick Kelly, University of Pittsburgh, United States

**Automatic classification of semantic content of classroom dialogue in core subjects**  
Yu Song, South China Normal University, China; Shunwei Lee, South China Normal University, China; Tianyong Hao, South China Normal University, China

**ClassiSight: Automating Analysis of Classroom Dialogue to Support Teacher Noticing and Reflection**  
Saranya Venkataraman, The Pennsylvania State University, United States; Prazenji Mitra, Penn State College of Information Sciences and Technology, United States; Sherice Clarke, University of California, San Diego, United States; Andrea Gomolka, University of California, San Diego, United States; Zayab Gates, University of California, San Diego, United States; Sushil S, University of California, San Diego, United States; Tarang Tripathi, University of California, San Diego, United States; Amy Ogan, Carnegie Mellon University, United States

### WORKSHOP: THE VALUE OF LINGUISTIC ANALYSIS FOR EDUCATIONAL RESEARCH

**The Value of Linguistic Analysis for Educational Research**  
Yula Muchnik-Rozanov, Technion - Israel Institute of Technology, Achva Academic College, Israel; Dina Tsylbutsky, Technion - Israel Institute of Technology, Israel

### WORKSHOP: GRASPING BOUNDARY CROSSING COMPETENCE DEVELOPMENT: HOW TO MEASURE LEARNING ACROSS PRACTICES?

**Grasping Boundary Crossing Competence Development: How to Measure Learning Across Practices?**  
Carla Onck, Wageningen University, Netherlands; Judith Guilkens, Wageningen University, Netherlands; Karen Fontijn, Wageningen University, Netherlands; Perry den Brok, Wageningen University, Netherlands; Cassandra Tho, Wageningen University, Netherlands; Nynke Post-Uiterweer, Wageningen University, Netherlands; Arnold Bregt, Wageningen University, Netherlands

### COLLABORATIVE WORKSPACE: CURRENT DEBATES IN PSYCHOMETRICS AND APPLIED STATISTICS: IMPLICATIONS FOR EDUCATIONAL RESEARCH

**Current Debates in Psychometrics and Applied Statistics: Implications for Educational Research**  
Peter Edelbrunner, ETH Zurich, Switzerland; Christian Thuem, ETH Zurich, Switzerland

### ROUNDTABLE: LIFELONG AND WORKPLACE LEARNING

**Chair**  
Ingvar Rasmussen, University of Oslo, Norway

**Mentor’s perspectives on long-term internships at school: An exploratory study**  
Carina Caruso, University of Paderborn, Germany; Michael Goller, University of Paderborn, Germany

**Practical experience and its influence on self-assessed competences of teacher students**  
Carina Caruso, University of Paderborn, Germany; Michael Goller, University of Paderborn, Germany

**Transitioning away from tertiary education: Adolescents embracing and resisting future scripting**  
Alexandroes Janse, Universiteit Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Thea van Lankveld, Utrecht University, Netherlands
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<th>Chair</th>
<th>Laura Hirto, University of Eastern Finland, Finland</th>
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<tr>
<td>Organiser</td>
<td>Martin Ubani, University of Eastern Finland, Finland</td>
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<td>Discussant</td>
<td>Alexander Unser, TU Dortmund University, Germany</td>
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|               | **Religions and worldviews: 21st century education for citizenship.**  
|               | Rob Freathy, University of Exeter, United Kingdom |
|               | **University students growing up to be experts – supporting students citizenship skills?**  
|               | Sanna Väisänen, University of Eastern Finland, Finland; Laura Hirto, University of Eastern Finland, Finland |
|               | **Research-based development of RE teacher education in light of 21st century skills**  
|               | Martin Ubani, University of Eastern Finland, Finland; Arto Kallionemi, University of Helsinki, Finland; Kaisa Vinikka, University of Eastern Finland, Finland; Tuuli Lipiäinen, University of Helsinki, Finland |
## Session Q: 1
### Time: 09:00-10:00
### Location: Session Room 18
### SINGLE PAPER: SPECIAL EDUCATION

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<tr>
<th>Chair</th>
<th>Title</th>
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<tr>
<td>Helene Zeeb, University of Freiburg, Germany</td>
<td>Testing the Accessibility of Experimental Environments in Inclusive Science Classrooms</td>
<td>Michaela Oettle, University of Education, Freiburg, Germany; Silke Mikatski-Seifert, University of Education Freiburg, Germany; Wolfram Rollett, University of Education Freiburg, Germany; Katja Scharenberg, University of Education Freiburg, Germany</td>
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<td>Individual Education Plans: Just a Tool to Immunize Teaching from Parental Criticism?</td>
<td>Raphael Köstmann, University of Hildesheim, Germany</td>
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<td>Social Inclusion in Secondary School</td>
<td>Reto Luder, Zurich University of Teacher Education, Switzerland; André Kunz, Zurich University of Teacher Education, Switzerland; Ariane Paccaud, Pädagogische Hochschule Zürich, Switzerland; Giuliana Pastore, Pädagogische Hochschule Zürich, Switzerland</td>
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## Session Q: 2
### Time: 09:00-10:00
### Location: Session Room 6
### SINGLE PAPER: STUDENT LEARNING IN HIGHER EDUCATION

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<th>Chair</th>
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<tr>
<td>Jake McMullen, University of Turku, Finland</td>
<td>Students approaches to learning and study-related burnout in exceptional Covid19-situation</td>
<td>Henna Asikainen, University of Helsinki, Finland; Anna Pappala, University of Helsinki, Finland</td>
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<td>Discipline-based vs project-based business curriculum: comparison of learning outcomes</td>
<td>Laura Helle, University of Turku, Finland; Eero Laaksonen, University of Turku, Finland; Finland; Maria Valverda Haiva, Turku University of Applied Sciences, Finland; Heini P. A. Boshuizen, Open University of the Netherlands, Netherlands</td>
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<td>Writing retreats for master’s thesis students: a productive space</td>
<td>Vibekke Ankersborg, Copenhagen Business School, Denmark</td>
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## Session Q: 3
### Time: 09:00-10:00
### Location: Session Room 3
### SINGLE PAPER: LITERACY AND ASSESSMENT METHODS

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<tr>
<td>Paul Fetters, PH Freiburg, Germany</td>
<td>What we measure when measuring children’s Home Literacy Environment: A comparison of methods</td>
<td>Astrid Wirth, Ludwig Maximilians-Universität München, Germany; Elsfun Annac, Ludwig Maximilians-Universität (LMU), Germany; Frank Niklas, Ludwig Maximilians-Universität (LMU), Germany</td>
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<td>Extensions of the books-at-home index and their relevance for academic language comprehension</td>
<td>Birgit Hept, Humboldt-Universität zu Berlin, Germany; Melanie Olczyk, University of Leipzig, Germany; Anna Volodina, University of Bamberg, Germany</td>
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<td>The impact of the test administrator in assessing speech sound discrimination</td>
<td>Renata Kiss, MTA-SZTE Research Group on the Development of Competencies, Hungary; Dóra Mokri, University of Szeged, Hungary; Benő Csapó, University of Szeged, Hungary</td>
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## Session Q: 4
### Time: 09:00-10:00
### Location: Session Room 10
### SINGLE PAPER: SCIENCE EDUCATION

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<tbody>
<tr>
<td>Max Scheja, Stockholm University, Sweden</td>
<td>Issue-based and Action-oriented Instruction for Future Citizens: The Impact of Scientific Knowledge</td>
<td>Shih-Yeh Chen, Taichung Municipal High School, Taiwan; Shiang-Yao Liu, National Taiwan Normal University, Taiwan</td>
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<td>Digitalization in the Mirror of Time of COVID 19. How does school principals’ perception change?</td>
<td>Ulrike Kein, TU Kaiserslautern, Germany; Manfred Schierl-Ohrens, TU Kaiserslautern, Germany</td>
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<td>Person- and Situation-Specific Factors in Discounting Science via Scientific Impotence Excuses</td>
<td>Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany; Martin Kewer, Leibniz Institute for Psychology (ZPID), Germany; Anita Chasiotis, Leibniz-Institute for Psychology (ZPID), Germany; Oliver Wedderhoff, Leibniz Institute for Psychology (ZPID), Germany</td>
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### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Dirk Tempelaar, Maastricht University, Netherlands

**Toward an embodied, cultural, and social view of teacher noticing**
Thorsten Scheiner, Australian Catholic University, Australia

**New ways in video-based research: Exploring teachers’ “professional vision” with eye-tracking**
Corinne Wyss, FHWeb School of Education, Switzerland; Katharina Rosenberger, University College for Teacher Education, Austria; Wolfgang Bührer, PhD Zurich, Switzerland

**Development of Constructivist Teaching Competences in Teacher Education: A Video-based Intervention**
Mirjam Kocher, University of Education Zurich, Switzerland; Anna Locher, University of Education Brugg-Windsch (PH FHNB), Switzerland; Matthias Baeer, University of Education Zurich (PHZH) and University of Zurich (UZH), Switzerland

### SINGLE PAPER: MOTIVATION AND QUANTITATIVE METHODS

**Chair**
Yuri Uesaka, The University of Tokyo, Japan

**Explaining Interindividual Stability in Knowledge – A Meta-Analysis on the Role of Motivation**
Thomas Simaoek, University of Trier, Germany; Bianca Simonsmeir, University of Trier, Germany; Michael Schneider, University of Trier, Germany

**Effects of Student-Teacher-Conferences on motivational aspects of learning**
Sonja Erlit, Friedrich-Alexander Universität, Germany; Andreas Haringer, Universität Augsburg, Germany; Benjamin Kücherer, Universität Augsburg, Germany

**Profiles of mathematical skills and motivation among first grade students**
Heta Tuominen, University of Turku, Finland; Markku Niemivirta, University of Eastern Finland, Finland; Johan Korhonen, Åbo Akademi University, Finland; Anna Tapola, University of Helsinki, Finland; Riikka Mononen, University of Oslo, Norway

### SINGLE PAPER: QUANTITATIVE METHODS AND PRE-SERVICE TEACHER EDUCATION

**Chair**
Jonas Emanuelsson, University of Gothenburg, Sweden

**Empirical Relations between Communicative Skills, General Pedagogical Knowledge and Grades**
Ulrike Schwabe, DAZH - German Centre for Research on Higher Education and Science Studies, Germany; Kristina Walz, Justus-Liebig-Universität Giessen, Germany; Edith Braun, Justus-Liebig-Universität Giessen, Germany

**Sensitivity to diagnostic task potential: pre-service teachers task selection during diagnosis**
Stephanie Kron, Ludwig-Maximilians-Universität (LMU), Germany; Daniel Sommerhoff, Leibniz Institute for Science and Mathematics Education, Germany; Maik Achtnicht, Ludwig Maximilians-Universität (LMU), Germany; Christoph Wecker, Universität Hildesheim, Germany; Matthias Siebeck, Ludwig Maximilians-Universität (LMU), Germany; Kathrin Stürmer, Universität zu Tübingen, Germany; Stefan Ufer, Ludwig Maximilians-Universität (LMU), Germany

**Supporting preservice teachers’ learning of quantitative research method with learning analytics.**
Erikko Soantu, University of Eastern Finland, Finland; Teemu Valtonen, University of Eastern Finland, Finland; Susanne Halberg, University of Eastern Finland, Finland; Sanna Väisänen, University of Eastern Finland, Finland; Laura Hirsto, University of Eastern Finland, Finland

### SINGLE PAPER: SELF-REGULATION

**Chair**
Pia Näsö, University of Jyväskylä, Finland

**Task or Self-Based Goals? A Goal-Setting Intervention Study within a Workplace SRL Training**
Anne Frieda Doris Kitset, Ulm University, Germany; Madita Dälke, Ulm University, Germany; Sophia Rommel, Ulm University, Germany; Anita Christina Risti-Pentz, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**Nurses' self-regulated learning in the hospital: insights from a multi-perspective study**
Katrien Cuyvers, Spaarne Gasthuis, Netherlands; Maaike Endeldijk, University of Twente, Netherlands; Catharina Van Oostheen, Spaarne Gasthuis, Netherlands; Veerle Strobin, Spaarne Gasthuis, Netherlands

**What’s relationship between self-efficacy, self-regulation and performance in screen-based simulator?**
Guillaume DECOMELLE, Université Toulouse Jean-Jaurès, France; Thomas Geeraerts, Université Toulouse, France; Nathalie Huet, University of Toulouse 2, France
**THURSDAY, 26 AUGUST 2021**

**Session Q: 9**

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<td><strong>Global Citizenship Education in the age of digital transformation. From theory to teaching practice</strong></td>
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<td>Sebastian Anselmann, University of Education Schwäbisch Gmünd, Germany</td>
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<td><strong>Examining students’ expectancies and values with networks and directed acyclic graphs</strong></td>
<td>Hye Rin Lee, University of California Irvine, United States; Daniela Alvarez-Vargas, University of California, Irvine, United States; Xin Tang, University of Helsinki, Finland; Drew H. Bailey, University of California, United States; Ji Seung Yang, University of Maryland, United States; Naysan Safavian, University of California, Irvine, United States; Hanna Gaspard, TU Dortmund University, Germany; Sandra Simpkins, University of California, Irvine, United States; Katarina Salmela-Aro, Helsinki University, Finland; Jacqueline S. Eccles, University of California, Irvine, United States; Allan Wigfield, University of Maryland, United States</td>
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<td><strong>Networks of Expectancies-Values-Costs in Finnish Adolescents across Subjects, Years, and Achievement</strong></td>
<td>Xin Tang, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland</td>
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<td><strong>The “situative nature” of expectancies and values and the predictive power of autonomy support</strong></td>
<td>Cora Parnikus, University of Tübingen, Germany; Hanna Gaspard, TU Dortmund University, Germany; Steffen Zitzmann, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany</td>
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<td>Ellen Kok, Utrecht University, Netherlands</td>
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<td><strong>Developing a standardized questionnaire to assess the learning experience with eyewitness accounts</strong></td>
<td>Lisa Zachrich, University of Tübingen, Germany; Christiane Bertram, University of Konstanz, Germany; Ulrich Trautwein, University of Tübingen, Germany; Wolfgang Wagner, University of Tübingen, Germany</td>
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<td><strong>Images of the past: the historical plausibility of students’ written texts, drawings and film clips</strong></td>
<td>Tessa de Leur, Amsterdam University of Applied Sciences (AUAS), Netherlands; Carla Van Bostel, University of Amsterdam, Netherlands</td>
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<td><strong>Students’ motivation to learn history: A self-determination theory perspective</strong></td>
<td>Michiel Voet, Ghent University, Belgium; Robbe Brisard, Hogeschool Gent, Belgium; Bram De Wever, Ghent University, Belgium</td>
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**Time:** 09:00-10:00  
**Location:** Session Room 14

**ESPRESSO INVITED SYMPOSIUM: SIG 4: ENHANCING SUPPORT IN THE TRANSITION TO HIGHER EDUCATION – IN THE LIGHT OF STUDENTS’ DIVERSITY**

| Chair | Fair Enough?! Investigating the Specific Challenges of Diverse University First-Year Students  
Mikael De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l’Enseignement Supérieur (ARES), Belgium  
| Discussant | Developing first-year students’ academic self-efficacy in a distance setting  
Taiga Brahmk, University of Tübingen, Germany; Ronja Böker, Universität Paderborn, Germany; Juliane Fluge, Universität Paderborn, Germany; Tobias Jenert, Universität Paderborn, Germany  
| | Transitions in Higher Education for migrant students: Academic Language support in Italy and Sweden  
Sylvia Vigno, University of Gothenburg, Sweden; Giulia Messina Dahlberg, University of Gothenburg, Sweden; Alessio Sustin, University of Padova, Italy |

### Session Q: 16
**Time:** 09:00-10:00  
**Location:** Session Room 2

**COLLABORATIVE WORKSPACE: INTERCULTURAL COLLABORATION FOR HE STUDENTS: CURRENT AND POSSIBLE RESEARCH DIRECTIONS**

| Intercultural collaboration for HE students: current and possible research directions  
Bedry Bergman, Chalmers University of Technology, Sweden; Irene Poort, University of Groningen, Netherlands; Kirsten Davis, Purdue University, United States |

### Session Q: 17
**Time:** 09:00-10:00  
**Location:** Session Room 15

**SPONSORED SESSION: PROCTORIO**

| Proctorio  
Markus Schwab, Proctorio GmbH, Germany; Melvin van Groeningen, Proctorio, Netherlands |

### Session Q: 18
**Time:** 09:00-10:00  
**Location:** Session Room 4

**INVITED SYMPOSIUM: SIG 20: ENGAGING TEACHERS IN INQUIRY LEARNING**

| Chair | Examining pre-service teachers’ capability to design simulation based inquiry learning activities  
Koen Veermaans, University of Turku, Finland |
| Organiser | Wouter R. van Joolingen, Utrecht University, Netherlands |
| Discussant | Margus Pedaste, University of Tartu, Estonia |
| | A Lesson Study approach to the development of an augmented reality for biology teaching  
Wouter R. van Joolingen, Utrecht University, Netherlands; Sui Goei, Windesheim University of Applied Sciences, Netherlands; Henry Matimba, Freudenthal Institute, Utrecht University, Netherlands; Ryan Kyaw Thu Aung Ba, Nanyang Technological University, Singapore, Singapore |
| | Bringing simulations to the classroom: teachers’ perspectives  
Tomi Jaakkola, Tampere University, Finland; Koen Veermaans, University of Turku, Finland |
| | Guiding student thinking through teacher questioning when learning with dynamic representations  
Antti Lehtinen, University of Jyväskylä, Finland; Markus Hahköönen, University of Jyväskylä, Finland; Pasi Nieminen, University of Jyväskylä, Finland |

### Keynotes III: 1
**Time:** 10:45-11:45  
**Location:** Auditorium B

**EARLY KEYNOTE SESSION: THE VITAL, THOUGH CHALLENGING NATURE OF SELF-REGULATED LEARNING MORE THAN EVER ACKNOWLEDGED**

| Chair | The vital, though challenging nature of self-regulated learning more than ever acknowledged  
Iise Halkvort, Göteborg University, Sweden |
| | Hilde Van Keer, Ghent University, Belgium |
### EARLY KEYNOTE SESSION: A PRACTICAL THEORY OF TEACHING

**Chair**
Jonas Emanuelsen, University of Gothenburg, Sweden

**A Practical Theory of Teaching**
James Hiebert, University of Delaware, United States

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### SINGLE PAPER: COMPUTER-ASSISTED LEARNING

**Chair**
Sebastian Wurser, Johannes Gutenberg University Mainz, Germany

**Impact of audio-support on reading strategy, time, and performance in students with dyslexia**
Carolien A. N. Knoop van Campen, Radboud University Nijmegen, Netherlands; Danique ter Doest, Radboud University, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands; Eliane Segers, Radboud University Nijmegen, Netherlands

**How do Teachers make Sense of Formative Assessments and how can they be supported by Visualizations?**
Sarah Bez, University of Tuebingen, Germany; Samuel Merk, University of Education Karlsruhe, Germany

**Evaluating the automatic scoring of text comprehension diagrams as feedback for monitoring accuracy**
Héctor J. Pijera Díaz, Maastricht University, Netherlands; Sofia Braumann, University Utrecht, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Antje de Bruin, Maastricht University, Netherlands

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### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN PRIMARY EDUCATION

**Chair**
Cristian Simoni, University of Padua, Italy

**The profiles of teacher’s professional agency development in the classroom**
Rocca Yi-Peitälä, Tampere University, Finland; Kirs Pühäät, University of Helsinki, Finland; Janne Pietarinne, University of Eastern Finland, Finland

**Reference group effects on teachers’ judgements of student intelligence**
Julius J. Weise, Saarland University, Germany; Jörn R. Sparkeldt, Saarland University, Germany; Detlef H. Rost, Southwest University Chongqing, China

**Understanding oral language at school entry: dimensionality of speaking and listening skills**
Jessica Massonnié, University College London - Institute of Education, United Kingdom; Anna Llaurado, University College London, Institute of Education, United Kingdom; Emma Sumner, University College London, Institute of Education, United Kingdom; Julie Dockrell, Institute of Education, United Kingdom

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### SINGLE PAPER: EXPERIMENTAL STUDIES IN TEXT, GRAPHICS AND READING COMPREHENSION

**Chair**
Robbert Smit, University of Teacher Education St.Gallen, Switzerland

**How to learn with unorganized concept maps – Is organization highlighting the savior in need?**
Felix Kriegstein, Chemnitz University of Technology, Germany; Sascha Schneider, Chemnitz University of Technology, Germany; Maik Beaeg, Chemnitz University of Technology, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany

**Elementary School Children’s Mental Representations of Narrative and Expository Texts**
Wienke Wannagat, University of Würzburg, Germany; Valentina Steinerke, University of Würzburg, Germany; Catharina Tikken, University of Würzburg, Germany; Gerhild Nieding, University of Würzburg, Germany

**A NIIRS study of static versus animated presentations processing in deaf and hearing learners**
Jean-Michel Bouchex, University of Dijon, LEAD-CNRS, France; Sebastien Laurent, IIPSTTAR, France; Laurence Paire-Ficout, Université Gustave Eiffel, France; Stephane Argon, University of Dijon, LEAD-CNRS, France; Antonio R. Hidalgo-Muñoz, University of Toulouse, CLE, France
### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS

