Thinking Tomorrow’s Education: Learning from the past, in the present and for the future.

PROGRAMME

18th Biennial EARLI Conference for Research on Learning and Instruction

12.08 - 16.08.2019
RWTH AACHEN UNIVERSITY
WELCOME TO AACHEN!

Aachen, located at the point where three countries (Germany, Belgium and the Netherlands) meet, is well known for being home to the first UNESCO World Heritage Site in Germany: the Aachen Cathedral. Its architecture and features highlight the significance and imposing nature of the building, which was completed at the end of the 8th century at the request of Emperor Charlemagne. Every year millions of visitors come to Aachen in order to see the historical sights in connection with Charlemagne. And Aachen exhilarates: its hot springs have been enjoyed for more than two thousand years! From Roman times there have been good connections with the rest of Europe. Today, the town is reachable by motorways from Cologne and Düsseldorf, Amsterdam, Brussels and Paris. Home to 250,000 residents, Aachen is easy to get around and pedestrian friendly.

The high number of students – about one in four people in Aachen studies at a university here – increases the city’s appeal. The streets invitingly beckon the casual stroller, the lounges. The health cures and the conferences are never far apart, and there is always a worthwhile diversion. In every respect, Aachen is a town which distinguishes itself by wide variety: historical interrelationships, historical sights, cultural attractions, big events such as the international dressage, jumping and riding tournament (CHIO) and the presentation of the international Karlspreis (Charlemagne Award) in Aachen, as well as museums of many kinds and, last but not least, the town’s economic and scientific functions.
Note: The details in this programme book were accurate at the time of printing. However, programme changes may have occurred thereafter. Find out about any changes to the programme via the conference website (EARLI.org/EARLI2019) and the mobile conference app. Changes to your sessions will also appear in your EARLI user dashboard (“annotations”).
Aachen is a region of growing economic and scientific importance. It is home to four universities, of which RWTH Aachen is the largest. With around 45,000 students per year, the university exploits strong research networks and the intellectual curiosity of its staff to address bold scientific questions, transfer forefront knowledge and drive innovative discoveries that impact global challenges.

The Excellence Initiative of the German federal and state governments provided RWTH with a unique opportunity to boost its research profile by strengthening the natural sciences and fostering interdisciplinary research. These were the first steps in RWTH’s steady transformation into an integrated interdisciplinary University of Technology and also towards convergence. The RWTH Aachen Campus visibly highlights the research prowess of the University. The entrepreneurial mindset and collaboration with industry partners fostered on the Campus benefit both students and employees of RWTH. The many stimulating ideas are already having an impact in Aachen and the entire tri-border region of Germany, Belgium and the Netherlands. An innovative knowledge community is evolving that is closely networked with some of the world’s leading research and industry partners.

C.A.R.L. (Central Auditorium for Research and Learning) is one of the largest and most modern lecture hall centres in Europe. The new 14,000 m² facility offers space for over 4,000 students and comprises 11 lecture halls, 16 seminar rooms and a break room with a café. The Danish office schmidt hammer lassen architects in Aarhus, is responsible for the architectural design. As principal, the NRW Construction and Real Estate Agency or BLB NRW is investing roughly 45 million Euros from the state’s University Modernization Program into the multilevel building. The C.A.R.L. building was officially opened in 2017.

THE BIG PICTURE – TERM 2018

- Students in Total: 45,377
- International Students: 9,651
- New Enrolments: 10,866
- Graduates: 7,165
- Professors: 547
- Staff (FTE): 9,496
- Total Budget (Million €): 948.0
- Publications: 14,674

14,674 – 32 % Female Students
30,703 – 68 % Male Students

From 125 countries

€ 493.3 Million – State NRW
€ 454.6 Million – Project Funds
Dear Colleagues,

Welcome to Aachen!

RWTH Aachen University and our whole organisation team is delighted to host EARLI 2019, the 18th Biennial Conference of the European Association for Research on Learning and Instruction. Thanks to around 2,200 conference delegates coming from all continents and a huge amount of submissions (more than 1,400) peer-reviewed by more than 620 reviewers, we are convinced that EARLI 2019 will again provide countless possibilities for lively discussions and scholarly exchange in our different formats of presentations. But don’t forget: conferences are more than papers, symposia and workshops. It is also about meeting friends and colleagues, networking and exchanging far beyond one single paper.

The conference theme “Thinking Tomorrow’s Education: Learning from the past, in the present and for the future” was specifically selected to address the constant changes of the world we live in. The future is a moving target - difficult to predict and prepare for. Yet, education is doing just that. At the 18th Biennial EARLI Conference and the accompanying 23rd Pre-Conference of the Junior Researchers of EARLI, researchers in learning and instruction from all over the world come together to discuss current research findings. In order to think tomorrow’s education and education research, it is crucial to relate new findings to what we already know and elaborate how this will help foster sustainable learning processes and navigating what is yet to come.

Aachen is the perfect place to discuss this dynamic. On one side characterised by winding alleys flanked by baroque buildings and overlooked by its famous UNESCO world heritage Cathedral, the city was the seat of Charlemagne, sometimes referred to as the “Father of Europe”. He can be considered as one of the first persons who helped to mould a collective European historical thinking. On the other side, Aachen is a high-tech city and home to one of the leading technical universities in Germany. Let us be inspired by this town, where the past and the future meet in the present.

In addition to the scientific programme, we warmly invite all delegates to take part in the many social events and meetings planned throughout the Conference. The newly built C.A.R.L. building will be the conference venue where most of the events will take place. We also encourage you to explore the city of Aachen, which has much to offer. Since Aachen is located on the three-country corner, where the borders of Germany, Belgium and the Netherlands meet, maybe you want to experience being in three countries at the same time? Or you just hop over to the Netherlands to buy some cheese or to Belgium to have some fries and a beer.

We wish you an exciting, thought-provoking and