**Chair**
Susanne Seifert, University of Graz, Austria

**Assessing Critical Thinking and Metacognition in Higher Education**
Felipe López, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Vito Mussuto, Pontificia Universidad Católica de Chile, Chile; Mayra Contreras, Pontificia Universidad Católica de Chile, Chile; Ricardo Paredes, Pontificia Universidad Católica de Chile, Chile; Damian Geierstein, Pontificia Universidad Católica de Chile, Chile; Ximena López, University of Huddersfield, United Kingdom; Matias Recabarren, Universidad de los Andes Chile, Chile; Pablo Chiurinatto, Pontificia Universidad Católica de Chile, Chile

**Identification of Tool User Clusters Based in a Computer-Based Office Simulation**
Sabrina Ludwig, University of Mannheim, Germany

**Without errors but not a good answer: assessing to guide progressions towards biology paradigm**
François Lombard, University of Geneva, Switzerland; Marie Sudries, University of Geneva, Switzerland; Sélène Perron, University of Geneva, Switzerland; Camille Larpin, University of Geneva, Switzerland; Laura Weiss, University of Geneva, Switzerland; Daniel K. Schneider, University of Geneva, Switzerland

### SINGLE PAPER: MATHEMATICS AND MOTIVATION

**Chair**
Evelyn Steinberg, Vetmeduni Vienna, Austria

**Gendered self-beliefs and interests: Influencing career pathways for mid-adolescent New Zealanders?**
Penelope Watson, University of Auckland, New Zealand; Gavin Brown, University of Auckland, New Zealand; Bing Mei, The University of Auckland, New Zealand; Bernhard Ertl, Bundeswehr University Munich, Germany

**Stability and change of motivation profiles in mathematics instruction in lower secondary education**
Tanja Held, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Student interest in mathematics and German: Gender differences and the role of teacher expectations**
Elsa Oppermann, University of Bamberg, Germany; Rebecca Lazarides, University of Potsdam, Germany

### SINGLE PAPER: ASSESSMENT IN STUDENT LEARNING

**Chair**
Roger Säljö, University of Gothenburg, Sweden

**The diagnostic test evaluation and the student misconception development in science**
Soeharto Soeharto, University of Szeged, Doctoral School of Education, Indonesia; Bené Csapo, University of Szeged, Hungary

**Assessing instructional quality based on first impressions of untrained observers**
Lukas Begrich, DIPF | Leibniz Institute for Research and Information in Education, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany; Susanne Kuger, German Youth Institute (DfJ), Germany; Benjamin Caspar Fauth, University of Tübingen, Germany

**By The Teacher Side: Strategies and Practices for Student Self-assessment**
Serafia Pastore, University of Bari, Italy
THURSDAY, 26 AUGUST 2021

**Session R: 7**
**Time: 12:00-13:00**
**Location: Session Room 4**

**SINGLE PAPER: MOTIVATION AND PSYCHOMETRICS**

**Chair**
Kaire Ubcoleht, University of Tartu, Estonia

**Keep on watching? Context and domain specificity of interest in networks of science video watching**
Maia Sachisthal, University of Amsterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands; Thea Peetsma, University of Amsterdam, Netherlands; Maartje Raajmakers, Vrije Universiteit Amsterdam, Netherlands

**Perceptions of Preparedness and Success Inform Undergraduates’ Feelings of Belonging**
J. Elizabeth Richey, Carnegie Mellon University, United States; Nikki Lobczowski, Carnegie Mellon University, United States; Kevin Jarbo, Carnegie Mellon University, United States; Elise Morton, Georgia Institute of Technology, United States; Ken Koedinger, Carnegie Mellon University, United States

**Measuring reading attitudes of Kindergarteners and 1st-Graders**
Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Marjolein Dobber, Vrije Universiteit Amsterdam, Netherlands; Jo van Schaik, Vrije Universiteit Amsterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands

**Session R: 8**
**Time: 12:00-13:00**
**Location: Session Room 6**

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS**

**Chair**
Ivy Lau, Hong Kong Baptist University, Hong Kong

**Unravelling workplace educators’ judgement processes when assessing students’ performance**
Marlisa de Vos, Open University the Netherlands, Netherlands; Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Cees van der Vleuten, Maastricht University, Netherlands; Ely de Buijn, Hogeschool Utrecht / OU, Netherlands

**Pedagogical Assessment: Relationships between Space, Active Learning, and High-order Thinking Skills**
Itt Sasson, Tel-Hai College, Israel; Shirley Medijensky, Oranim Academic College, Shamir Institute, University of Haifa, Israel; Itamar Yehuda, Tel Hai Academic College, Israel

**Using machine learning to support study selection for a meta-analysis on simulation-based learning**
Olga Chemikova, Ludwig Maximilian University, Germany; Ivan Melev, Ludwig Maximilian University, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Session R: 9**
**Time: 12:00-13:00**
**Location: Session Room 16**

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND WORKPLACE LEARNING**

**Chair**
Natalie Peters, TU Dresden, Fakultät Wirtschaftswissenschaften, Germany

**Professional development preferences for blended learning in higher education teaching staff**
Anja Garone, Vrije Universiteit Brussel, Belgium; Sarah Howard, University of Wollongong, Australia; Jack Yang, University of Wollongong, Australia; Jo Yondeur, Vrije Universiteit Brussel, Belgium; Bram Pynoo, VWEES hogh school, Belgium; Kajen Sitjuyen, Hasselt University / Vrije Universiteit Brussel, Belgium

**Innovation and Transformational learning**
Ilse Terpstra-Kamstra, Saxion University of Applied Sciences, Netherlands; Els Boshuizen, Open University of the Netherlands, Netherlands

**The three paradoxes of professional learning**
Rikka Hofmann, University of Cambridge, United Kingdom

**Session R: 10**
**Time: 12:00-13:00**
**Location: Session Room 11**

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, MOTIVATION AND EMOTION**

**Chair**
Elisabeth Wegner, University of Freiburg, Germany

**The effects of situational interest and task effort on eighth-graders’ math test performance**
Anna Tapola, University of Helsinki, Finland; Maximilian Knogler, Technical University of Munich (TUM), Germany; Markku Niemivirta, University of Eastern Finland, Finland

**Longitudinal effects of perceived classroom support on students’ achievement emotions**
Francois Peixoto, ISPA · Instituto Universitário / CIE - ISPA, Portugal; Lara Forstblom, ISPA · Instituto Universitário / CIE - ISPA, Switzerland; Lourdes Mata, ISPA · Instituto Universitário / CIE - ISPA, Portugal

**Meaning in life and resilience among teachers**
Maria Platidou, University of Macedonia, Greece; Athena Danilioud, University of Macedonia, Greece
THURSDAY, 26 AUGUST 2021

**Session R: 11**  
**Time: 12:00-13:00**  
**Location: Session Room 17**

**SINGLE PAPER: AT-RISK STUDENTS**

**Chair**  
Franco Rau, University of Vechta, Germany

**Facilitating novel word learning in pupils at inclusive elementary schools via iconic gestures**
Carina Lüke, University of Würzburg, Germany; Nathalie Frey, University of Würzburg, Germany

**Inclusive education and assessment: Teachers’ intentions to use an accommodate teaching material**
Mickaël Jurý, Clermont Auvergne University, France; kamilla kmoczina, Université Clermont Auvergne, France; Sylvette Menge, INSPE Clermont Auvergne, France; Caroline Desombre, INSPE Lille Haut-de-France, France

**Noise-Cancelling Headphones for Students With Special Needs: A Systematic Scoping Review**
Pawel R. Kuśmier, University of Potsdam, Germany

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**Session R: 12**  
**Time: 12:00-13:00**  
**Location: Session Room 3**

**SINGLE PAPER: E-LEARNING AND ONLINE LEARNING**

**Chair**  
Alejandra Meneses, Pontificia Universidad Católica de Chile, Chile

**Science, Maddá and ‘Ilm: The Language Divide in Scientific Information Available to Internet Users**
Avu J. Sharon, Technion - Israel Institute of Technology, Israel; Kawther Zoubi, Technion – Israel Institute of Technology, Israel; Eyal Nitzany, Independent Scholar, Israel; Ayatet Ilaram-Tsabari, Technion, Israel

**It’s here, are we ready? Exploring readiness for online teaching and implications for the future**
Sarah Howard, University of Wollongong, Australia; Jo Tondeur, Vrije Universiteit Brussel, Belgium; Ronny Scherer, University of Oslo, Norway; Fazlāt Siddiq, University of South-Eastern Norway, Norway

**Emergency remote teaching in higher education: Initial Insights into a living systematic review**
Victoria I. Martin-Juarros, University of Ueda, Spain; Melissa Bond, EPPI-Centre, Institute of Education, University College London, United Kingdom; Svenja Bedenlier, Innovation in Learning Institute, University of Erlangen-Nuremberg, Germany; Marion Händel, University of Erlangen-Nuremberg, Germany

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**Session R: 13**  
**Time: 12:00-13:00**  
**Location: Session Room 2**

**SINGLE PAPER: HISTORY**

**Chair**  
Rosario Palacios, Centro de Justicia Educacional Pontificia Universidad Católica de Chile, Chile

**Evaluating the trustworthiness of (historical) sources. Designing and testing of an intervention**
Maartje van der Eem, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Saakia Brand-Grivel, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Using analogy for teaching causal reasoning in History**
Jannet van Drie, University of Amsterdam, Netherlands; Gerhard Stol, RICDE / University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Who benefits from a historical writing intervention? Empirical evidence from Secondary Schools**
Monika Wada, University of Applied Sciences Northwestern Switzerland, Switzerland; Martin Nüsche, Fachhochschule Nordwestschweiz, Switzerland; Kevin van Loon, PH FHNW, Switzerland; Dominic Studer, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland

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**Session R: 14**  
**Time: 12:00-13:00**  
**Location: Session Room 5**

**SINGLE PAPER: ATTITUDES AND BELIEFS**

**Chair**  
Nina Jude, University Heidelberg, Germany

**How Can Homework Design Influence Teachers’ Beliefs? A Case Study in a Japanese High School**
Ericto Ota, Saitama Gakuen University, Japan

**#Unि@Home: How did media usage change during the corona semester 2020 compared to 2018?**
Taiga Brah, University of Tübingen, Germany; Marina Pumpiot, University of Tübingen, Germany

**Hungarian students’ experiences, attitudes towards traditional and COVID-induced digital education**

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### Session R: 15
**Time:** 12:00-13:00  |  **Location:** Session Room 15

**INVITED SYMPOSIUM: SIG 11: UNIVERSITY TEACHER EDUCATION IN TIMES OF COVID**

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<td>Lennart Schalk, PH Schweyz, Switzerland</td>
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**Preservice Teacher’s Perceptions of Learning Conditions during Covid-19**
Inger Marie Dalehette, University of Agder, Norway; Elaine Munthe, Stavanger University College, United States

**Factors influencing intention to use digital materials among pre-service teachers during pandemic**
Jennifer Paetsch, University of Bamberg, Germany; Barbara Drechsel, University of Bamberg, Germany

**Importance of Peers for Student Teachers in an Internship during Pandemic Distance Learning**
Annemiek Koes, Zürich University of Teacher Education, Switzerland; Marco Gaile, Zürich University of Teacher Education, Switzerland

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### Session S: 1
**Time:** 14:30-15:30  |  **Location:** Session Room 13

**SINGLE PAPER: ATTITUDES AND BELIEFS**

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<tr>
<th>Chair</th>
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<tbody>
<tr>
<td>Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal</td>
<td>The role of parents, peers, and teachers in school alienation among adolescents</td>
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<tr>
<td>Julia Morinaq, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Frederick de Moll, University of Luxembourg, Luxembourg; Andreas Hadjar, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg; Alyssa Greuc, TU Dortmund University, Germany, Jan Schart, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Germany</td>
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**School dropout - analysis of key indicators of dropout risk**
Michaela Glaßner-Zikuda, University of Erlangen-Nuremberg, Germany; Katharina Fuchs, University of Erlangen-Nuremberg, Germany

**The Impact of SES and School Context on Academic Achievement – A Propensity Score Matching Approach**
Julia Radtsc, University of Oslo, Norway; Kjøs Yang Hansen, University of Gothenburg, Sweden

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### Session S: 2
**Time:** 14:30-15:30  |  **Location:** Session Room 17

**SINGLE PAPER: PEER INTERACTION AND ARGUMENTATION**

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<th>Chair</th>
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<tr>
<td>Lucia Mason, University of Padova, Italy</td>
<td>Using Critical Questions Productively to Improve Arguments Among Middle-School Science Students</td>
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<tr>
<td>Michael Nusbaumer, University of Nevada, Las Vegas, United States; Ian Dove, University of Nevada, Las Vegas, United States; Michael Van Wrinkle, University of Nevada Las Vegas, United States; Kris Carroll, Clark County School District, United States; LeAnn Putney, University of Nevada, Las Vegas, United States</td>
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**The argumentative effect of productive failure**
Antonia Larrain, Universidad Alberto Hurtado, Chile; Maria José Barrera, Pontificia Universidad Católica de Chile, Chile; Valeska Grau, Pontificia Universidad Católica de Chile, Chile

**Dialogic Engagement in Geometry Peer Learning: A Commognitive Discursive Lens**
Naama Ben-Dor, Technion - Israel Institute of Technology, Israel; Einit Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel

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### Session S: 3
**Time:** 14:30-15:30  |  **Location:** Session Room 5

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND LITERACY**

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<th>Chair</th>
<th>Title</th>
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<tbody>
<tr>
<td>Franziska Vogt, St.Gallen University of Teacher Education, Switzerland</td>
<td>Longitudinal Effects of Parental Difficulties and Home Environment on Reading and Math Development</td>
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<tr>
<td>Daria Kharolainen, University of Jyväskylä, Finland; Maria Psyrrou, University of Jyväskylä, Finland; Gintautas Šilinskas, University of Jyväskylä, Finland; Marija Kristina Lerkkanen, University of Jyväskylä, Finland; Petka Niemi, University of Turku, Finland; Anna-Maja Pokkeus, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland</td>
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**Executive Functioning as a Predictor of Children’s Mathematics, Reading and Writing**
Deborah Pino-Pasternak, University of Canberra, Australia; Deborra Valcan, Murdoch University, Australia; Helen Davis, Murdoch University, Australia; Anabela Malpique, Murdoch University, Australia

**Breadth and Depth of Strategic Processing during Text Comprehension**
Natalia Latini, University of Oslo, Norway; Ymike Havekamp, University of Oslo, Norway; Ivar Bråten, University of Oslo, Norway
### Session S: 4 | Time: 14:30-15:30 | Location: Session Room 9

**SINGLE PAPER: COMPETENCIES IN TEACHING AND INSTRUCTION**

**Chair**
Anke Schmitz, Leuphana Universität Lüneburg, Germany

**Conceptualizing core coaching competencies for facilitating students' transition to the workplace**
Niels van der Baan, Maastricht University School of Business and Economics, Netherlands;
Irwen Gast, Maastricht University, Netherlands;
Simon Beausaert, Maastricht University, Netherlands;
Wim Giselaers, Maastricht University, Netherlands

**Teaching Quality and the Attainment of Basic Competencies**
Boris Eckstein, University of Teacher Education St. Gallen, Switzerland;
Andrea B. Erzinger, University of Berne, Switzerland;
Christian Bruehwiler, University of Teacher Education St.Gallen, Switzerland;
Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland

**Teaching reading comprehension in Austria: Do teachers do what science suggests?**
Marcel Iltischtiko, IGS - Institut zur Qualitätssicherung im Österreichischen Schulwesen, Austria;
Antonia Bachinger, Federal Institute for the Quality Assurance in the Austrian School System, IGS, Austria;
Veronika Österbauer, IGS, Austria;
Benedikt Winter, Federal Ministry of Education, Science and Research of Austria, Austria;
Daniel Paasch, Federal Institute for the Quality Assurance in the Austrian School System, Austria

### Session S: 5 | Time: 14:30-15:30 | Location: Session Room 8

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, EMOTION AND AFFECT**

**Chair**
Katarzyna Holubinska, FernUni Hagen, Germany, Germany

**First and second year education-degree students’ perceived stress and perceived lack of control**
Inmaculada Martínez-Garcia, University of Cadiz, Spain;
Tine Nielsen, UCL University College, Denmark;
Enrique Alastor, University of Cadiz, Spain

**Beyond math anxiety: Mood Induction of positive emotions promotes higher scores in undergraduates**
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico

**Exploring Math Anxiety Factors and Heart Rate When Students Fail in Solving a Math Problem**
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico;
Gerardo Ramirez, Ball State University, United States

### Session S: 6 | Time: 14:30-15:30 | Location: Session Room 16

**SINGLE PAPER: HIGHER EDUCATION**

**Chair**
Bernardita Munoz Chereau, University College London, United Kingdom

**Measuring medical students’ communication competence: a video-based situational judgment test**
Sabine Reiser, University of Erfurt, Germany;
Laura Schacht, University of Erfurt, Germany;
Eva Throm, 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

**Fostering medical communication through e-learning: Efficacy of video modeling and reflection.**
Kristina Schick, Technical University of Munich, Germany;
Laura Janssen, Technical University of Munich, Germany;
Christina Figalat, Technical University of Munich, Germany;
Sabine Reiser, University of Erfurt, Germany;
Laura Schacht, University of Erfurt, Germany;
Johannes Bauer, University of Erfurt, Germany;
Pascal Berberat, TUM Medical Education Center, Germany;
Martin Gartmeier, Technical University of Munich (TUM), Germany

**Interpreter-mediated consultations with simulated patients – a digital solution**
Mini Ruiz, Karolinska Institutet, Sweden;
Anna Sundelin, Karolinska Institute, Sweden
### SINGLE PAPER: COGNITIVE SKILLS IN MATHEMATICS

**Chair**
Winnie Karen Giera, Institut für Germanistik, University Potsdam (Germany), Germany

Adaptive use of subtraction by addition by 4th- to 6th-graders in multidigit subtraction.
Stijn Van Der Auwera, KU Leuven, Centre for Instructional Psychology and -Technology, Belgium; Joke Torbeys, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

Exploring relations between EF and math: Implications of modeling on research, theory, and practice
Andrew Ribner, University of Pittsburgh, United States

Understanding longitudinal relationships between linguistic, mathematical, and working memory skills
Nurit Viesel-Nordmeyer, Technische Universität Dortmund, Germany; Ute Ritterfeld, TU Dortmund University, Germany; Carina Lücke, University of Würzburg, Germany; Camilla Craså, TU Dortmund University, Germany; Anja Starke, University of Bremen, Germany

### SINGLE PAPER: MOTIVATION AND SELF-EFFICACY

**Chair**
Sina Fackler, Leibniz-Institute for Educational Trajectories (LIfB), Germany

Examining structural relations among motivation, behavior, and performance in writing
Ana Camacho, University of Porto and Polytechnic Institute of Porto, Portugal; Rui Alexandre Alves, University of Porto, Portugal; Fien De Smedt, Ghent University, Belgium; Pietro Boscolo, Università di Padova, Italy; Hilde Van Keer, Ghent University, Belgium

The impact of individual and parental factors on the job satisfaction of adolescents
Silke Luttenberger, University College of Teacher Education Styria, Austria; Manuela Paechter, University of Graz, Austria

Exploring inductive reasoning, scientific reasoning and science motivation in Vietnam students
De Vo, University of Szeged, Doctoral School of Education, Hungary

### SINGLE PAPER: EDUCATIONAL TECHNOLOGY

**Chair**
Felipe López, Pontificia Universidad Católica de Chile

Scaffolding augmented reality learning: A systematic review of the literature
Yiannis Georgiou, Cyprus University of Technology / Cyprus Center for Environmental Research & Education, Cyprus; Eleni Kyza, Cyprus University of Technology, Cyprus

Explaining science teachers’ intentions to use augmented reality
Juan García, Universidad Católica de Oriente, Colombia; Häsün Atap, Kircheh Ari Evran University, Turkey

Collaborative and individual learning in an augmented reality escape room game
Josef Buchner, University of Duisburg-Essen, Germany; Michael Kernes, University of Duisburg-Essen, Germany

### SINGLE PAPER: DEVELOPMENTAL PROCESSES

**Chair**
Lea Edstål-Ahrens, University of Gothenburg, Sweden

Development of students’ social support profiles and association with students’ study wellbeing
Sanna Ulmanen, Tampere University, Finland; Tiina Soiri-Ikonen, University of Tampere, Finland; Jarno Pietarinen, University of Eastern Finland, Finland; Kirs Pyhältö, University of Helsinki, Finland

Brokerage and School Improvement: A Systematic Review of Contexts, Theories, Methods and Effects
Beat Rechtsteiner, University of Zurich, Switzerland; Andrea Wüllschlager, University of Zurich, Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Eva Kyndt, University of Antwerp, Belgium

The influence of emotional challenges on students’ professional becoming – a comparative study
Linda Barman, The Royal Institute of Technology (KTH), Sweden; Maria Weurander, Stockholm University, Sweden; Henrik Lindqvist, Linköping University, Sweden; Anna Lena Lönn, Karolinska Institutet, Sweden; Astrid Seeberger, Karolinska Institutet, Sweden; Håkan Hult, Karolinska Institutet, Sweden; Robert Thornberg, Linköping University, Sweden; Annika Wernerson, Karolinska Institutet, Sweden
### Session S: 11
**Time:** 14:30-15:30  
**Location:** Session Room 1

<table>
<thead>
<tr>
<th>Chair</th>
<th>Topic</th>
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</table>
| ANASTASIA SKARPETI, NTNU - Norwegian University of Science and Technology, Norway | **Intuitive Rules in the Physics’s Laboratory**  
Ida Kukliansky, Ruppin Academic Center, Israel |
| | **Scientific reasoning and science knowledge: Findings from a 4-year longitudinal study in high school**  
Christopher Osterhaus, University of Vechta, Germany; Susanne Koerber, University of Education Freiburg, Germany; Kristin Nyberg, University of Education Freiburg, Germany; Beate Sodian, Ludwig-Maximilians-Universität (LMU), Germany |
| | **Curiosity and science competencies in high school: A four-year-longitudinal study**  
Susanne Koerber, University of Education Freiburg, Germany; Christopher Osterhaus, University of Vechta, Germany; Kristin Nyberg, University of Education Freiburg, Germany |

### Session S: 12
**Time:** 14:30-15:30  
**Location:** Session Room 10

<table>
<thead>
<tr>
<th>Chair</th>
<th>Topic</th>
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</table>
| Marije Veugen, Wageningen University and Research Centre, Netherlands | **Teachers’ conceptions of assessment literacy**  
Kitty Meijer, HU University of Applied Sciences Utrecht; Open University of the Netherlands, Netherlands; Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands; Elly de Buin, Hogeschool Utrecht / OU, Netherlands |
| | **Receiver proactive roles and natures of feedback in dialogic peer feedback**  
Giyun Zhu, Guangdong University of Foreign Studies, China |
| | **Assessment Literacy, Data Use, and Teacher Decision-making: A Feasible Balance?**  
Serafina Pastore, University of Bari, Italy |

### Session S: 13
**Time:** 14:30-15:30  
**Location:** Session Room 7

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<tr>
<th>Chair</th>
<th>Topic</th>
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| Engin Adir, Boğaziçi University, Turkey | **Standing up for physically active learning.**  
HQ Chim, Maastricht University, Netherlands |
| | **Tensions faced by social workers accompanying refugees’ professional integration in Switzerland**  
Stéphanie Cardoso, Educational Sciences Section, Switzerland |
| | **A review of student-created teaching materials: Types, data sources and learning-related matters**  
Jesús Ribera, UAB Universitat Autònoma de Barcelona, Spain; David Duran Gisbert, Universitat Autònoma de Barcelona, Spain |

### Session S: 14
**Time:** 14:30-15:30  
**Location:** Session Room 18

<table>
<thead>
<tr>
<th>Chair</th>
<th>Topic</th>
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| Perry Klein, The University of Western Ontario, Canada | **Self-reflection increases information usage in a digital serious game**  
Johannes Steinrücke, University of Twente, Netherlands; Bernard Veldkamp, University of Twente, Netherlands; Ton de Jong, University of Twente, Netherlands |
| | **Indicators for adaptive scaffolding in a medical emergency game**  
Tijliske Faber, Erasmus MC, Netherlands; Mary E.W. Dankbaar, Erasmus MC, Netherlands; Rob Kickert, Erasmus University Rotterdam, Netherlands; Walter van den Broek, Erasmus MC, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands |
| | **Do Learning Gains and Problem-Solving Success Predict Reflection Duration in Game-based Learning?**  
Daryn Dever, University of Central Florida, United States; Roger Azavedo, University of Central Florida, United States |
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<th>Session S: 15</th>
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<td><strong>SINGLE PAPER: EARLY CHILDHOOD EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Tj’s Rotsaert, Ghent University, Belgium</td>
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<tr>
<td><strong>Visual images in biology books for young children: Semiotic analysis and pedagogical implications</strong></td>
<td>Vasile Christidou, Aristotle University of Thessaloniki, Greece; Maria Koutsikou, University of Thessaly, Greece</td>
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<tr>
<td><strong>Understanding Grade One Student’s Transitional Competencies Through a Picture Book Intervention</strong></td>
<td>Wan Yi Eva Liu, The University of Hong Kong, Hong Kong; Wai Ming Cheung, The University of Hong Kong, Hong Kong</td>
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<td><strong>Post-Digital Block Play in a Nordic Pre-School</strong></td>
<td>Kenneth Pettersen, University of Oslo, Faculty of Education, Norway; Hans Christian Arnesset, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway</td>
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<th>Session S: 16</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 2</th>
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<tr>
<td><strong>SINGLE PAPER: WORKPLACE LEARNING</strong></td>
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<td><strong>Chair</strong></td>
<td>Alberto Nagle Cajes, Independent Consultant, Uruguay</td>
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<tr>
<td><strong>Stress of experts and novices in the flight simulator: Is it order of scenarios that matter?</strong></td>
<td>Jóni Lámsdóttir, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Katrinna Eerikäinen, University of Jyväskylä, Finland; Ville Helata, University of Jyväskylä, Finland; Arto Helvo, Finnair Flight Academy, Finland; Jouni Hietala, University of Jyväskylä, Finland; Tommi Kärkkäinen, University of Jyväskylä, Finland; Eemilia Lampi, University of Jyväskylä, Finland; Ari Tuhtala, University of Jyväskylä, Finland; Ilkka Tynkkynen, Finnair Flight Academy, Finland; Matti Vihola, University of Jyväskylä, Finland</td>
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<td><strong>Categorisation as interprofessional design work in health</strong></td>
<td>Christopher Sadorge, University of Oslo, Faculty of Education, Norway; Monika Nerland, University of Oslo, Norway; Asa Makitalo, University of Gothenburg, Sweden</td>
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<td><strong>Impact of clinical leadership professional development on individuals and organisations</strong></td>
<td>Rikka Hofmann, University of Cambridge, United Kingdom; Jan Vermunt, Eindhoven University of Technology, Netherlands</td>
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<th>Session S: 17</th>
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<tr>
<td><strong>INVITED SYMPOSIUM: MEET THE EARLI EDITORS</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Piet Van den Bossche, University of Antwerp, Belgium</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Piet Van den Bossche, University of Antwerp, Belgium</td>
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<tr>
<td><strong>Learning and Instruction</strong></td>
<td>Lars-Erik Malmberg, University of Oxford, United Kingdom</td>
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<tr>
<td><strong>Educational Research Review</strong></td>
<td>Hans Gruber, University of Regensburg, Germany</td>
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<tr>
<td><strong>Frontline Learning Research</strong></td>
<td>Thomas Martens, Medical School Hamburg, Germany</td>
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<tr>
<td><strong>New Perspectives on Learning and Instruction</strong></td>
<td>Isabel Rasmontok, Université Catholique de Louvain, Belgium</td>
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<tr>
<th>Session T: 1</th>
<th>Time: 15:45-16:45</th>
<th>Location: Session Room 11</th>
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<tr>
<td><strong>ESPRESSO INVITED SYMPOSIUM: SIG 27: THE PITFALLS AND PROMISES OF ONLINE COLLECTION OF PROCESS DATA</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Leen Catrysse, Open Universiteit Nederland, Netherlands</td>
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<tr>
<td><strong>Organisers</strong></td>
<td>Leen Catrysse, Open Universiteit Nederland, Netherlands; Ellen Kok, Utrecht University, Netherlands</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Thomas Martens, Medical School Hamburg, Germany</td>
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<tr>
<td><strong>Processing strategies in learning from video: From the lab to a COVID-proof distance-based study</strong></td>
<td>Marijn Gijssen, University of Antwerp, Belgium; Leen Catrysse, Open Universiteit Nederland, Netherlands; Sven De Maeyer, Antwerp University, Belgium; David Gilbets, University of Antwerp, Belgium</td>
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<td><strong>Measuring electrodermal activity (EDA) with smart rings before and during COVID-19</strong></td>
<td>Lisa Postareff, HAMK University of Applied Sciences, Finland; Petri Nokelainen, Tampere University, Finland; Anna Parpala, University of Helsinki, Finland; Heta Rintala, Hame University of Applied Sciences, Finland</td>
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<tr>
<td><strong>Webcam-based eye-tracking in educational sciences: Possibilities and some experiences</strong></td>
<td>Ellen Kok, Utrecht University, Netherlands</td>
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### Session T:2
**Time:** 15:45-16:45  
**Location:** Session Room 8

#### ESPRESSO INVITED SYMPOSIUM: SIG 25: RE-THEORIZING LEARNING AND RESEARCH METHODS IN LEARNING RESEARCH

**Chair:** Crina Damsa, University of Oslo, Norway  
**Organisers:** Antti Rajala, University of Oulu, Finland; Giuseppe Rittleja, University of Helsinki, Finland  
**Discussant:** Peter David Ramsaw, The University of Queensland, Australia

**Utopian methodology: Adressing the social and ecological crises in research on learning**  
Antti Rajala, University of Oulu, Finland; Alfredo Jornet, University of Oslo, Department of Teacher Education and School Research, Spain; Imy Accoly, Universidade Federal Fluminense, Brazil

**Relating with the more-than-human world: Extending sociocultural theorizing with posthumanism**  
Kristina Kumpulainen, University of Helsinki, Finland

**Learning in and across digital/physical spaces and time: Methodological and theoretical explorations**  
Giuseppe Rittleja, University of Helsinki, Finland

**Longitudinal social network analysis: a tool to examine social capital building in higher education**  
Jasperina Brouwer, University of Groningen, Netherlands; Dominik F. Frodlk, University of Vienna, Austria

### Session T:3
**Time:** 15:45-16:45  
**Location:** Session Room 18

#### PANEL DISCUSSION: SUPPORTING CREATIVE MINDS – FUNDING OPPORTUNITIES AT THE EUROPEAN RESEARCH COUNCIL

**Supporting creative minds – Funding opportunities at the European Research Council**  
KATRIEN VAN POECK, Ghent University & Uppsala University, Belgium; Pedro Carreiro, University College London, United Kingdom

### Session T:4
**Time:** 15:45-16:45  
**Location:** Session Room 12

#### PANEL DISCUSSION: BRIDGING RESEARCH AND PRACTICE: SELF-REGULATED LEARNING AND TEACHING DURING THE GLOBAL PANDEMIC

**Bridging Research and Practice: Self-Regulated Learning and Teaching during the Global Pandemic**  
Reinhard Peikrun, Ludwig Maximilians-Universität, Germany; Alyson Hadwin, University of Victoria, Canada; Roger Azevedo, University of Central Florida, United States; Lih Sarfaty, University of Haifa, Faculty of Education, Israel; Insa Linnewulf, Benedictus-Realschule Tunising (teacher in Germany), Germany; Fani Lauermann, TU Dortmund University, Germany; Moira Hood, University of Victoria, Canada

### Session T:5
**Time:** 15:45-16:45  
**Location:** Session Room 13

#### PANEL DISCUSSION: TRANSFORMING LEARNING: PARTNERING WITH UNDERGRADUATE STUDENTS TO TACKLE WORLD CHALLENGES

**Transforming Learning: Partnering with Undergraduate Students to Tackle World Challenges**  
Gray Kochhar-Lindgren, The University of Hong Kong, Hong Kong; Lily Leung, University of Hong Kong, Hong Kong; Benita Chik, Encompass HK, Hong Kong; Mei Tin Ming, The University of Hong Kong, Hong Kong

### Session T:6
**Time:** 15:45-16:45  
**Location:** Session Room 17

#### PANEL DISCUSSION: DOCTORAL EDUCATION DURING THE PANDEMIC AND BEYOND: CHALLENGES AND STRATEGIES

**Doctoral education during the pandemic and beyond: challenges and strategies**  
Gábor Kissmihok, Leibniz Information Centre for Science and Technology, Germany; Inge Van der Weijden, Leiden University, Netherlands; Alexander Haag, European University Association, Switzerland; Janet Metcalfe, Viss, United Kingdom
**SYMPOSIUM: NEW WAYS OF MEASURING, ANALYSING AND SCAFFOLDING SELF-REGULATED LEARNING**

**Chair**
Joep van der Graaf, Radboud University Nijmegen, Netherlands

**Organiser**
Joep van der Graaf, Radboud University Nijmegen, Netherlands

**Discussant**
Philip Winne, Simon Fraser University, Canada

- Improving the granularity for the measurement of self-regulated learning using multi-channel data
  Yizhou Fan, The University of Edinburgh, United Kingdom; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Johanna Moore, The University of Edinburgh, United Kingdom; Dragac Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

- Understanding Self-Regulated Learning Processes through Process Mining
  Lyn Lim, Technical University of Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Johanna Moore, The University of Edinburgh, United Kingdom; Dragac Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

- How Self-Regulated Learning Affects Different Learning Outcomes
  Joep van der Graaf, Radboud University Nijmegen, Netherlands; Lyn Lim, Technical University of Munich, Germany; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Johanna Moore, The University of Edinburgh, United Kingdom; Dragac Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

- Visualising student’s learning strategies in online learning to support self-regulation
  Shaveen Singh, Monash University, Australia; Maden Rakovic, Monash University, Australia; Yizhou Fan, The University of Edinburgh, United Kingdom; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, The University of Edinburgh, United Kingdom; Maria Bannert, Technical University of Munich (TUM), Germany; Dragac Gasevic, Monash University, Australia

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**SINGLE PAPER: INTERDISCIPLINARY STUDIES**

**Chair**
Fleur van Gils, KU LEUVEN, Belgium

- Optimizing Students’ Mental Health and Academic Success: AI-Enhanced Life Crafting
  Izaak Dekker, Erasmus University Rotterdam, Netherlands; Bettina De Jong, Erasmus University Rotterdam, Netherlands; Michaela Schippers, Erasmus University Rotterdam, Netherlands; Monique De Brujin, Erasmus University Rotterdam, Netherlands; Andreas Alexiou, University of Tilburg, Netherlands; Bas Giesbers, Erasmus University Rotterdam, Netherlands

- Relevance of Spatial Visualization Ability for Study Achievement in different STEM study programs
  Nils Nolte, University of Duisburg-Essen, Germany; Jens Fleischer, University of Duisburg-Essen, Germany; Christian Spodek, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Dietlev Leunher, University of Duisburg-Essen, Germany

- Psychological stress = physiological stress? An experimental study with prospective teachers
  Sara Becker, Pädagogische Hochschule Freiburg, Germany; Birgit Spinath, Heidelberg University, Germany; Beate Ditzen, Heidelberg University, Germany; Tobias Dörfler, Heidelberg University of Education, Germany

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**SINGLE PAPER: READING COMPREHENSION AND SECONDARY DATA ANALYSIS**

**Chair**
Janneke Sleehof, Eindhoven School of Education, Netherlands

- What Makes Mathematics Difficult for Adults? The Role of Reading Components in Solving Math Items
  Nadine Cruz Neri, University of Hamburg, Germany

- Practices with digital reading devices in the language arts classroom: evidence from NAEP 2017
  Ladislao Salmeron, University of Valencia, Spain; Cristina Vargas, University of Valencia, Spain; Pablo Delgado, University of Valencia, Spain; Naomi Baron, American University, United States

- Gender effects of motivational and emotional orientations on math, science, and reading achievement
  Frank Reinhold, University of Education Freiburg, Germany; Jennifer Driedich, Technical University of Munich, Germany; Sarah Holter, University of the Federal Armed Forces in Munich, Germany; Anja Schippe-Tioka, Technical University of Munich, Germany
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| **SINGLE PAPER: DESIGN-BASED RESEARCH** | Design principles for argumentative writing focusing on strategic and conversational support  
Yana Landrieu, Ghent University, Belgium; Fien De Smet, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium  
Knowledge building process and learning outcomes of collaborative research ethics training  
Anu Tammeo, University of Helsinki, Estonia; Erika Löfström, University of Helsinki, Finland; Maria Jesus Rodriguez-Triana, Tallinn University, Estonia; Kairi Koort, Tallinn University, Estonia  
Facilitating conceptual change when high school students are taught about cell membranes  
Leonie Johann, NORD University, Norway; Fredrik Rusk, Nord University, Norway; Jorge Gross, Otto-Friedrich-Universität Bamberg, Germany; Michael Reiss, University College London, United Kingdom | |

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| **SINGLE PAPER: INSTRUCTIONAL DESIGN IN MATHEMATICS** | Toddlers’ numerical development: modes of representation in interactive picture book reading  
Camilla Björklund, University of Gothenburg, Sweden; Hanna Palmér, Linnaeus University, Sweden  
Eye-tracking for investigating teachers’ diagnostic judgments from a process-view  
Saskia Schreiter, PH Heidelberg, Germany; Markus Vogel, University of Education Heidelberg, Germany; Tobias Doertler, PH Heidelberg, Germany; Markus Rehm, PH Heidelberg, Germany  
Preservice preschool teachers’ mathematical questions during interactive book reading  
Emke Op ‘t Eynde, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Joke Torbeys, KU Leuven, Belgium | |

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| **SINGLE PAPER: TEACHING AND INSTRUCTION IN EARLY CHILDHOOD EDUCATION** | To make or not to make? The effect of expected implementation on children’s idea selection  
Kim van Broekhoven, Radboud University, Netherlands; Barbara Bella, Maastricht University, Netherlands; Lex Borghans, Maastricht University, Netherlands  
Unfolding interaction during reading with at-risk and not at-risk first and second graders  
Sille Vanparys, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium  
Dialogic book reading in early childhood classrooms  
Chiel van der Veen, VU University Amsterdam, Netherlands; Mireille Smits, Vrije Universiteit Amsterdam, Netherlands; Femke van der Witt, Vrije Universiteit Amsterdam, Netherlands | |

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| **ICT DEMONSTRATION: TELEPRESENCE ROBOTS IN HIGHER EDUCATION: A LONGITUDINAL STUDY** | Telepresence Robots in Higher Education: A Longitudinal Study  
Fabian Wolff, Universität Koblenz-Landau, Germany; Jens Möller, University of Kiel, Germany | |

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| **ICT DEMONSTRATION: ASYNCHRONOUS ONLINE VIDEO-BASED MODULES TO SUPPORT MATHEMATICS TEACHERS’ PROFESSIONAL LEARNING** | Asynchronous Online Video-based Modules to Support Mathematics Teachers’ Professional Learning  
Nanette Siago, WestEd, United States; Angela Knots, WestEd, United States | |
**Session T: 15**  
**Time:** 15:45-16:45  
**Location:** Session Room 2  

**ICT DEMONSTRATION: COMMUNICATING SUSTAINABILITY: DEVELOPMENT AND EVALUATION OF AN ONLINE COURSE ON ACCESSIBLE WRITING**

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<th>Communicating Sustainability: Development and Evaluation of an Online Course on Accessible Writing</th>
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<td>Alessandra Rossetti, Universiteit Antwerpen, Belgium; Luuk Van Waes, University of Antwerp, Belgium</td>
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**Session T: 16**  
**Time:** 15:45-16:45  
**Location:** Session Room 15  

**INVITED SYMPOSIUM: SIG 12: THE ROLE OF NON-ACADEMIC SKILLS IN WRITING**

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<tr>
<th>The role of executive functions in writing: A cross-sectional study across 7 years of schooling</th>
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<td>Nayme Salas, Universitat Autonoma de Barcelona, Spain</td>
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<th>Writer profiles: Occurrence and relationship with student characteristics and writing outcomes</th>
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<tr>
<td>Fien De Smedt, Ghent University, Belgium; Yana Landrieu, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<th>Exploring the relationship between mindfulness and writing skills in sixth graders</th>
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<td>Carolina Cordeiro, University of Porto, Portugal; Sofia Magalhães, University of Porto, Portugal; Andrea Nunes, University of Porto, Portugal; Thibaut Olive, CNRS &amp; Université de Poitiers, France; São Luis Castro, University of Porto, Portugal; Teresa Limp, University of Porto, Portugal</td>
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**Session U: 1**  
**Time:** 17:30-18:30  
**Location:** Session Room 7  

**SYMPOSIUM: TEACHER MOTIVATION, TEACHING AND STUDENT MOTIVATION: EMPIRICAL PERSPECTIVES**

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<th>Beginning teachers’ intrinsic orientation for the profession and its relation to teaching quality</th>
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<td>Xiangyan Feng, University of Groningen, Netherlands; Michelle Helms-Lorenz, University of Groningen, Netherlands; Ridwan Maulana, GION - University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands</td>
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<tr>
<th>Identifying teachers’ motivational profiles and their consequences for teaching quality</th>
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<tr>
<td>Désirée Thommen, University of Zurich, Institute of Education, Switzerland; Uni W. Grab, University of Zurich, Switzerland; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland</td>
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<th>The relative strength of relations between teacher motivation and teaching quality dimensions</th>
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<td>Rebecca Lazarides, University of Potsdam, Germany; Ulrich Schiefele, University of Potsdam, Germany</td>
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<th>Teachers’ occupational commitment, school resources and teaching quality</th>
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<td>Rebecca Colly, University of New South Wales, Australia</td>
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**Session U: 2**  
**Time:** 17:30-18:30  
**Location:** Session Room 8  

**SYMPOSIUM: EARLY CHILDHOOD TEACHERS’ PROFESSIONAL COMPETENCE IN MATHEMATICS**

<table>
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<tr>
<th>Preschool teachers’ mathematical pedagogical content knowledge and classroom practice</th>
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<tr>
<td>Fobe Demedts, University of Leuven - Campus KULAK, Belgium; Fien Depaepe, KU Leuven, Belgium; Joke Torbrex, KU Leuven, Belgium</td>
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<th>Performance expectations and learning objectives in early mathematics – Austria and Switzerland</th>
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<tr>
<td>Karoline Rettenbacher, Karl-Franzens-Universität Graz, Austria; Lars Eichen, University of Graz, Austria; Manfred Pfittner, Zurich University of Teacher Education, Switzerland; Catherine Walter-Laager, University of Graz, Austria</td>
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<tr>
<th>Development of Early Childhood Teachers’ Knowledge and Emotions in Mathematics</th>
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<tr>
<td>Lars Jenßen, Humboldt-Universität zu Berlin, Germany; Michael Eid, Freie Universität Berlin, Germany; Markus Szczesny, TU Braunschweig, Germany; Katja Eilerts, Humboldt-Universität zu Berlin, Germany; Sigrid Blommeke, Centre for Educational Measurement at the University of Oslo (CEMO), Norway</td>
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<th>Cognitive and affective-motivational dispositions and children’s achievement in mathematics</th>
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<tr>
<td>Lara Pohle, Humboldt-Universität zu Berlin, Germany; Lars Jenßen, Humboldt-Universität zu Berlin, Germany; Katja Eilerts, Humboldt-Universität zu Berlin, Germany</td>
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THURSDAY, 26 AUGUST 2021

### SYMPOSIUM: YOUTUBE IN THE CLASSROOM AND BEYOND: COMPREHENSION AND EVALUATION OF ONLINE VIDEOS ON SCIENCE TOPICS

**Chair**
Ladislao Salmeron, University of Valencia, Spain

**Organiser**
Marc Stadler, University of Bochum, Germany

**Discussant**
Carita Kili, Tampere University, Finland

‘Youtubers’ as teachers: Are streaming videos suitable for learning in Secondary education?
Ladislao Salmeron, University of Valencia, Spain; Innmaculada Fajardo, University of Valencia, Spain; Ávila Vicenta, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Östeen Ammarkrud, University of Oslo, Norway; Silvia Maria Chiriez, University of Valencia, Spain; Marco Gómez Puerta, University of Alicante, Spain; Ana Pérez, University of Granada, Spain; Nadina Gómez-Merino, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Pablo Delgado, University of Valencia, Spain

Learning about science on YouTube: Simplified language affects laypeople’s evaluation of the content
Marc Stadler, University of Bochum, Germany; Lisa Scharrer, Ruhr-Universität Bochum, Germany; Katharina Bauer, University of Bochum, Germany

Expert but not persuasive: do students consider source when processing conflicting videos?
Colin Lescarret, CILIE-LTC, University of Toulouse, France; Franck Amadieu, University of Toulouse, France; Valerie Le Floch, University of Toulouse, CILIE, France; Jean-Christophe Saldevong, University of Toulouse, CILIE, France; Jean-Michel Bouchez, University of Dijon, LEAD-CNRS, France; André Tricot, University of Montpellier, France

Video as a Modality for Introducing Students to Affectively-Laden Issues in Bioethics
Gala Campos Olavaca, The Pennsylvania State University, United States; Alexandra List, The Pennsylvania State University, United States; Hye Yeon Lee, The Pennsylvania State University, Korea, Republic of; Bailing Lyu, The Pennsylvania State University, United States; Hongcui Du, The Pennsylvania State University, United States

### SYMPOSIUM: TEACHER-CHILD RELATIONSHIPS AND RELATED FACTORS IN TODDLER AND PRE-SCHOOL CLASSROOMS

**Chair**
Marja Kristiina Lerkkanen, University of Jyväskylä, Finland

**Organiser**
Eija Pakarinen, University of Jyväskylä, Finland

**Discussant**
Karine Vorschueren, KU Leuven, Belgium

Associations between the Teacher-Child Relationship and Children’s Expressive Vocabulary Development
Jessica Alves, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Joana Cadima, University of Porto, Portugal

Teacher-child interactions as a context for development of social competence in toddler classrooms
Jenni Salminen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Anna-Maja Polkka, University of Jyväskylä, Finland; Marja-Leona Laakso, University of Jyväskylä, Finland; Marja Kristiina Lerkkanen, University of Jyväskylä, Finland

Child-, group- and teacher predictors of child-teacher relationships in Greek pre-schools
Mimis Sumati, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom; Athanasios Gregoriadis, Aristotle University of Thessaloniki, Greece; Vasillis Grammatikopoulos, International Hellenic University, Greece; Evi Kiki Zachopoulou, International Hellenic University, Greece

### SYMPOSIUM: LOOKING TO THE ROLE OF INTERACTION PROCESSES FOR LEARNING-RELATED EMOTIONS

**Chair**
Hanna Jarvenoja, University of Oulu, Finland

**Organiser**
Jonna Malmberg, University of Oulu, Finland

**Discussant**
Jeff Greene, University of North Carolina, United States

Emotion Regulation in Socio-Emotionally Challenging Learning Contexts: A Case Study Approach
Maede Kazemitabar, Tehran University, Iran; Susanne Lapie, McGill University, Canada

How Individual Students’ Monitoring Events Occur During Collaborative Learning - A Network Analysis
Jonna Malmberg, University of Oulu, Finland; Mohammed Saqr, University of Eastern Finland, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

Group members’ situational socio-emotional conditions during collaborative learning
Tina Törnänen, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

Teachers’ Physiological Effort and Behavioral Instability Undermine Positive Effects of Support
Tim Maashard, Utrecht University, Netherlands; Monika Borker, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands
THURSDAY, 26 AUGUST 2021

Session U: 6 | Time: 17:30-18:30 | Location: Session Room 4

POSTER PRESENTATION: LEARNING TECHNOLOGIES

Chair
Stephanie Pieschl, Technical University of Darmstadt, Germany

Engagement and Formative Assessment Mediate the Relation between Attendance and Academic Performance
Chang Lu, University of Alberta, Canada; Maria Cutumisu, University of Alberta, Canada

Outcomes of a large-scale development project about differentiation and digital technologies
Johanna Lundqvist, Mälardalen University, Sweden; Karin Franzen, Karlstads University, Educational Studies, Sweden; Gun-Marie Wetsa, Mälardalens University, Sweden; Margareta Sandström, Mälardalens högskola, Sweden; Ulrika Larsdotter Bodin, Mälardalen University, Sweden; Petra Runström Nilsson, Mälardalen University, Sweden

Exploring students' emotions during learning with adaptive learning technology: a multimodal approach
Anne Horvers, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Tibor Bosse, Radboud University Nijmegen, Netherlands; Ard Lazender, Radboud University, Netherlands

Measuring the Development of ICT Skills for Personalized Learning
Kevin Askermann, Open University, Netherlands; Marjolein Bakker, Hogeschool van Arnhem en Nijmegen (HAN), Netherlands; Pierre Gorissen, HAN University of Applied Sciences, Netherlands; Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands; Anne-Marieke van Loon, HAN University of Applied Sciences, Netherlands; Marijke Kral, HAN University, Netherlands

Teacher evaluation of technology usage and assessment of an educational digital platform
Natalia Lara Nieto-Márquez, Universidad Camilo José Cela, Spain; Manuel Iglesias Solán, Universidad Complutense de Madrid, Spain; Elisa Martín Dobón, Universidad Complutense de Madrid, Spain

Digital competencies of literacy educators and the effective use of an innovative search engine
Mareike Kohls, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Sarah Weiss, Department of Linguistics, University of Tübingen, Germany; Heiko Holz, Department of Linguistics, University of Tübingen, Germany; Detmar Meurers, Department of Linguistics, University of Tübingen, Germany; Simone Jambor-Fahlen, Mercator Institute for Literacy and Language Education, Cologne, Germany; Nadine Mayer, Mercator Institute for Literacy and Language Education, Cologne, Germany; Michael Becker Mrozek, Mercator Institute for Literacy and Language Education, Cologne, Germany; Josef Schrader, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Hannes Schröder, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany

Session U: 7 | Time: 17:30-18:30 | Location: Session Room 13

POSTER PRESENTATION: MATHEMATICS IN EARLY CHILDHOOD EDUCATION

Chair
Laurie Delnoij, Open University, Netherlands

The relation between Structural Quality and Math Talk in Early Childhood Education
Johanna Kleemann, Otto-Friedrich-Universität Bamberg, Germany; Simone Lehn, Otto-Friedrich-Universität Bamberg, Germany; Anja Linberg, German Youth Institute, Germany; Dorothea Dornheim, Otto-Friedrich-Universität Bamberg, Germany; Nadine Besser, Otto-Friedrich-Universität Bamberg, Germany; Franka Baron, German Youth Institute, Germany

Early numerical knowledge, its relation to language skills and the importance of social disparities
Nadine Besser, Otto-Friedrich-Universität Bamberg, Germany; Dorothea Dornheim, Otto-Friedrich-Universität Bamberg, Germany; Simone Lehn, German Youth Institute, Germany; Anja Linberg, Otto-Friedrich-Universität Bamberg, Germany

Finger patterns and cardinality
Josefou Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain

Cognitive correlates of early math abilities and finger gnosia
Josefou Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain

Is there any differences between the recognition and production of finger numeral representations?
Rosario Sánchez, University of Salamanca, Spain; Josefou Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Laura Matilla, University of Salamanca, Spain

The association of cardinal finger patterns and quantity-number concepts in early childhood
Roberta Barrocas, Leibniz Institut für Wissensmedien, Germany; Stephanie Roesch, University of Tuebingen, Institute of Education, Germany; Julia Bahrmueller, Loughborough University, United Kingdom; Korbinian Moeller, Loughborough University, United Kingdom
### SYMPOSIUM: LEARNING IN THE SCHOOL PRACTICUM MENTORING AS PROFESSIONAL DEVELOPMENT FOR STUDENT & MENTOR TEACHERS

**Chair**
Claire Kuhn, University of Salzburg, Austria

**Organiser**
Gerda Hagenauer, University of Salzburg, Austria

**Discussant**
Kari Smith, Norwegian University of Science and Technology, Norway

Mentoring quality of internship in teacher education – individual and mentoring related predictors
Isabelle Grassmé, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Antje Biermann, Saarland University, Germany; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany

Learning opportunities for mentor teachers in practice-based teacher education
Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Anja Winkler, University of Teacher Education Bern, Switzerland; Daniela Freistel, Pädagogische Hochschule, Institut Forschung & Entwicklung, Bern, Switzerland

Christiane Ammann, Pädagogische Hochschule Bern, Switzerland

Why did you become a mentor teacher? A qualitative study on the motives to become a mentor teacher
Claire Kuhn, University of Salzburg, Austria; Gerda Hagenauer, University of Salzburg, Austria; Alexander Groeschner, Friedrich Schiller University Jena, Germany

### SYMPOSIUM: THE ROLE OF SELF-GENERATED VISUALIZATIONS IN STUDENT LEARNING PERFORMANCE

**Chair**
Stanislaw Schukajlow, University of Münster, Germany

**Organiser**
Emmanuel Manalo, Kyoto University, Japan

**Discussant**
Peggy Van Meter, The Pennsylvania State University, United States

Can planning with diagrams help students think more critically about moral questions?
Emmanuel Manalo, Kyoto University, Japan; Reena Cheruvath, Birb Institute of Technology and Science, Thrissur, India; Hiroaki Ayabe, National Institute for Physiological Sciences, Aichi, Japan

Is Learning by Drawing Worth the Time and Effort?
Qian Zhang, University of Georgia, United States; Logan Fiorella, University of Georgia, United States

Effects of strategy-based motivation on the quality of drawings and performance in mathematics
Stanislaw Schukajlow, University of Münster, Germany; Johanna Reitensmann, University of Münster, Germany; Judith Blomberg, University of Münster, Germany; Claudia Leopold, University of Fribourg, Switzerland

### SYMPOSIUM: LEVERAGING SRL RESEARCH INTO INTELLIGENT LEARNING TECHNOLOGIES

**Chair**
Sanna Järvelä, University of Oulu, Finland

**Organisers**
Sanna Järvelä, University of Oulu, Finland; Inge Molenaar, Radboud University Nijmegen, Netherlands

**Discussant**
Arthur Graesser, University of Memphis, United States

Multimodal Data Analysis of Student’s own Regulation Activities to Advance Personalized Scaffolds
Maria Bannert, Technical University of Munich (TUM), Germany; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Gilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, Monash University, Australia; Dragan Gasevic, Monash University, Australia

Uses and applications of AI to investigate Emotions and Self-Regulated Learning in Medicine
Susanne Lapte, McGill University, Canada; Shan Li, McGill University, Canada; Juan Zheng, McGill University, Canada; Aleksandra Ruiz-Segura, McGill University, Canada

Predicting regulatory patterns for socially shared regulation to optimize collaborative learning
Sanna Järvelä, University of Oulu, Finland; Andy Nguyen, University of Oulu, Finland

Towards Hybrid Human-AI Regulation: Supporting Young learners’ Self-regulated Learning
Inge Molenaar, Radboud University Nijmegen, Netherlands
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<td><strong>SYMPOSIUM: GRADE RETENTION EFFECTIVENESS RESEARCH IN EUROPE: STATE OF THE ART</strong></td>
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<td>Jannick Demanet, Ghent University, Belgium</td>
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<td><strong>Discussant</strong></td>
<td>Mieke Goos, UCLL, Belgium</td>
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<td><strong>Effects of retention in grade 5-6 on Portuguese students’ psychosocial development in middle school</strong></td>
<td>Joana Piga, ISPA - Instituto Universitário / CIE-ISPA (Research Center in Education), Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; João Daniel, ISPA - Instituto Universitário, Portugal</td>
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<td><strong>Effects of retention in grade 7 on multiple socioemotional outcomes among German repeaters</strong></td>
<td>Paul Fabian, CENTER FOR RESEARCH ON EDUCATION AND SCHOOL DEVELOPMENT, Germany; Katja Scharenberg, University of Education Freiburg, Germany</td>
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<td><strong>Long-term effects of retention in grade 8 in Luxembourg</strong></td>
<td>Florian Klapproth, Medical School Berlin, Germany;Ulrich Keller, University of Luxembourg, Luxembourg; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg</td>
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<td><strong>Does retention in grades 1-9 produce cynical citizens? A cross-national multilevel analysis</strong></td>
<td>Timo Van Canegem, Ghent University (Department of Sociology), Belgium; Mieke Van Houte, UGENT, Belgium; Jannick Demanet, UGENT, Belgium</td>
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<td><strong>SYMPOSIUM: USING EDUCATIONAL TECHNOLOGY TO SCAFFOLD STUDENTS’ ACADEMIC WRITING</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Andreas Lachner, University of Tübingen, Germany</td>
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<td><strong>Organiser</strong></td>
<td>Sabine Wagner, University of Tübingen, Germany</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Rod Roscoe, Arizona State University, United States</td>
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<tr>
<td><strong>Where to Next? Mapping the Landscape of Research on Computer-Based Feedback on Writing</strong></td>
<td>Sabine Wagner, University of Tübingen, Germany; Jürgen Schneider, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany</td>
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<tr>
<td><strong>Automated Writing Evaluation System and its Effects on Students’ Writing: A Systematic Review</strong></td>
<td>Andrea Nunes, University of Porto, Portugal; Teresa Limpio, University of Porto, Portugal; São Luís Castro, University of Porto, Portugal</td>
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<td><strong>Writing process feedback based on keystroke logging data and exemplars</strong></td>
<td>Nina Vandermeulen, Umeå University, Sweden; Elke Van Steenendam, University of Leuven, Belgium; Gert Rijlaarsdam, University of Amsterdam, Netherlands</td>
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<th>Session U: 13</th>
<th>Time: 17:30-18:30</th>
<th>Location: Session Room 12</th>
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<tbody>
<tr>
<td><strong>SYMPOSIUM: EXPERIENCE SAMPLING AND THE DYNAMICS OF STUDENTS’ MOTIVATION AND ENGAGEMENT.</strong></td>
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<td><strong>Chair</strong></td>
<td>Hanke Kopershoek, University of Groningen, Netherlands</td>
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<td><strong>Organiser</strong></td>
<td>Elisa Kupers, University of Groningen, Netherlands</td>
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<td><strong>Discussant</strong></td>
<td>Mayra Mascareño Lara, University of Groningen, Netherlands</td>
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<tr>
<td><strong>Momentary engagement profiles among upper secondary school students</strong></td>
<td>Jussi Järvinen, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland</td>
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<tr>
<td><strong>Differential Trajectories of Intrinsic Motivation and Basic Psychological Need Satisfaction</strong></td>
<td>Judith Loops, University of Groningen, Netherlands; Elisa Kupers, University of Groningen, Netherlands; Anke de Boer, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands</td>
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<tr>
<td><strong>Lesson-to-lesson links between teacher self-efficacy need-supportive teaching and student motivation</strong></td>
<td>Elisa Kupers, University of Groningen, Netherlands; Judith Loops, University of Groningen, Netherlands; Anke de Boer, University of Groningen, Netherlands; Alanne Bakker, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands</td>
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<td><strong>Student-perceived teachers’ enthusiasm and humor related to students’ enjoyment and boredom</strong></td>
<td>Sonja Bieg, Paedagogische Hochschule Weingarten, Germany; Ulrike Nett, Augsburg University, Germany</td>
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</table>
### Session U: 14  
**Time:** 17:30-18:30  
**Location:** Session Room 11  

#### INVITED SYMPOSIUM: EFG: EDUCATIONAL NEUROSCIENCE: A JOURNEY FROM THE LAB TO THE REAL-WORLD, AND BACK...  

<table>
<thead>
<tr>
<th>Chair</th>
<th>Oppunities and limitations of mobile neuroimaging technologies in educational neuroscience</th>
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<tbody>
<tr>
<td>Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands</td>
<td>Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands</td>
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<tr>
<td>Discussant</td>
<td>Cycling to and fro: Using mobile EEG to study cognition and brain activity during biking</td>
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<td>Ido Davideco, University of Connecticut, United States</td>
<td>Kyle Mathewson, University of Alberta, Canada</td>
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<td>Engineering light to monitor brain oxygenation and hemodynamics in naturalistic environments</td>
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<td>Paula Pinti, Birkbeck College, University of London, United Kingdom</td>
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### Session V: 1  
**Time:** 18:45-19:45  
**Location:** Session Room 13  

#### SINGLE PAPER: WORKPLACE LEARNING  

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<tr>
<th>Chair</th>
<th>Work-Oriented Project Learning in Vocational Education</th>
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<tr>
<td>Inge Van der weijden, Leiden University, Netherlands</td>
<td>Marjaana Kangas, University of Lapland, Finland; Solja Uopola, Lapland Education Centre Redu, Finland</td>
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<td>Competence development of a student teacher already working as a teacher</td>
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<td>Jiri Vippola, Tampere University of Applied Sciences, Finland; Raija Hamalainen, University of Jyväskylä, Finland; Katja Vähäsantanen, University of Jyväskylä, Finland; Petri Salo, University of Vaasa, Finland</td>
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<td>Shaping the futures of higher education through international academic networks</td>
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<td>Mónica Feixas, Zurich University of Teacher Education, Switzerland; Barbara Class, University of Geneva, Switzerland; Samir Boulou, Zurich University of Teacher Education, Switzerland</td>
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</table>

### Session V: 2  
**Time:** 18:45-19:45  
**Location:** Session Room 17  

#### SINGLE PAPER: EDUCATIONAL TECHNOLOGY IN MATHEMATICS AND NUMERACY  

<table>
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<tr>
<th>Chair</th>
<th>Examining the development of adaptive number knowledge through game performance measures</th>
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<tbody>
<tr>
<td>Crina Damsa, University of Oslo, Norway</td>
<td>Jake McMullen, University of Turku, Finland; Boglárka Boglárka, University of Turku, Hungary; Minna M Hannula-Sormunen, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland</td>
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<td></td>
<td>The Role of the Situational Interest in Game-Based Learning</td>
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<td>Antti Koistinen, University of Tampere, Finland, Finland; Jake McMullen, University of Turku, Finland; Hilma Halme, University of Turku, Finland; Kristian Kii, Tampere University, Finland</td>
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<tr>
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<td>Effectiveness of an adaptive digital game for the training of early numerical abilities</td>
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<td>Stefanie Vanbocelaere, KU Leuven, Belgium; Frederik Garnkile, KU LEUVEN, Belgium; Bert Reyvoet, KU LEUVEN, Belgium; Delphine Sasangue, KU Leuven, Centre for Instructional Psychology and -Technology (Vesaliusstraat 2, 3000 Leuven), Belgium; Fien Depaes, KU Leuven, Belgium</td>
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### Session V: 3  
**Time:** 18:45-19:45  
**Location:** Session Room 3  

#### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN MATHEMATICS  

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<tr>
<th>Chair</th>
<th>Construction and validation of a test to measure students’ proportional reasoning in Mathematics</th>
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<tr>
<td>Ari Tuhkala, University of Jyväskylä, Finland</td>
<td>Ruth Wafula, University of Szeged, Hungary</td>
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<td>Validity of a mathematics test for the selection of university applicants for teacher training</td>
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<td>Robin Göller, Leuphana University Lueneburg, Germany; Michael Besser, Leuphana Universität Lueneburg, Germany; Larissa Alterburger, Leuphana University of Lüneburg, Germany; Natalie Tropper, Georg-Christoph-Lichtenberg-Schule Kassel, Germany; Maye Hagen, University of Hamburg, Germany</td>
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<td>‘Finally studying for myself!’ Examining agency in summative and formative self-assessment models</td>
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<td>Jusso Henrik Nieminen, University of Eastern Finland, Finland; Laura Tuohilampi, UNSW, Australia</td>
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</table>
### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION

**Chair**
Jeff Bomund, George Mason University, United States

- **Comparing ways to conceptualize person-environment fit in higher education**
  Carla Bohndiek, University of Hamburg, Germany; Jonas Brezetke, University of Hamburg, Germany; Tom Rosman, ZPID Leibniz Institute for Psychology Information, Germany

- **Designing an Online Self-assessment for Informed Study Decisions: The User Perspective**
  Laurie Delnoij, Open University, Netherlands; Jos Janssen, Open University of the Netherlands, Netherlands; Kim Dirkx, Open University, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands

- **The Resilience Journal: Fostering Resilience at the University through a Diary Intervention**
  Max S. Lohner, University of Mannheim, Germany; Carmela Aprea, University of Mannheim, Germany

### SINGLE PAPER: META-ANALYSIS AND MOTIVATION

**Chair**
Julia Eberle, Ruhr-Universität Bochum, Germany

- **Do Achievement Goals for Teaching Matter and if so, How Much? A meta-analytic review**
  Ruth Butler, Hebrew University of Jerusalem, Israel; Martin Damiller, University of Augsburg, Germany; Raven Rinas, Augsburg University, Germany

- **Effects of Computer-Based Feedback on Learning and Motivation: A Network Meta-Analysis**
  Ute Mortens, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Bridgid Finn, ETS, United States; Marlis Annalena Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany

- **Effectiveness of interventions that foster reading motivation: A meta-analysis**
  Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands; Suzanne Fikrat-Wovers, Erasmus MC, Netherlands; Arends Lidia, Erasmus University Rotterdam, Netherlands

### SINGLE PAPER: MOTIVATION AND STUDENT LEARNING

**Chair**
Elizabeth Olivier, Université de Montréal, Canada

- **The Relations between Teacher Interest, Instructional Quality, and Student Motivation**
  Marthe Claire Fromme, University of Potsdam, Germany; Ulrich Schiefele, University of Potsdam, Germany

- **Do Teachers’ Competence Beliefs Matter for Students’ Academic Outcomes?**
  Inga ten Hagen, TU Dortmund University, Germany; Fani Lauermann, TU Dortmund University, Germany; Jacquelyynne S. Eccles, UC-Irvine, United States

### SINGLE PAPER: SCIENCE EDUCATION

**Chair**
Qiyun Zhu, Guangdong University of Foreign Studies, China

- **Are students invited into socioscientific discussion? A discourse analysis of science textbooks**
  Ka Lok Cheng, The University of Hong Kong, Hong Kong

- **Scientists’ emotions in children’s drawings**
  Vassilia Christidou, Aristotle University of Thessaloniki, Greece; Fotini Bonoti, University of Thessaly, Greece; Vassilia Hatzimikita, Hellenic Open University, Greece

- **Learning and expertise with scientific external representations: a 4E cognition model**
  Prajakt Pande, Roskilde University, Denmark
### Session V: 8 | Time: 18:45-19:45 | Location: Session Room 2

#### SINGLE PAPER: SELF-REGULATION

**Chair**
Debra Myhill, University of Exeter, United Kingdom

**Primary school students’ academic help-seeking and helping: an intraindividual study**
Kyle Davison, University of Oxford, United Kingdom; Kathy Sylva, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom

**The relation between self-regulation and cognition of pre-school children: a longitudinal study**
Sina Faciler, Leibniz-Institute for Educational Trajectories (LIfBi), Germany; Lars-Erik Malmberg, University of Oxford, United Kingdom; Alexander Baron, E.L. Haynes Public Charter School, United States; Kate Mee, University of Bath, United Kingdom

**Associations Between Children’s Self-Regulation and Their Approaches to Learning across Preschool**
Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Portugal; Marina Lemos, University of Porto, Portugal; Joana Cadima, University of Porto, Portugal

### Session V: 9 | Time: 18:45-19:45 | Location: Session Room 4

#### SINGLE PAPER: TEACHING AND TEACHER EDUCATION

**Chair**
Michael Goller, Friedrich Schiller University Jena, Germany

**How effective are coaching and mentoring for student teachers’ instructional skills? A meta-analysis**
Sog Yee Mok, University of Zurich, Switzerland; Fritz C. Staub, University of Zurich, Switzerland

**Simulation Games in Teacher Education: Fostering Reflection and Belief Change on Inclusion**
Katja Adi-Amiri, TU Darmstadt, Germany; Maria Theresia Messner, Goethe-University Frankfurt, Germany; Ilona Hardy, Goethe-Universität Frankfurt, Germany

**New approach to teachers’ intercultural competencies: implicit theories of malleability**
Inkeri Rissanen, Tampere University, Finland; Elina Kuusisto, Tampere University, Finland

### Session V: 10 | Time: 18:45-19:45 | Location: Session Room 16

#### SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION

**Chair**
Erika Schillert, Radboud University, Netherlands

**Mentors and their professional vision of inclusive classrooms: Do they reach the expert norm?**
Ine Ophalvens, Ghent university, Belgium; Karolien Koppens, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium; Ruben Vanderlinden, Ghent University, Belgium

**Student Teachers’ Beliefs about the Role of Teachers: A Person-Centered Approach**
Daniel Mann, University of Bamberg (Otto-Friedrich-Universität Bamberg), Germany; Jennifer Paetsch, University of Bamberg, Germany; Donata Perauk, Otto-Friedrich-University of Bamberg, Germany; Barbara Drechsel, University of Bamberg, Germany

**Domain-specific mindsets of German student teachers**
Katharina Hipert, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Janina Roloff-Buchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karin Guili, Leibniz Institute for Science and Mathematics Education, Germany; Uta Kusmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

### Session V: 11 | Time: 18:45-19:45 | Location: Session Room 10

#### SINGLE PAPER: ATTITUDES AND BELIEFS

**Chair**
Adrian Lundberg, Malmö University, Sweden

**Design and evaluation of a scale measuring the protective factors of teachers’ resilience**
Athena Danilidou, University of Macedonia, Greece; Maria Platsidou, University of Macedonia, Greece

**Higher education students’ life purposes in The Netherlands and Finland**
Elina Kuusisto, Tampere University, Finland; Isolde De Groot, University of Humanistic Studies, Netherlands; Doret de Ruyter, University of Humanistic Studies, Netherlands; Ingheid Schutte, Hanzehogeschool Groningen University of Applied Sciences, Netherlands; Inkeri Rissanen, Tampere University, Finland; Päivi Vartianen, Tampere University of Applied Sciences, Finland

**Examining stakeholders’ representations on the exploitation of educational Socially Assistive Robots**
Panagiotis Christodoulou, University of Western Macedonia, Greece; Dimitris Pneumatikos, University of Western Macedonia, Greece
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<th>Session V: 12</th>
<th>Time: 18:45-19:45</th>
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<tr>
<td><strong>SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND HIGHER EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Fabian Wolff, Universität Koblenz-Landau, Germany</td>
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<td><strong>University teachers’ enactment of feedback literacy during peer mentoring meetings</strong></td>
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<td>Rachelle Esterhazy, University of Oslo, Norway; Crina Damsa, University of Oslo, Norway; Thomas de Lange, University of Oslo, Norway</td>
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<td><strong>Unpacking effective mentorship practices in distance learning: a mixed method study</strong></td>
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<td>Bart Rienjes, Open University, United Kingdom; Julia Sargent, Open University, United Kingdom</td>
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<td><strong>Collective meaning-making in teacher educators’ talk about academic writing instruction</strong></td>
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<td>Ingunn Offe, Norwegian University of Science and Technology (NTNU), Norway</td>
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<tr>
<td><strong>SINGLE PAPER: TEACHING, INSTRUCTION AND LEARNING TECHNOLOGIES</strong></td>
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<td><strong>Chair</strong></td>
<td>Martin Gartmeier, Technical University of Munich (TUM), Germany</td>
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<td><strong>Humanistic KB Community— Aspects of Teaching Practices of Educators in Future Learning Spaces</strong></td>
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<td>Yael Yordi, Kibbutzim College of Education, Technology and Art, Israel; Dovi Weiss, Kibbutzim College of Education, Technology and the Arts, Israel</td>
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<td><strong>What teachers think and do: adaptive teaching in blended classrooms</strong></td>
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<td>Ina Cijvat, Radboud University, Netherlands; Eddie Denessen, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Peter Sleeegers, BMC Group, Netherlands</td>
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<td><strong>The Importance of HOW, WHY, and WHAT: Learnings from Setting up an Online Course Overnight</strong></td>
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<td>Alessia Ruf, School of Applied Psychology, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Anna-Lena Roos, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Livia Müller, University of Basel, Switzerland; Judith Müller, University of Basel, Switzerland; Klaus Opwis, University of Basel, Switzerland</td>
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<tr>
<td><strong>SINGLE PAPER: EDUCATIONAL TECHNOLOGY</strong></td>
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<td><strong>Chair</strong></td>
<td>Henrik Bellhäuser, Johannes Gutenberg-University Mainz, Germany</td>
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<td><strong>Student teachers and task-related self-efficacy for using digital technologies</strong></td>
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<td>Ove Edvard Hatlevik, Oslo and Akershus University College of Applied Sciences, Norway; Louise Mifsud, OsloMet – Oslo Metropolitan University, Norway; Tonje Giaever, OsloMet – Oslo Metropolitan University, Norway; Bård Ketil Engen, OsloMet – Oslo Metropolitan University, Norway; Greta Gudmundsdottir, University of Oslo, Norway; Anusha Rohtagi, University of Oslo, Norway</td>
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<td><strong>This Mentor Shapes “U”: Change of Preservice Teachers’ ICT Self-Efficacy During a Teaching Practicum</strong></td>
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<td>Matthias Dethle, Friedrich-Schiller-University Jena, Germany; Alexander Grosschner, Friedrich Schiller University Jena, Germany</td>
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<td><strong>Developing preservice teachers’ digital competencies: Building blocks for an online/blended future</strong></td>
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<td>Jo Tondeur, Vrije Universiteit Brussel, Belgium; Sarah Howard, University of Wollongong, Australia</td>
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</table>
**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND MOTIVATION**

**Chair**
Ganze Görel, Paderborn University, Germany

**Mindset profiles of high school students: More complex than a growth or a fixed mindset**
Sibel Atlikul, Vrije Universiteit Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Smiddy Nieuwenhuis, VU University Amsterdam, Netherlands; Nienke van Attevelde, Vrije Universiteit Amsterdam, Netherlands

**The role of relatedness in online courses during social distancing**
Ayse Baru Alp, Christ, Institute of Education, University of Zurich, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland; Carmen Kühler, DIPF | Leibniz Institute for Research and Information in Education, Germany, Germany; Jana Heßling, Institute of Education, University of Zurich, Switzerland; Anna-Katharina Pradelkus, Institut für Erziehungswissenschaft, Switzerland

**Connections between temperament, perfectionism, and well-being at school**
Anna Rawlings, University of Helsinki, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Turku, Finland; Markku Niemivirta, University of Eastern Finland, Finland

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**SINGLE PAPER: SELF-EFFICACY IN TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**
Azizul Ghofran Wicaksono, University of Szeged, Doctoral School of Education, Hungary

**Self-regulation and self-efficacy as resources for teachers to prevent strain and foster motivation**
Christine Wolfgramm, University of Teacher Education Zurich, Switzerland; Zippora Bühner, Pädagogische Hochschule Zürich, Switzerland; Simone Berweger, Zürcher University of Teacher Education, Switzerland; Andrea Kerk Frei, Zürich University of Teacher Education, Switzerland

**Sources of primary school teachers’ self-efficacy to teach in inclusive classrooms**
Katja Franzen, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany

**The Promotion of Pre-Service Teachers’ Team-Teaching Competencies for Inclusive Education**
Frank Hellmich, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Fabian Hoya, Paderborn University, Germany

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**INVITED SYMPOSIUM: SIG 17: TIDYING THE TOOLBOX: TRIALS, TRIBULATIONS AND TRIUMPHS IN RESEARCH ON LEARNING AND EDUCATION**

**Chair**
Dominik E. Froehlich, University of Vienna, Austria

**Organiser**
Marc Sarazin, University of Edinburgh, United Kingdom

**Discussant**
Jasperina Brouwer, University of Groningen, Netherlands

**Lessons Learnt From Research in Learning Transfer Around Participant Mortality**
Alicia Gonzalez Ortiz de Zarate, Udista (Madrid Open University), Spain; Carla Quisadela Párraras, Universitat Autònoma de Barcelona, Spain

**Mixing theories and its implications for mixing methods**
Victoria Murphy, Open University, United Kingdom; Dobbie Vermond, University Medical Center Utrecht, Netherlands; Esther de Groot, UMC Utrecht, Netherlands

**Embracing experimentation: a pragmatist approach to participant engagement in mixed methods studies**
Marc Sarazin, University of Edinburgh, United Kingdom
### Session W: 1

**INVITED SYMPOSIUM: SIG 21: BEYOND THE PANDEMIC: SHAPING FUTURES IN (EVEN MORE?) DIVERSE EDUCATIONAL SETTINGS**

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<th>Chair</th>
<th>Face(ing) learning: who am I learning with?</th>
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<tbody>
<tr>
<td>Sylvi Vigmo, University of Gothenburg, Sweden</td>
<td>Natalia Durus, Luxembourg multi-LEARN Institute asbl, Luxembourg</td>
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<tr>
<th>Organiser</th>
<th>Changing learning and development in organizations from past-focused to future-focused</th>
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<tbody>
<tr>
<td>Becky Bergman, Chalmers University of Technology, Sweden</td>
<td>Natalia Durus, Luxembourg multi-LEARN Institute asbl, Luxembourg; Florian Feltes, XU Exponential University, Germany</td>
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<tr>
<th>Discussant</th>
<th>From survival mode to conceptualising a/the « new normal » in educational settings</th>
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<tr>
<td>Charles Max, University of Luxembourg, Luxembourg</td>
<td>Gudrun Ziegler, Luxembourg multi-LEARN Institute, France</td>
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### Session W: 2

**INVITED SYMPOSIUM: EFG: LEARNER-CENTERED PROCESSES IN FEEDBACK ACROSS CONTEXTS: THEORETICAL AND EMPIRICAL FINDINGS**

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<th>Chairs</th>
<th>How do learners process and use feedback? A systematic review of research using online measures</th>
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<tr>
<td>Anastasiya Lipnevich, The Graduate Center of the City University of New York, United States; Naomi Winstone, University of Surrey, United Kingdom</td>
<td>Florence Van Meenen, UCL Louvain, Belgium; Nicolas Masson, Université catholique de Louvain (UCL), Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium</td>
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| Effects of error tolerance, feedback tolerance, and perceived expertise on peer feedback processing | Jochem Alen, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Mayra Mascareño Lara, University of Groningen, Netherlands; Fliitta Dingybludi, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands |

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<tr>
<th>Discussant</th>
<th>The eye-of-mind in feedback processing: Unravelling how students read and use feedback for revision</th>
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<tr>
<td>Robert Nash, Aston University, United Kingdom</td>
<td>Renate Bouwer, Utrecht University, Netherlands; Kim Dirkx, Open University, Netherlands</td>
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</table>

| Says Who?: Credibility Effects in Self-verification Strivings | Ewa Szuromska, Jagiellonian University, Poland; Natalia Wójcik, Jagiellonian University, Poland; Paulina Szved, Jagiellonian University, Poland; Arie Kruglanski, University of Maryland, United States |

### Session W: 3

**INVITED SYMPOSIUM: SIG 6: THE IMPACT OF DIFFERENT EDUCATIONAL TECHNOLOGY DESIGNS ON LEARNING IN WORK-RELATED CONTEXTS**

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<tr>
<th>Chair</th>
<th>The effect of signaling feedback in learning forest ecosystems in Immersive Virtual Reality</th>
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<tbody>
<tr>
<td>Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland</td>
<td>Jean-Michel Boucheix, University of Dijon; LEAD-CNRS, France; Porte Laurie, Lead - CNRS / Université de Bourgogne, France; Louis Rapel, Arts et Métiers, Institute of Technology, LISPE, HESAM, University of Bourgogne Franche-Comté, Chalon sur Saône, France; Benoit Haigre, LEAD-CNRS, University of Bourgogne Franche-Comté, Dijon, France; Jean-Luc Martinez, Arts et Métiers, Institute of Technology, LISPE, HESAM, University of Bourgogne Franche-Comté, Chalon sur Saône, France</td>
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<thead>
<tr>
<th>Organisers</th>
<th>Garden design in virtual reality for apprentice gardeners in vocational education</th>
</tr>
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<tbody>
<tr>
<td>Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland</td>
<td>Kevin Gonyo Kim, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Martin Dobrck, PHBern, Switzerland; Richard Lee Davis, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Pierre Dillenbourg, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</td>
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<tr>
<th>Discussant</th>
<th>Integrative design and development of a digital game and game-based learning in financial education</th>
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<tbody>
<tr>
<td>Etti Ryymä, Hämäläinen University of Applied Sciences, Finland</td>
<td>Carmela Aprea, University of Mannheim, Germany; Julia Schultheis, University of Mannheim, Germany</td>
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</table>

| Teachers’ experiences of designing for digital learning across boundaries in vocational education | Ann-Britt Enochsson, Karlstad University, Sweden; Nina Kilbrink, Karlstad University, Sweden; Annelie Andersen, Department of Educational Studies, Karlstad University, Sweden; Annica Ådelsor, Karlstad University, Sweden |

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**FRIDAY, 27 AUGUST 2021**
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<td><strong>SYMPOSIUM: TEACHER EXPECTATION STABILITY AND MODERATORS OF TEACHER EXPECTATION EFFECTS</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Ineke Pit-ten Cate, University of Luxembourg, Luxembourg</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Anneke Timmermans, University of Groningen, Netherlands</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Ineke Pit-ten Cate, University of Luxembourg, Luxembourg</td>
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<tr>
<td><strong>The stability and trajectories of teacher expectations in Chinese junior high schools</strong></td>
<td>Shengnan Wang, The University of Auckland, New Zealand; Christine Rubie-Davies, University of Auckland, New Zealand; Kane Meissel, University of Auckland, New Zealand</td>
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<tr>
<td><strong>Adjusting expectations or maintaining first impressions? The stability of teachers’ expectations</strong></td>
<td>Anneke Timmermans, University of Groningen, Netherlands; Christine Rubie-Davies, University of Auckland, New Zealand; Shengnan Wang, The University of Auckland, New Zealand</td>
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<td><strong>Gender and minority status as moderators of teacher expectation effects</strong></td>
<td>Christine Rubie-Davies, University of Auckland, New Zealand; Anneke Timmermans, University of Groningen, Netherlands</td>
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<td><strong>Why do females prefer humanities, while males choose to study technology?</strong></td>
<td>Sławomir Truszczyński, Pedagogical University of Cracow, Poland</td>
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<td><strong>SINGLE PAPER: ACHIEVEMENT AND MOTIVATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Peter Edelsonbrunner, ETH Zurich, Switzerland</td>
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<td><strong>Learning activities as mediators between teaching quality and student outcomes: A systematic review</strong></td>
<td>Ayseuner Alp-Christ, Institute of Education, University of Zurich, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland</td>
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<tr>
<td><strong>Cognitive and Affective-Motivational Effects of Computer-Based Knowledge of Results Feedback</strong></td>
<td>Lixia Kuklick, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Marlite A. Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany</td>
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<td><strong>East meets West: Teaching motivation, instructional quality and academic achievers</strong></td>
<td>XIN LIU, Ghent University, Belgium; Ming Tang, Ghent University / Sichuan Normal University, Belgium</td>
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<td><strong>SINGLE PAPER: WRITING IN SECONDARY EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Tuulikki Iskala, University of Turku, Finland</td>
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<td><strong>The Effects of a Reading-to-Write Instruction in History</strong></td>
<td>Johan van Driel, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands</td>
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<td><strong>Writing in Civic Education at lower secondary school: The Effects of an intervention?</strong></td>
<td>Claudia Forkarth, Universität Duisburg-Essen, Germany</td>
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<td><strong>Synthesis writing in Science Orientation classes, a design study</strong></td>
<td>Edith Akama, RICDE / University of Amsterdam, Netherlands; Gert Rijlaarsdam, University of Amsterdam, Netherlands; Daphne van Weijen, University of Amsterdam, Netherlands</td>
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<td><strong>SINGLE PAPER: SELF-REGULATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Sarah Howard, University of Wollongong, Australia</td>
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<td><strong>Exposing Cues for Cognitive Load Monitoring in Problem Solving</strong></td>
<td>Yael Sidi, the Open University of Israel, Israel; Rakefet Ackerman, Technion - Israel Institute of Technology, Israel</td>
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<td><strong>Effects of Video Modeling and Metacognitive Prompts on Scientific Reasoning and Self-Regulation</strong></td>
<td>Yoana O showcasing, Leibniz-Institut für Wissensmedien, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Schieffer, Leibniz-Institut für Wissensmedien, Germany</td>
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<td><strong>Homogeneous Problem Perception, Immediacy and Intensity of Strategy Use in Online CSCL</strong></td>
<td>Laura Spang, University of Augsburg, Germany; Martin Greis, University of Augsburg, Germany; Markus Dressel, University of Augsburg, Germany; Ingo Koll, University of Augsburg, Germany</td>
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## Session W: 8
**Time: 09:00-10:00**
**Location: Session Room 13**

### SINGLE PAPER: COOPERATIVE AND COLLABORATIVE LEARNING

**Chair**
Karolina Doulougeri, Eindhoven School of Education, Netherlands

**Development and validation of the Collaborative Skills Questionnaire**
Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Anita Pásztor-Kovács, Institute of Education University of Szeged, Hungary; Gyöngyver Molnár, University of Szeged, Hungary

**Peer review in online HE: does the group size influence students’ participation and performance?**
Anna Serbati, University of Padova, Italy; Valentina Girón, University of Padova, Italy; Lan Li, Bowling Green State University, United States

**Exploring group-based learning assessment’s construct and consequential validity in higher education**
Hajo Meijer, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Rink Hoekstra, University of Groningen, Netherlands

## Session W: 9
**Time: 09:00-10:00**
**Location: Session Room 16**

### SINGLE PAPER: EDUCATIONAL AND LEARNING TECHNOLOGIES

**Chair**
Ingrid Engeness, Ostfold University College, Norway

**Effects of digital media on learning in higher education: A systematic review of meta-analyses**
Sonja Berger, Ludwig Maximilians-Universität (LMU), Germany; Karsten Stegmann, Ludwig Maximilians-Universität (LMU), Germany; Tamara Kastorf, Ludwig Maximilians-Universität (LMU), Germany; Michael Saler, LMU Munich, Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany

**The Use of Educational Technology in Early Mathematics Education and its Associated Factors**
Sandy Verbrugge, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Joke Torbye, KU Leuven, Belgium

**Speech-to-Text and the Struggling Writer: Effects on Learning a New Writing Strategy**
Katrina Haug, Western University, Canada; Perry Klein, The University of Western Ontario, Canada

## Session W: 10
**Time: 09:00-10:00**
**Location: Session Room 18**

### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND MOTIVATION

**Chair**
Scarlett Madelaine Kobs, Humboldt Universität zu Berlin, Germany

**Teachers’ communicative style: The role of autonomy, competence and relatedness**
Samuel Falcon, University of Las Palmas de Gran Canaria, Spain; 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; Juan Francisco Loro, University of Las Palmas de Gran Canaria, Spain; Jaime Leon, University of Las Palmas de Gran Canaria, Spain

**Do motivational messages predict motivation to learn and performance?**
Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Dave Putwain, Liverpool John Moores University, United Kingdom; Juan L. Núñez, University of Las Palmas de Gran Canaria - Faculty of Educational Sciences, Spain; Juan Francisco Loro Ferrer, University of Las Palmas de Gran Canaria, Spain; Jaime Leon, University of Las Palmas de Gran Canaria, Spain

**Teacher Classroom Management Self-Efficacy: Relations to Perceived Teaching Behaviors and Enjoyment**
Katharina Hettinger, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany; Ullrich Schiefele, University of Potsdam, Germany

## Session W: 11
**Time: 09:00-10:00**
**Location: Session Room 15**

### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND TEACHING APPROACHES

**Chair**
Mandy Hommel, OTH Amberg-Weiden, Germany

**Transformation of practices into dialogic teaching: towards a dialogic notion of teacher learning**
Valentina Guzmán, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile

**A follow-up study on university teachers’ visual and verbal processing of classroom situations**
Henna Vlppu, University of Turku, Finland; Erkki Anto, University of Turku, Finland; Mari Murtonen, University of Turku, Finland

**Teachers’ regulation, learning patterns and teaching approaches: Does pedagogical training matter?**
Tahani Alhadhoud, Tampere University, Finland; Mari Murtonen, University of Turku, Finland; Trang Nguyen, University of Turku / Faculty of Education, Finland; Jere Riekkinen, Tampereen yliopisto, Finland; Henna Vlppu, University of Turku, Finland; Jan Vermunt, Eindhoven University of Technology, Netherlands
### Session W: 12
**Time:** 09:00-10:00  |  **Location:** Session Room 2

**SINGLE PAPER: METACOGNITION AND SELF-REGULATION**

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<tbody>
<tr>
<td>Frank Hellmich, Paderborn University, Germany</td>
<td>How individual learner characteristics are (not) related to students' adoption of shared regulation</td>
<td>Liesje De Backer, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Martin Valcke, Ghent University, Belgium</td>
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<td>Individual Performance Feedback: Does It Increase the Use of Retrieval Practice?</td>
<td>Luci Hui, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Donkers, Maastricht University, Netherlands</td>
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<td>Metacognitive illusion or self-regulated learning? Learning strategies in engineering education</td>
<td>Maria Cervin-Ellqvist, Chalmers University of Technology, Sweden; Daniel Larsson, Chalmers University of Technology, Sweden; Tom Adawi, Chalmers University of Technology, Sweden; Christian Stöhr, Chalmers University of Technology, Sweden; Raffaella Negrotti, Chalmers University of Technology, Sweden</td>
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### Session W: 13
**Time:** 09:00-10:00  |  **Location:** Session Room 3

**SINGLE PAPER: INTERDISCIPLINARY, MIXED-METHOD RESEARCH**

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<td>Clara Schumacher, Humboldt Universität zu Berlin, Germany</td>
<td>Extending phenomenographic analysis by using Q methodological approach – a theoretical contribution</td>
<td>Monika Holmgren, Malmö University, Sweden; Adrian Lundberg, Malmö University, Sweden</td>
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<td>When to co-create education with students? Comparing different moments of co-creation</td>
<td>Tanguy Dewaele, Maastricht University, Netherlands; Stephanie Meeuwissen, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands; Marjolijn Vermeulen, Heerlen Open Universiteit, Netherlands; Karen Körnigs, Maastricht University, Netherlands</td>
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<td></td>
<td>The Impact of Technology on Work Characteristics and Professional Development</td>
<td>Patrick Beer, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany</td>
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### Session W: 14
**Time:** 09:00-10:00  |  **Location:** Session Room 4

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND INSTRUCTION**

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<tr>
<td>Leila Ferguson, Kristiansand University College, Norway</td>
<td>Towards a future vocational profession: Longitudinal orientations in vocational teaching practices</td>
<td>Stig Börje Asplund, Karlstad University, Sweden; Nina Klubrik, Karlstad University, Sweden; Hamid Aghari, Karlstad University, Sweden; Minna Viljamaa, Karlstad University, Sweden</td>
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<td>Supporting Teachers to Promote Cognitive Activation and Differentiation: Product or Process?</td>
<td>Charalampos Charalambous, University of Cyprus, Cyprus; Eviidi Kaski, University of Cyprus, Cyprus</td>
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<td>Digital as the new “normal” during COVID19: Implications for teachers of Swedish for immigrants</td>
<td>Sylvana Solkova Hashemi, University of Gothenburg; Halmstad University, Sweden; Nataliya Berbyuk Lindström, University of Gothenburg, Sweden</td>
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**Time:** 09:00-10:00  |  **Location:** Session Room 9

**SINGLE PAPER: ENVIRONMENTAL EDUCATION**

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<tr>
<td>Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal</td>
<td>Enchantment and student activism: Designing pedagogies to address current climate-related crises</td>
<td>Peter David Renchaw, The University of Queensland, Australia; Ron Tooth, Pullenvale Environmental Education Centre, Australia; Harriet Mortlock, Pullenvale Environmental Education Centre, Australia; Kirsty Jackson, The University of Queensland, Australia</td>
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<td>Agency formation of youth climate activists: A learning ecology perspective</td>
<td>Antti Rajala, University of Oulu, Finland; Paula Ahola, University of Eastern Finland, Finland; Sanna Rynänen, University of Eastern Finland, Finland; Anna Stenskino, CUNY Graduate Center, United States</td>
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<td>Self-education for our times</td>
<td>Jan Varpanen, University of Tampere, Finland; Antti Saari, University of Tampere, Finland</td>
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<td>Keynotes IV: 1</td>
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<td>EARLI KEYNOTE SESSION: THINKING BEYOND THE CRISES: WHAT IS A UNIVERSITY EDUCATION FOR?</td>
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<tr>
<td>Chair</td>
<td>Ake Ingerman, University of Gothenburg, Sweden</td>
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Paul Ashwin, Lancaster University, United Kingdom |
| Keynotes IV: 2 | 10:45-11:45  | Auditorium A    |
| EARLI KEYNOTE SESSION: VISION FOR EDUCATION – HOW EYE-TRACKING HELPS TO UNDERSTAND AND IMPROVE LEARNING AND INSTRUCTION |
| Chair        | Erno Lehtinen, University of Turku, Finland |
| Vision for Education – How eye-tracking helps to understand and improve learning and instruction  
Haliza Maria Jarodzka, Open University of the Netherlands, Netherlands |
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| SINGLE PAPER: METACOGNITION AND SELF-REGULATION |
| Chair        | Rimma Nyman, University of Gothenburg, Sweden |
| The Role of Achievement Emotions for Metacomprehension Judgments and Accuracy  
Anja Piruz, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany |
| Does feedback on students’ diagramming affect monitoring accuracy of their text comprehension?  
Sophia Braumann, University Utrecht, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Héctor J. Pijeira-Díaz, Maastricht University, Netherlands; Ellen Kolk, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands |
| Can the Overestimation-with-Internet-Bias be reduced by making task demands explicit?  
Björn Matthes, Technical University of Darmstadt, Germany; Stephanie Piesch, Technical University of Darmstadt, Germany |
| Session X: 2 | 12:00-13:00  | Session Room 16 |
| SINGLE PAPER: SOCIAL ASPECTS OF LEARNING AND TEACHING |
| Chair        | Juliane Ferreira, University of Tampere, Finland |
| Teenagers perception of cyberbullying in rural and urban schools. A case study in Galicia, Spain  
Angel Torres-Toukoundis, Universidad Politecnica Salesiana, Ecuador; Claudia Pardo-Ramos, Universidad de Santiago de Compostela, Spain; Mari Carmen Caldeiro-Pedreira, Universidad de Santiago de Compostela, Spain |
| Follow the Act or Consider the Consequences? Teachers’ Ethics, Self-efficacy and Job Satisfaction  
Annette-Pascale Denfeld, University of Agder, Norway; Esther Canrinus, University of Agder, Norway; Inger Marie Dalehette, University of Agder, Norway |
| How do adolescents’ interests develop in relation to the interests of their school network of peers?  
Joris Beek, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Tobias Stark, Utrecht University, Netherlands |
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### SINGLE PAPER: ATTITUDES AND BELIEFS

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<td>Lionel Alvarez, HEP-Fribourg</td>
<td>Self-efficacy and outcome expectations of adolescents with (non-)stereotypic career choices</td>
<td>Gernot Dreisiebner, University of Graz, Austria; Michaela Stock, School of Business Economics and Social Sciences, Austria</td>
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<td>Expectancy-value theory and emotions in a COVID world: a study on vocational teachers</td>
<td>Catherine Audrin, University of Teacher Education Lausanne, Switzerland; Marine Hascoët, University of Teacher Education Lausanne, Switzerland; Crispin Girnushu, University of Teacher Education Lausanne, Switzerland</td>
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<td>Role of the school context in parental expectations’ development</td>
<td>Marine Hascoët, Lausanne University of Teacher Education, Switzerland; Valentina Giaconi, Universidad de O’Higgins, Chile; Ludwine Jamain, Université Grenoble Alpes, France</td>
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## Session X: 4 | Time: 12:00-13:00 | Location: Session Room 12

### SINGLE PAPER: MATHEMATICS IN PRIMARY EDUCATION

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<tr>
<td>Christian Thum, ETH Zurich, Switzerland</td>
<td>Development of children’s strategy use from Grade 3 to 4: Individual and classroom predictors</td>
<td>Henning Sievert, Leibniz-Institute for Science and Mathematics Education (IPN), Germany; Marián Hickendorff, Leiden University, Netherlands; Ann-Katrin Van der Ham, Universität Hamburg, Germany; Aiso Heinze, Leibniz Institute for Science and Mathematics Education (IPN), Germany</td>
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<td>The Effect of Problem Format on Second Grade Children’s Arithmetic Problem-Solving Performance</td>
<td>Iro Xiandou-Dervou, Loughborough University, United Kingdom; Emine Simsek, Loughborough University, United Kingdom; Johannes Van Luit, Utrecht University, Netherlands; Evelyn Krosbergen, Radboud University, Netherlands; Iona Fritso-van den Bos, University of Twente, Netherlands; Menno van der Schoot, Vrije Universiteit Amsterdam, Netherlands; Ernest C. D. M. van Lieshout, Vrije Universiteit Amsterdam, Netherlands</td>
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<td>Solving addition tasks within 20 – Strategy use, error rates and preconditions</td>
<td>Hedwig Gasteiger, Osnabrück University, Germany</td>
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## Session X: 5 | Time: 12:00-13:00 | Location: Session Room 3

### SINGLE PAPER: ASSESSMENT IN PRIMARY EDUCATION

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<td>Andreas Rieu, PH Freiburg, Germany</td>
<td>Supporting primary students’ math reasoning: Formative feedback and self-efficacy as mediator</td>
<td>Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Patricia Bachmann, University of Teacher Education St.Gallen, Switzerland</td>
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<td>Students’ (in)consistent performance and the relation with SES, gender, and track recommendations</td>
<td>Anne van Leest, Utrecht University, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands; Lisette Homatra, Utrecht University, Netherlands</td>
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<td>Online assessment of morphological awareness and its development in grades 2-4</td>
<td>Silvia Varga, John von Neumann University, Hungary</td>
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## Session X: 6 | Time: 12:00-13:00 | Location: Session Room 10

### SINGLE PAPER: COMPUTER-ASSISTED AND MULTIMEDIA LEARNING

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<tr>
<td>Marco Röth, University of Cologne, Germany</td>
<td>Modality effect in virtual reality</td>
<td>Patrick Albus, Ulm University, Germany; Andrea Vogl, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Tina Seufert, Ulm University, Germany; Sebastian Hartwig, Institute of Institute of Media Informatics, Germany</td>
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<td></td>
<td>Can segmented lecture slides foster online learning?</td>
<td>Tim Küh, University of Mannheim, Germany; Susanne Kappes, University of Mannheim, Germany</td>
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<td></td>
<td>Do a rating task and a pause button affect video-based learning? Insights from two experiments.</td>
<td>Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany</td>
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<td><strong>SINGLE PAPER: SCHOOL EFFECTIVENESS</strong></td>
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<td><strong>Chair</strong></td>
<td>Monika Gigert, Pädagogische Hochschule Steiermark, Institut für Elementar- und Primarpädagogik, 8010 Graz, Österreich, Austria</td>
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<tr>
<td><strong>Reform@work: Analyzing policy implementation under the impact of COVID-19 in Switzerland</strong></td>
<td>Michelle Jutzli, University of Teacher Education Bern, Switzerland; Marina Girgis, Pädagogische Hochschule Bern, Switzerland; Thomas Wicki, PHBern, University of Teacher Education, Switzerland; Ueli Hostettler, PHBern – University of Teacher Education, Switzerland</td>
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<tr>
<td><strong>Enacting an RCT on small-group mathematics tuition in elementary schools: practitioners’ voices</strong></td>
<td>Jarmila Bukovska-Boan, Kristiania University College, Norway; Vibeke Opheim, NIFU, Norway</td>
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<td><strong>Primary school principals’ views on designing inclusive schools</strong></td>
<td>Gamze Görel, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany</td>
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<td>Jessica Carolyn Bühler, University of Basel, Switzerland</td>
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<td><strong>Writing for all: Studying the development of handwriting and keyboarding skills in early education</strong></td>
<td>Anabela Malpique, Murdoch University, Australia, Australia; Margaret Menga, Edith Cowan University, Australia; Deborah Pinso-Pasternak, University of Canberra, Australia; Susan Lodger, Murdoch University, Australia; Debora Valcan, Murdoch University, Australia</td>
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<td><strong>Emerging school readiness profiles of 3-year-old typically developing children</strong></td>
<td>Erica Kamphorst, University of Groningen, Netherlands; Marja Cantell, University Groningen, Netherlands; Gerda Van der Veer, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands; Suzanne Houwen, University of Groningen, Netherlands</td>
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<td><strong>Reading precursors developmental trajectories according to socioeconomic status in Chile</strong></td>
<td>Victoria Espinoza, Pontificia Universidad Católica de Chile, Chile; Catalina Santa Cruz, Centro de Justicia Educatacional, Chile; Ricardo Rosas, Psychology, Chile</td>
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<td><strong>Chair</strong></td>
<td>Birgitta Fröljendahl, Department of Language Education, Stockholm University, Sweden</td>
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<td><strong>Pre-service teachers’ conceptions on online learning in emergency distance education</strong></td>
<td>Christian Tarchi, University of Florence, Italy; Eva Wennäs Brante, Malmö University, Sweden; Mohammad Jokar, Monash University, Australia; Elham Marzai, Monash University, Australia</td>
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<td><strong>Learning to diagnose: effects of scaffolding in a simulation for prospective primary school teachers</strong></td>
<td>Christian Schons, Technical University of Munich, Germany; Andreas Obersteiner, Technical University of Munich, Germany; Kristina Reiss, Technische Universität München (TUM), Germany</td>
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<td><strong>How professional knowledge affects teachers’ diagnoses of students’ scientific reasoning skills</strong></td>
<td>Amadeus J. Pickal, University of Hildesheim, Germany; Raimund Gnevez, LMU Munich, Germany; Birgit J. Nauhaus, LMU Munich, Germany; Christof Wacker, Universität Hildesheim, Germany</td>
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<td><strong>Chair</strong></td>
<td>Boris Eckstein, University of Teacher Education St. Gallen, Switzerland</td>
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<td><strong>Online measures of learning engagement: patterns in time and relationships with off-line measures</strong></td>
<td>Dirk Tempelaar, Maastricht University, Netherlands</td>
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<td><strong>Learners’ Adjustment Strategies Following Impasses in Medical Simulations</strong></td>
<td>Nicole Heitzmann, Ludwig-Maximilians-Universität (LMU), Germany; Matthias Stader, LMU Munich, Germany; Arika Radkowitsch, Ludwig-Maximilians-Universität München, Germany; Constanze Richters, Ludwig Maximilians-Universität (LMU), Germany; Ralf Schmidmaier, LMU University Hospital Munich, Germany; Martin R. Fischer, LMU University Hospital, Germany</td>
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<td><strong>Learning from Gaze: Eye Movement Modeling Examples in Software Engineering Education</strong></td>
<td>Kenneth Holmqvist, Lund University, Sweden; Mottok Jürgen, OTH, Germany; Theresa Stark, OTH Regensburg, Germany; Stefan Schreitbauer, OTH Regensburg, Germany; Rebecca Reuter, OTH-Regensburg, Germany; Florian Hauser, OTH Regensburg, Germany; Hans Gruber, University of Regensburg, Germany</td>
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### SINGLE PAPER: ACHIEVEMENT

**Chair**
Izzet Utku Caybas, Middle East Technical University, Turkey

**Associations among students’ achievement goals, perceived teachers’ goals and didactic practices**
Georgia Stavropoulou, Aristotle University of Thessaloniki, Greece; Dimitrios Stamolivasis, Aristotle University of Thessaloniki, Greece; Eleftheria Goniadis, Aristotle University of Thessaloniki, Greece

**The Role of Metacognitive Competences in the Development of School Achievement among Gifted Youths**
Catharina Titzken, University of Würzburg, Germany; Tobias Richter, University of Würzburg, Germany; Sandra Schmiedeler, University of Würzburg, Germany; Nicole von der Linden, University of Würzburg, Germany; Wolfgang Schneider, University of Würzburg, Germany

**Adolescents’ Subjective Well-being with respect to school-related factors across 48 countries**
Yi-Juen Wu, Institute for School Development Research (ISD), TU Dortmund, Germany; Ji Hyun Lee, UNSW Sydney, Australia

### SINGLE PAPER: MOTIVATION AND SOCIAL INTERACTION

**Chair**
Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong

**Parental Support and Pressure in Adolescents’ Development of Stress**
Stefan Kulikow, University Greifswald, Germany; Diana Raufelder, University Greifswald, Germany; Frances Hotterrichter, University of Greifswald, Germany

**Teachers’ Psychobiological Stress in Social Interactions and the Role of Emotional Stability**
Sandra Isabel Schneider, PhB Join / University of Bern, Switzerland; Alexander Wettstein, PhBern / University of Bern, Switzerland; Fabienne Kühne, PhB Bern / University of Bern, Switzerland; Martin grosse Holtforth, University of Bern, Switzerland; Roberto La Marca, University of Zurich, Switzerland; Wolfgang Tschacher, University of Bern, Switzerland

**Primary school student’s perceived social support and study engagement – Three-year follow-up**
Pia Rautanen, Tampere University, Finland; Tiina Soini-Ilonen, Tampere University, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Kirsti Pyykkö, University of Helsinki, Finland

### SINGLE PAPER: MOTIVATION IN AT-RISK STUDENTS

**Chair**
Junlin Yu, University of Helsinki, Finland

**Affective-motivational characteristics of at-risk children at the transition to secondary school**
Mellike Ömeroğlu, University of Erlangen-Nuremberg, Germany; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany

**Motivational Pathways to Gifted Underachievement: Trajectory Classes and Educational Outcomes**
Alcina Ramos, KU Leuven, Belgium; Jeroen Larihjse, KU Leuven, Belgium; Lisa Linnenbrink-Garcia, Michigan State University, United States; Bart Soenens, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Sabine Sypre, KU Leuven, Belgium; Michiel Boncoeur, Universiteit Gent, Belgium; Karine Verschueren, KU Leuven, Belgium

**Test Anxiety, Anxiety Disorders, and School-Related Wellbeing: The Same or Different Constructs?**
Dave Putwain, Liverpool John Moores University, United Kingdom; Kristina Loderer, University of Augsburg, Germany; Nathaniel von der Embse, University of South Florida, United States; Shannon Suldo, University of South Florida, United States; Martin Daumiller, University of Augsburg, Germany
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**Time:** 12:00-13:00  
**Location:** Session Room 4

**SINGLE PAPER: INSTRUCTIONAL DESIGN AND COMPREHENSION OF TEXT AND GRAPHICS**

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<tr>
<td>Tomi Jaakkola, Tampere University, Finland</td>
<td><strong>Bar Drawing is a Double-Edged Sword For Solving Inconsistent Word Problems</strong></td>
<td>Björn de Koning, Erasmus University Rotterdam, Netherlands; Anton Boonen, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands; Joran Jongerling, Erasmus University Rotterdam, Netherlands; Fryd van Wesel, Vrije Universiteit Amsterdam, Netherlands; Menno van der Schoot, Vrije Universiteit Amsterdam, Netherlands</td>
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<td><strong>Developing Abstraction and Diagram Use Skills for Solving Math Problems in Early Elementary School</strong></td>
<td>Yuri Uesaka, The University of Tokyo, Japan</td>
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<td><strong>Learning with Dynamic Visualizations: Influence of Observing Hands, Spatial Ability, and Perspective</strong></td>
<td>Birgit Brucker, Leibniz-Institut für Wissensmedien (IWM), Germany; Jana Adam, Eberhard Karls Universität Tübingen, Germany; Nadine Marcus, University of New South Wales, Australia; Björn De Koning, Erasmus University Rotterdam, Netherlands; Peter Gerjets, Leibniz-Institut für Wissensmedien (IWM), Eberhard Karls Universität Tübingen, Germany</td>
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**Time:** 12:00-13:00  
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**SINGLE PAPER: MOTIVATION AND QUANTITATIVE METHODS**

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<tr>
<td>Vibeke Ankersborg, Copenhagen Business School, Denmark</td>
<td><strong>Exploring the Dynamics of Situated Expectancy-Value Theory: A Repeated Measures Network Analysis</strong></td>
<td>Patrick Beymer, University of Wisconsin - Madison, United States; Daria Katharina Benden, TU Dortmund University, Germany; Maen Sachsthall, University of Amsterdam, Netherlands</td>
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<td><strong>Social integration and development of intrinsic motivation: A latent transition analysis</strong></td>
<td>Marion Reindl, University of Salzburg, Austria; Tanja Auer, University of Salzburg, Austria; Burkhard Griefewosz, University of Salzburg, Austria</td>
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<td><strong>Motivational mindset of first-year university students determines purpose and study engagement</strong></td>
<td>Job Hudig, Erasmus University Rotterdam, Netherlands; Ad Scheepers, Rotterdam School of Management, Erasmus University, Netherlands; Michaela Schippers, Rotterdam School of Management, Erasmus University, Netherlands; Guus Smeets, Erasmus University Rotterdam, Netherlands</td>
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**Time:** 12:00-13:00  
**Location:** Session Room 1

**SINGLE PAPER: ACHIEVEMENT, EMOTION AND AFFECT**

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<td>Marjon Fokkens-Bruinsma, University of Groningen, Netherlands</td>
<td><strong>Green not Grey: Exposure to Nature as a Resource for Students’ Cognition and Emotional Well-Being</strong></td>
<td>Angelica Ronconi, University of Padova, Italy; Lucia Mason, University of Padova, Italy</td>
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<td><strong>Student Adaptability, Emotions, and Achievement: Navigating New Academic Terrains in a Pandemic</strong></td>
<td>Martin Daumiller, University of Augsburg, Germany; Kristina Loderer, University of Augsburg, Germany; Raven Rinas, Augsburg University, Germany</td>
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<td><strong>Physical fitness and psychosocial health, cognitive and academic outcomes in healthy adolescents</strong></td>
<td>Barbara Haverkamp, University of Groningen, University Medical Center Groningen, Center for Human Movement Sciences, Netherlands; Jaap Oosterlaan, Vrije Universiteit Amsterdam, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands</td>
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## INVITED SYMPOSIUM: SIG 15: VALIDITY AND RELIABILITY EVIDENCE OF MEASURES USED TO SCREEN LEARNING DIFFICULTIES IN MATHS

**Chair**  
Pirjo Aurio, University of Helsinki, Finland

**Discussant**  
Annotine Desoete, Ghent University / Artevelde University of applied sciences, Belgium

**Validity and reliability evidence of numeracy measures used in elementary school**  
Ari Hakkakainen, University of Helsinki, Finland; Annaukka Relander, The University of Helsinki, Finland; Pirjo Aurio, University of Helsinki, Finland; Anu Laine, University of Helsinki, Finland

**Validity of an online dyscalculia screener for grades 3 to 9**  
Johan Korhonen, Åbo Akademi University, Finland; Pekka Räsänen, University of Turku, Finland; Pirjo Aurio, University of Helsinki, Finland; Anu Laine, University of Helsinki, Finland; Ari Hakkakainen, University of Helsinki, Finland; Eija Väisänen, University of Helsinki, Finland; Jonatan Finell, Åbo Akademi University, Finland; Teemu Rajala, University of Turku, Finland; Mikko-Jussi Laakso, University of Turku, Finland

**The SYMbolic Magnitude Processing Test (SYMP-Test). A validation in Belgium and Finland**  
Bert De Smedt, KU Leuven, Belgium; Johan Korhonen, Åbo Akademi University, Finland; Pirjo Aurio, University of Helsinki, Finland

**Number Estimation Line tasks: The impact of instructional variations**  
Jo Van Herwegen, UCL Institute of Education, United Kingdom; Laura Outhwaite, UCL- Institute of Education, United Kingdom; Victoria Simms, Usher University, United Kingdom

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**Chair**  
Huib Tabbers, Erasmus University Rotterdam, Netherlands

**Economic imperatives on CET: Challenges for pedagogical professionality**  
Christian Hansel, University of Paderborn, Germany; Joselina Finke, University of Paderborn, Germany; Carolin Brandt, University of Paderborn, Germany; Joelle Marie Krautz, University of Paderborn, Germany

**Measuring Creativity in Business, Medicine, Information and Technical Professions**  
Silke Fischer, Eidgenössische Hochschule für Berufsbildung (SFFB), Switzerland; Antje Barabasch, EHB, Switzerland

**Key competences: Citizens’ perspectives**  
Joona Mannonen, Finnish Institute for Educational Research, University of Jyväskylä, Finland; Raja Hämäläinen, University of Jyväskylä, Finland; Joni Lämsä, University of Jyväskylä, Finland; Bram De Wever, Ghent University, Belgium

## SINGLE PAPER: EDUCATIONAL POLICY AND CONTENT ANALYSIS

**Chair**  
Marc Sarazin, University of Edinburgh, United Kingdom

**Actor-structure dynamics, digital learning, and homeschooling during the corona pandemic**  
Christian Herzog, Leuphana University Lüneburg, Germany; Alessandro Immanuel Bet, Leuphana University Lüneburg, Germany

**ICT-related Teacher Professional Development in Germany before COVID-19: Where do we go from here?**  
Lara-Tidl Enges, University of Duisburg-Essen, Germany; Manuela Endberg, University of Duisburg-Essen, Germany

**The Times They Are a-Changin’ (Bob Dylan): Migrants in school system - something old or new?**  
Gülay Teke, University of Potsdam, Germany; Michel Kringel, Humboldt-University Berlin, Germany

## SINGLE PAPER: INSTRUCTIONAL DESIGN AND LEARNING TECHNOLOGIES

**Chair**  
Sara Hennessy, University of Cambridge, United Kingdom

**What COVID-19 distance-education transitions reveals about learning and teaching practices?**  
Bernadette Charlier, University of Fribourg, Switzerland; Joris Felder, Haute école pédagogique de Fribourg, Switzerland; Laura Molteni, University of Fribourg, Switzerland; Katharina Baran, University of Fribourg, Switzerland

**Temporal contingency in learning biological ecosystem in Virtual Reality and individual differences**  
Porte Laurie, Lead - CNRS / Université de Bourgogne, France; Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France

**Effects of Teachers Acting Naturally vs. Didactically During Video Learning**  
Selina Nadine Emhardt, Open Universiteit Nederland, Faculty of Educational Sciences, Netherlands; Haliszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Saskia Brand-Gruwel, Open University of the Netherlands, Netherlands; Christian Drumm, FH Aachen University of Applied Sciences, Germany; Tamara Van Gog, Utrecht University, Netherlands
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<td><strong>Chair</strong> Yi-Jhen Wu, Institute for School Development Research (IFS), TU Dortmund, Germany</td>
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<td><strong>Determining Fit: The Role of Matching Procedures in Higher Education Students’ Enrollment Behavior</strong> Karlijn Soppe, Utrecht University, Netherlands; Irene Klugkist, Utrecht University, Netherlands; Theo Wubbels, Utrecht University, Netherlands; Leonie Wijnja-W de Mel, University Utrecht, Netherlands</td>
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<td><strong>The long-haul of COVID: Fall 2020 challenges for students, families, &amp; staff in high-poverty schools</strong> Courtney Pollack, Boston College, Massachusetts Institute of Technology, United States; Maria Theodorakakis, Boston College, United States; Yan Leigh, Boston College, United States; Mary E. Walsh, Boston College, United States; Allison Morgan, Boston College, United States</td>
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<td><strong>Resilient students in the social structure of the class</strong> Dőra Fanni Szabó, MTA-SZTE Research Group on the Development of Competencies, Hungary</td>
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<td><strong>Learning Barriers at the Workplace: Development and Validation of a measurement instrument</strong> Sebastian Anselm, University of Education Schwäbisch Gmünd, Germany; Uwe Faßhauer, University of Education Schwäbisch Gmünd, Germany</td>
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<td><strong>Continuing education through video-based interaction analysis</strong> Laurent Filletaz, University of Geneva, Switzerland; Stephanie Garcia, University of Geneva, Switzerland; Marianne Zogmail, University of Geneva, Switzerland</td>
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<td><strong>Low-educated adults’ perceived educational needs and barriers to learning: Evidence from PIAAC</strong> Liesse Van Nieuwenhove, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium</td>
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<td><strong>Manifestations of non-interest</strong> Joel Draijer, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands</td>
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<td><strong>Micro-analyses of students’ productions in physics reveal misunderstandings not misconceptions</strong> Alaric Kohler, HEP-BEIJUNE, Switzerland; Anne-Nelly Perret-Clermont, University of Neuchâtel, Switzerland</td>
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<td><strong>Oracy skills development in the language of instruction (L2) through Dialogic Literary Gatherings</strong> Maite Santiago Garabieta, University of Deusto, Spain; Rocío García-Carrion, University of Deusto, Spain; Aitana Fernandez-Villardon, University of Deusto, Spain</td>
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<td><strong>Students’ perception of critical thinking as related to the undergraduate thesis</strong> Maria Öhrstedt, Stockholm University, Sweden</td>
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<td><strong>Competing meanings of international experiences for researchers: Collaborative autoethnography</strong> Yusuke Sakurai, Ochanomizu University, Japan</td>
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<td><strong>Supervision and academic literacies</strong> Karl-Heinz Pogner, Copenhagen Business School, Denmark; Vibeke Ankersborg, Copenhagen Business School, Denmark</td>
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## SINGLE PAPER: COGNITIVE DEVELOPMENT AND SKILLS

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<tr>
<td>Rianne van Lambalgen, Utrecht University, Netherlands</td>
<td>Self-Regulated Learning in Turkish Preschool Context</td>
<td>Seda Saraç, Bahçeşehir University, Turkey; Sema KARAKELLE, Istanbul Universitesi, Turkey</td>
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<td>The Relationship between Executive Functioning and Self-Regulated Learning in Australian Children</td>
<td>Deborah Pino-Pasternak, University of Canberra, Australia; Debora Valcan, Murdoch University, Australia; Helen Davis, Murdoch University, Australia</td>
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<td>Self-regulation in instructional and guided play: Insights from pre-kindergarten classrooms in Chile</td>
<td>Valeksa Grau, Pontificia Universidad Católica de Chile, Chile; Amaya Lorca de Urante, Pontificia Universidad Católica de Chile, Chile; Carolina Araya, Pontificia Universidad Católica de Chile, Chile</td>
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## SINGLE PAPER: MOTIVATION AND SELF-EFFICACITY

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<td>Claudia Schreiner, University of Innsbruck, Austria</td>
<td>Self-efficacy, emotions, and peer support of university students during the COVID-19 pandemic</td>
<td>Jasperea Brouwer, University of Groningen, Netherlands; Liga Klavina, University of Groningen, Netherlands; Marloes Huis, University of Groningen, Netherlands; Hanika Kopperhoek, University of Groningen, Netherlands</td>
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<td>Student-Teacher Relationships Drive Student Help-Seeking from Teachers for Math Learning Challenges</td>
<td>Keen Jatbo, Carnegie Mellon University, United States; Niko Lokowonski, Carnegie Mellon University, United States; J. Elizabeth Richey, Carnegie Mellon University, United States; Elisa Morton, Georgia Institute of Technology, United States; Kenneth R. Koeninger, Carnegie Mellon University, United States</td>
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<td>Dynamic relations of achievement goal orientations with daily experiences of success and failure</td>
<td>Florian Schmiedek, DIPF</td>
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## SINGLE PAPER: STUDENT LEARNING AND TEACHING

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<td>Jarkko Hautala, Nilo Mäki Institute, Finland</td>
<td>Student-centred learning environments promoting regulated learning: A mixed-methods approach</td>
<td>Juulia Lahdenperä, Häme University of Applied Sciences, Finland; Johanna Rämö, University of Helsinki, Finland; Lisa Postareff, HAMK University of Applied Sciences, Finland</td>
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<td>Defining key components of Challenge Based Learning in engineering education: a review study</td>
<td>Karolina Douluoger, Eindhoven School of Education, Netherlands; Jan Vermeert, Eindhoven University of Technology, Netherlands; Gunter Bombara, Eindhoven University of Technology, Netherlands; Michael Bots, Eindhoven University of Technology, Netherlands</td>
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<td>Pedagogical Patterns for Seamless Learning in Higher Education</td>
<td>Bernadette Dilger, University of St.Gallen, Switzerland; Luci Gommer, University of St.Gallen, Switzerland</td>
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## SINGLE PAPER: SOCIAL INTERACTION IN COLLABORATIVE LEARNING

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<td>Charalambo Charalambous, University of Cyprus, Cyprus</td>
<td>A bodily view of collaboration in asymmetrical peer interactions in early childhood education</td>
<td>Juliene Fereira, University of Tampere, Finland</td>
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<td>Motivational and emotional conditions and socially shared regulation – two sides of the same coin</td>
<td>Hanna Jarvenoja, University of Oulu, Finland; Tiina Törmanen, University of Oulu, Finland; Tatiana Shubina, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland</td>
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<td>Process-mining the shared physiological arousal during collaborative problem solving</td>
<td>Muhterem Dindar, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Eetu Haataja, University of Oulu, Finland; Atsuko Çın, University of Oulu, Finland</td>
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SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN TEACHER PROFESSIONAL DEVELOPMENT

Chair
Lisa Bendzlk, IPN Leibniz Institute for Science Education, Germany

Entry characteristics of student teachers and their academic success. A person-centered approach
Antje Biermann, Saarland University, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Frank Spinath, Saarland University, Germany; Roland Brunken, Saarland University, Germany

Diagnostic competencies of elementary school math teachers - how can they be measured efficiently
Lisa Wagner, Universität Potsdam, Germany; Jenny Lenkeit, University of Potsdam, Germany; Anne Hartmann, University of Potsdam, Germany; Mohit Kriega, HU Berlin, Germany; Nadine Spörer, University of Potsdam, Germany; Antje Ehret, University of Potsdam / University of Johannesburg, Germany

How skilled are future teachers in the domains of learning, thinking, reading and ICT literacy?
Györgygy Molnár, University of Szeged, Hungary

SINGLE PAPER: QUANTITATIVE METHODS IN PRIMARY EDUCATION

Chair
Stefanie Rahm, Otto-von-Guericke Universität Magdeburg, Germany

Teacher well-being in Taiwan: from real-time experience in class to general well-being
Pei-Hsin Li, University of Oxford, United Kingdom; Diane Mayer, University of Oxford, United Kingdom; Lars Erik Malmborg, University of Oxford, United Kingdom

Explaining Stability and Changes in Academic Resilience by Examining the Role of Teacher Factors
Maria Anastasou, University of Cyprus, Cyprus; Leonidas Kyriakides, University of Cyprus, Cyprus

How did Covid-19 related lockdowns affect learning at different levels of education?
Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

SINGLE PAPER: SCIENCE EDUCATION

Chair
Nadine Schlomski-Bodenstein, Karlsruhe University of Education, Germany

Preparing to Learn Linear Algebra: Report on an Ongoing Study
Vera Baumgartner, ETH Zurich, Switzerland; Simona Daguisti, ETH Zurich, Switzerland; Dragana Trninić, ETH Zurich, Switzerland; Norbert Hungerbühler, ETH Zurich, Switzerland; Meike Alkved, ETH Zurich, Switzerland; Alexander Caspar, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland

Assessing control of variables strategy in physics of high school students
De Vo, University of Szeged, Doctoral School of Education, Hungary

Effective Science and Mathematics Teaching: an overview of meta-analyses
Maximilian Knöger, Technical University of Munich (TUM), Germany, Andreas Heimanek, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

ROUNDTABLE: TEACHING AND TEACHER EDUCATION

Chair
Chiara Pecini, University of Florence, Italy

Exploring learning and teaching in interdisciplinary educational designs for future citizens
Anniken Futterberg, University of Oslo, Norway; Kenneth Sletthe, University of Oslo, Norway; Andreas Lund, University of Oslo, Norway; Hans Christian Amstho, University of Oslo, Norway; Olof Andre Kramme, Department of Teacher Education and School Research, University of Oslo, Norway; Ingvild Rasmussen, Department of Education, Norway; Kari Anne Radnes, University of Oslo, Norway; Elin Saether, University of Oslo, Department of Teacher Education and School Research, Norway; Kistin Vasba, University of Oslo, Department of Teacher Education and School Research, Norway

Tutorials in teacher training: Perspectives on the formation of professional teacher action
Matthias Wagener, Institute for Educational Science, TU Dresden, Germany

Implementing and testing a gender-free curriculum for the development of digital citizenship
Ana Tadjadou-Brahim, HEP Fribourg, Switzerland
## Session Y: 16
**Time:** 14:30-15:30  
**Location:** Session Room 3

### Roundtable: Higher Education

| Chair                  | Exploring Students' Critical Thinking in Undergraduate Theses in the Discipline of Education  
| Tim Mainhard, Utrecht University, Netherlands | Max Schjoa, Stockholm University, Sweden |
| Developing a model for self-regulated learning in a higher education medical workplace environment  
| Evelyn Steinberg, Vetmeduni Vienna, Austria; Franziska Perels, Ssafaand University, Germany; Ulrike Auer, Vetmeduni Vienna, Austria; Lukas Schwarz, Vetmeduni Vienna, Austria |  
| The Physiological Mechanisms of Learning through Productive Failure  
| Císa Formaz, ETH Zurich, Switzerland; Venera Gashaj, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Dragan Tomic, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland |  

## Session Y: 17
**Time:** 14:30-15:30  
**Location:** Session Room 15

### Invited Symposium: SIG 16: How Teachers Think About SRL and Judge SRL in Students

| Chair                  | Assessing Teachers’ Professional Knowledge about Self-Regulated Learning  
| Janneke van de Pol, Utrecht University, Netherlands | Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Carmen Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany |
| Organisers             | Teachers’ Judgment Accuracy of Students’ Monitoring: A Conceptual Framework and Descriptive Study  
| Janneke van de Pol, Utrecht University, Netherlands; Charlotte Dignath, DIPF-Leibniz Institute for Education Research Frankfurt, Germany | Janneke van de Pol, Utrecht University, Netherlands; Sophie Oudman, Utrecht University, Netherlands |
| Discussant             | The Illusion of Incompentence is a burden for children: self-evaluation biases and school judgment  
| Mariette van Loon, University of Bern, Switzerland | Anne-Laure de Place, Université Grenoble Alpes, France; Rebecca Lévesque-Guillermé, Université du Québec à Montréal, Canada; Andrée-An Labranche, J.L’Université du Québec à Montréal, Canada; Thérese Bouffard, Université du Québec à Montréal, Canada; Pascal Parais, Université Grenoble Alpes, France |
|                        | Assessing teachers’ diagnostic skills for applying the use of self-regulatory strategies  
|                        | Charlotte Dignath, DIPF-Leibniz Institute for Education Research Frankfurt, Germany; Phuc Tran Lu, Goethe-Universität Frankfurt am Main, Germany; Mareike Kuner, DIPF | Leibniz Institute for Research and Information in Education, Germany |

## Session Z: 1
**Time:** 15:45-16:45  
**Location:** Session Room 7

### Poster Presentation: Motivation, Emotion and Metacognition

| Chair                  | Teacher Value Messages Predict Greater Engagement through Expectancy, Value, and Cost Beliefs  
| Lina Markauskaite, University of Sydney, Australia | Dave Putwain, Liverpool John Moores University, United Kingdom; Andrea Mallaburn, Liverpool John Moores University, United Kingdom |
| Italian university students’ learning experience during COVID-19 forced online education  
| Giulia Vettori, University of Florence, Italy |  
| Metacognition During Visualization and Metavisualization Practice: Constructs and Instruments  
| Hsin-Yi Chang, National Taiwan Normal University, Taiwan; Theerapong Binali, National Taiwan University of Science and Technology, Taiwan; Yen-Jung Chang, National Taiwan Normal University, Taiwan; Yen-Syuan He, National Taiwan Normal University, Taiwan; Ching-Hwa Chang, National Taiwan Normal University, Taiwan; An-Yu Wu, National Taiwan Normal University, Taiwan |  
| A Study of Homophily in Peer Group Members’ Academic Motivation  
| Izzet Ulku Caybaş, Middle East Technical University, Turkey; Nur Akkus Cakir, Middle East Technical University, Turkey; Yesim Capa Aydın, Middle East Technical University, Turkey |  
| Elucidating the Research on Achievement Goals and Academic Dishonesty: A Meta-Analysis  
| Tanja Fritz, University of Augsburg, Germany; Anne Petersen, University of Mannheim, Germany; Stefan Jonke, University of Mannheim, Germany; Martin Daumiller, University of Augsburg, Germany |  
| Relating Teachers’ Coping Styles to Student Noise and Perceived Stress  
| Raphaella Fenzl, University of Passau, Germany; Delteil Ulthahme, University of Passau, Germany |  

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**FRIDAY, 27 AUGUST 2021**
## POSTER PRESENTATION: EDUCATIONAL POLICY AND SCHOOL EFFECTIVENESS

**Chair**  
Ali Yildirim, University of Gothenburg, Sweden

- **School climate and educational reform - The relationship factor**  
  Orly Shapira, The Hebrew University of Jerusalem, Israel; Benzi Slakmon, Tel Aviv University, Israel

- **"I'll be There": Improving Online Class Attendance With a Commitment Nudge During COVID-19**  
  Robert Weijers, Erasmus University Rotterdam, Netherlands; Lesya Granushchak, Erasmus University Rotterdam, Netherlands; Kim Ouwehand, Erasmus University Rotterdam, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands

- **Beliefs and Behaviours: A longitudinal study of leadership networks and self-efficacy**  
  Jasperina Brouwer, University of Groningen, Netherlands; Yi-Hwa Liou, National Taipei University of Education, Taiwan; Alan Daly, University of California, United States

- **Using student achievement data for decision making to improve school effectiveness**  
  Girts Burgmanis, University of Latvia, The Interdisciplinary Centre for Educational Innovation, Latvia; Dace Namson, University of Latvia, Latvia; Paves Pesto, University of Latvia, The Interdisciplinary Centre for Educational Innovation, Latvia; Ilze Saleniece, University of Latvia, Interdisciplinary Centre for Educational Innovation, Latvia

- **How to get teachers excited about all-day school. Leaderships’ influence on teachers’ enthusiasm**  

- **Insights from Field Testing of School Leadership Framework**  
  Ilze Saleniece, University of Latvia, Interdisciplinary Centre for Educational Innovation, Latvia; Dace Namson, University of Latvia, Latvia

## POSTER PRESENTATION: QUALITATIVE METHODS

**Chair**  
Katja Xu, Open University of the Netherlands, Netherlands

- **Training Teamwork Skills Online: Possibilities of a Multi-player Serious Game**  
  Lara van Peppen, Erasmus University Medical Center, Netherlands; Tjitske Faber, Erasmus University Medical Center, Netherlands; Vicki Erasmus, Erasmus University Medical Center, Netherlands; Mary Dankbaar, Erasmus MC, Netherlands

- **What Makes Educational Development Initiatives Successful? – a case study**  
  Klara Bolander Lakslov, Stockholm University, Sweden

- **An Empirical Comparison of Methods for Observing Motivationally Supportive STEM Teaching Practices**  
  Sanheeta Potola, McGill University, Canada; Qiyuan Zheng, McGill University, Canada; So Yeon Lee, McGill University, Canada; Solomon Friedman, McGill University, Canada; Ella Christaans, McGill University, Canada; Kira Rudakova, McGill University, Russian Federation; Harshada Deshpande, McGill University, Canada; Phoenix Horrocks, McGill University, Canada; Sun Jung Choi, McGill University, Canada; Kristy Robinson, Michigan State University, United States

- **A preschool for all children? Applying a self-reflection tool for improving inclusion**  
  Hanna Ginner Hau, Stockholm University, Sweden; Heidi Sailerius, Stockholm University, Sweden; Eva Björck Åkesson, Jönköping University, Sweden

- **Identification item properties related to the instructional sensitivity of mathematics test items**  
  Stephanie Musow, University of Teacher Education St.Gallen, Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland; Stephan Schönberger, University of Teacher Education Thurgau, Switzerland; Mart K. List, German Institute for International Educational Research / DIPF, Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany; Alexander Naumann, DIPF; Leibniz Institute for Research and Information in Education, Germany

- **Exploring students' perceptions on citizenship education in authentic learning environments**  
  Renate de Leeuw, Saxion University of Applied Sciences, Netherlands; Annemarie Wolberg, Saxion University of Applied Sciences, Netherlands; Wilke Stingerland, Saxion University of Applied Sciences, Netherlands; Detlef Wagenaar, Saxion University of Applied Sciences, Netherlands
## POSTER PRESENTATION: SOCIAL SCIENCES

**Chair**
Jannet van Drie, University of Amsterdam, Netherlands

**Interest in doctoral studies in relation to experiences of burnout and drop-out intentions**
Solveig Cornef, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Jouren Peltonen, University of Oulu, Finland; Erika Löfström, University of Helsinki, Finland

**Education and spirituality in a project for the reintegration of convicts**
Sergio Grossi, University of Padova, Italy, Italy

**Changes in reading habits during the COVID-19 confinement in Spain**
Pablo Delgado, University of Valencia, Spain; Maria-Angéles Serrano, University of Valencia, Spain; Nadina Gómez-Merino, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Marina Pi-Ruano, University of Valencia, Spain; Alba Rubio, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Noemí Skrobiszewska, University of Valencia, Spain; Ladsiaa Salmeron, University of Valencia, Spain

**Young professionals’ conceptions of the tax system in Germany: An interview study**
Carmela Aprea, University of Mannheim, Germany

**Citizenship Education in the French Canadian Social Studies Programs**
Daniel Moreau, Université de Sherbrooke, Canada; Joyce Anna Otteryes, Université de Sherbrooke, Canada; Zoé Chamberland Black, Université de Sherbrooke, Canada; Francois Larose, Université de Sherbrooke, Canada; Jonathan Smith, Université de Sherbrooke, Canada

**Education, prison and the intercultural challenge: what is to be done?**
Sergio Grossi, University of Padova, Italy, Italy

## POSTER PRESENTATION: TEACHING AND TEACHER EDUCATION

**Chair**
Nina Bondrup Dohn, University of Southern Denmark, Denmark

**How to trigger historical reasoning in elementary school students? Creating a teacher PD-progamme**
Yolande Potier, University of Amsterdam, Netherlands

**Challenges in the Recruitment of Student Teachers for Vocational Education in Germany**
Lars Müller, JLU Giessen, Germany

**Professional Competence and Development of Bilingual Education Teachers**
Lisa Scherzinger, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany

**Sustainability in the context of Responsible Research and Innovation as perceived by teachers**
Mojtahed Burget, University of Tartu, Estonia

**Teaching in flexible spatial and digital conditions**
Anna Maria Hipkiss, Götoborgs universitet, Sweden; Pernilla Andersson Varga, Center for Development, Learning & Research, City of Gothenburg, Sweden; Sylwana Solkova Hashemi, University of Gothenburg; Halmstad University, Sweden; Maria Spante, University West, Sweden; Martin Tallved, Center for Development, Learning & Research, City of Gothenburg, Sweden; Mats Widigson, Center for Development, Learning & Research, City of Gothenburg, Sweden

**Efficacy Messages used by Teachers Prior to High Stakes Examinations**
Hannah Wilkinson, Liverpool John Moores University, United Kingdom; Dave Putwain, Liverpool John Moores University, United Kingdom; Andrea Mallaburn, Liverpool John Moores University, United Kingdom
### POSTER PRESENTATION: MATHEMATICS

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<td>Testing the effectiveness of a cognitive training designed for academically talented children</td>
<td>Suzanne Splinter, Katholieke Universiteit Leuven, Belgium; Bart Vogelaar, Leiden University, Netherlands</td>
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### POSTER PRESENTATION: EMOTION AND AFFECT

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<td>Efrat Frer, The Hebrew University of Jerusalem, Israel; Omer Keynan, The Hebrew University of Jerusalem, Israel; Benzi Slakmon, Tel Aviv University, Israel; Baruch Schwarz, Hebrew University of Jerusalem, Israel</td>
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<td>Parents, Teachers, Peers – Who matters most for school students’ subjective and objective stress?</td>
<td>Frances Hoterichter, University of Greifswald, Germany; Miriam Hufenbach, University Greifswald, Germany</td>
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<td>Does confusion predict greater engagement in learning physics?</td>
<td>Barbara Balaz, Catholic University of Croatia, Croatia; Nina Pavlin-Bernardi, Faculty of Humanities and Social Sciences, Croatia</td>
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<td>Teachers and Student Creativity in Elementary School</td>
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<td>Emotion understanding and language among preschool-age single and dual language learners</td>
<td>Anika Jurk, University of Bern, Institute of Educational Science, Switzerland; Simona Hallday, University of Bern, Institute of Educational Science, Switzerland</td>
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<td>Assessing Academic Emotions in Civic Education: Development and Validation of Self-Report Scales</td>
<td>Elisabeth Graf, University of Vienna, Austria; Dana Murano, ACT, United States; Thomas Götz, University of Vienna, Austria</td>
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### POSTER PRESENTATION: MOTIVATION AND EMOTION

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<td>Marguerite Sacré, Université Clermont Auvergne &amp; Université de Liège, France; Benjamin Le Hénaff, Université Clermont Auvergne, France; Marie-Christine Toczek, Université Clermont Auvergne, France; Dominique Lafontaine, Université de Liège, Belgium</td>
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<td>Why Do They Enroll in this Course? Undergraduates’ Course Choice from a Motivational Perspective</td>
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<td>Expert perspectives on motivation regulation strategies targeting enjoyment of learning</td>
<td>Emily Cowin-Renner, Hector Research Institute of Education Sciences and Psychology, Germany; Kou Murayama, Hector Research Institute of Education Sciences and Psychology, Germany</td>
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<td>COVID-19 effects on teachers’ teaching-related emotions in spring 2020</td>
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<td>Validation of the Task Value Assessment for Secondary Students Scale with Portuguese students</td>
<td>Pedro Leite da Silva, ISPA-Instituto Universitário, Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal</td>
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<td>Piloting a Control-Value Intervention Promoting Adaptive Achievement Emotions in University Students</td>
<td>Christiane Hoesle, University of Munich (LMU), Germany; Kristina Loderer, University of Augsburg, Germany; Reinhard Pebrun, Ludwig-Maximilians-Universität, Germany</td>
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**POSTER PRESENTATION: LEARNING APPROACHES AND HIGHER EDUCATION**

**Chair**
Aleksander Kocaj, Institute for Educational Quality Improvement (IQB), Germany

- **Age-based differences in effects of sensorimotor- and multisensory-enriched vocabulary training**
  Brian Mathias, Technical University Dresden, Germany; Christian Andrä, University of Leipzig, Germany; Anika Schwager, University of Leipzig, Germany; Manuela Macedonia, Johannes Kepler University Linz, Austria; Katharina von Kriegstein, Technical University Dresden, Germany

- **Transformative Learning in Higher Education: Towards the Holistic Education in the Age of Uncertainty**
  Anastasia Falkenstein, Justus-Liebig-University Giessen, Germany; Edith Braun, Justus-Liebig-University Giessen, Germany

- **The effects of a Biomedical Sciences curriculum reform on students’ perceived competence development**
  Sanne Rovers, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Van Merriënboer, Maastricht University, Netherlands; Hans Savelberg, Maastricht University, Netherlands

- **University students’ resilience and self-management: in support of deep approaches to learning?**
  Sonia Ilie, University of Cambridge, United Kingdom; Jan Vermunt, Eindhoven University of Technology, Netherlands

- **Reflecting on lived experiences in story completions of higher education faculty**
  Kinga Kaplar Kodacsy, Eötvös Loránd University, Hungary; Helga Domer, Eötvös Loránd University, Hungary

- **Collaborative synthesis writing quality and collaboration satisfaction: the impact of roles**
  Karen Putzeys, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium

- **How first year experience relates to university students’ cognitive, social, and value developments**
  Maggie Zhao, The University of Hong Kong, Hong Kong

**POSTER PRESENTATION: COMPUTER-ASSISTED LEARNING**

**Chair**
Nutli Gur-Yaish, Oranim Academic College of Education, Israel

- **Fostering Learning in Computer-based Office Simulation by Problem-Solving Analytics (PSA)**
  Andreas Rauch, University of Mannheim, Germany; Juergen Seifried, University of Mannheim, Germany; Viola Deutsch, University of Mannheim, Germany; Esther Winther, University of Duisburg-Essen, Germany; Steffen Brandt, Opencampus.sh, Germany; Sabrina Ludwig, University of Mannheim, Germany; Sophia Gentner, University of Mannheim, Germany; Christian Mayer, University of Mannheim, Germany; Georg Dansch Gorshid, University of Mannheim, Germany; Anke Braunstein, University of Mannheim, Germany; Jessica Paesens, University of Duisburg-Essen, Germany

- **Extrinsically integrated instructional quizzes in learning games: an educational disaster or not?**
  Cyril Brem, Charles University, Czech Republic; Lucie Jiřinská, Faculty of Education, Charles University, Czech Republic; Petra Sedláčková, Faculty of Arts, Charles University, Czech Republic; Lukáš Kolek, Faculty of Mathematics and Physics, Charles University, Czech Republic; Tereza Tetourová, Faculty of Education, Charles University, Czech Republic; Kristina Vohna, Czech Television, Czech Republic; Jiří Lukavský, Institute of Psychology, Czech Academy of Sciences, Czech Republic

- **Digital Learning**
  Falk Radisch, Institute of school education and educational research, Germany; Larissa Habeck, University Rostock, Germany; Mona Arndt, University Rostock, Germany

- **VR learning environments: Is it possible to support orientation with cueing?**
  Daniela Decker, Deutsches Institut für Erwachsenenbildung, Germany; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

- **Interactive learning platforms for teaching occupation-specific content in healthcare professions**
  Anna-Teresa Engl, Technische Universität München (TUM), Germany

- **Metacognitive Support in Digital Learning Environments for Primary School Students**
  Doreen Prasse, Schwyz University of Teacher Education, Switzerland; Michael Hiebscher, Pädagogische Hochschule Schwyz, Switzerland; Elena Iten, Schwyz University of Teacher Education, Switzerland; Martina Coni, Schwyz University of Teacher Education, Switzerland; Rea Minder, Schwyz University of Teacher Education, Switzerland; Franziska Aeschlimann, Schwyz University of Teacher Education, Switzerland
### Session Z: 12 | Time: 15:45-16:45 | Location: Session Room 14

**POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**
Brian Cahill, Leibniz Information Centre for Science and Technology, Germany

**Building a Community of Practice to empower teachers in using open access educational resources**
Theresa Ruwe, Humboldt University Berlin, Germany; Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany

**The development of lecturers' collaboration networks during departmental professional development**
Ire Noben, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Jan Folkert Deurn, University of Groningen, Netherlands; Adriaan Holman, University of Groningen, Netherlands

**The Use of a Mechanical MOOC to Build a Practitioner Community of Practice in Educational Dialogue**
Meaghan Brugha, University of Cambridge, United Kingdom

**Nursing teachers' collaboration and professional development**
Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany

**Studying the process of teacher resilience development in higher education**
Mimami Konen, University of Eastern Finland, Finland; Päivi Kosonen, University of Eastern Finland, Finland

**Exploring teachers' beliefs in relation to TARGETS dimensions – results of an interview research**
Timea Mezei, University of Szeged, Doctoral School of Education, Hungary; Jozsef Balazs Fejes, University of Szeged, Hungary

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### Session Z: 13 | Time: 15:45-16:45 | Location: Session Room 4

**ICT Demonstration: AMIGO – ALGORITHMIC METHOD FOR IMPROVED GROUP FORMATION ONLINE**

**AMIGO – Algorithmic Method for Improved Group Formation Online**
Henrik Balhauser, Johannes Gutenberg-University Mainz, Germany; René Roepke, RWTH Aachen University, Germany; Johannes Konert, Hochschule Fulda - University of Applied Sciences, Germany

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### Session Z: 14 | Time: 15:45-16:45 | Location: Session Room 2

**ICT Demonstration: MEPA : A METHOD TO ANALYZE AND MODELIZE PERSONAL LEARNING ENVIRONMENT FOR RESEARCHER AND TEACHER**

**MEPA : a method to analyze and modelize personal learning environment for researcher and teacher**
Joris Felder, Haute école pédagogique de Fribourg, Switzerland

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### Session Z: 15 | Time: 15:45-16:45 | Location: Session Room 12

**ICT Demonstration: LSI.J – A TOOL TO INVESTIGATE RECEPTIVE LANGUAGE IN GERMAN-SPEAKING ADOLESCENTS.**

**LSIJ – A tool to investigate receptive language in German-speaking adolescents.**
Christian W. Glück, Institute of Special Education, University of Leipzig, Germany; Carina Dorise Krause, Berufsbildungswerk Leipzig / Max-Planck-Institute for Cognitive and Brain Sciences, Leipzig, Germany; Susanne Wagner, Berufsbildungswerk Leipzig, Germany
Session Z: 16 | Time: 15:45-16:45 | Location: Session Room 5

ICT DEMONSTRATION: A NEW METHOD TO EVALUATE MOVEMENT AND SHAPE QUALITY IN CHILDREN’S POOR HANDWRITING

A new method to evaluate movement and shape quality in children’s poor handwriting
Christian Marquardt, Science&Motion GmbH, Germany; Carlo Di Bitina, Department of Human Neuroscience, Sapienza University of Rome, Italy; Sibylle Hurschler Lichtsteiner, Languages and handwriting research group, University of Teacher Education, Lucerne, Switzerland; Melanie Nideröst, University of Teacher Education of Lucerne, Switzerland; Werner Wicki, Languages and handwriting research group, University of Teacher Education Lucerne, Switzerland

Session Z: 17 | Time: 15:45-16:45 | Location: Session Room 15


Chair
Fani Lauermann, TU Dortmund University, Germany

Organisers
Fani Lauermann, TU Dortmund University, Germany; Hanna Jarvenoja, University of Oulu, Finland; Julia Monrao, University of Bern, Switzerland; Martin Daumiller, University of Augsburg, Germany

Discussant
Hanna Jarvenoja, University of Oulu, Finland

Stuart A. Karabenick’s Legacy in the Field of Academic Help Seeking and Self-regulated Learning
Eleftheria Gorida, Aristotle University of Thessaloniki, Greece; Jean-Louis Berger, University of Fribourg, Switzerland; Katerina Schenke, Katalyst Methods, United States; Erik Ruzek, University of Virginia, United States

The Relevance of Relevance in Expectancy-Value Theory
Jeffrey Albrecht, University of Michigan, United States; Jacqueline E. Eccles, University of California-Irvine, United States

Stuart A. Karabenick: His Legacy in the Field of Teacher Motivation
Ruth Butler, Hebrew University of Jerusalem, Israel; Paul Richardson, Monash University, Australia; Helen Watt, The University of Sydney, Australia

Taking Teacher Responsibility into Account(ability)
Fani Lauermann, TU Dortmund University, Germany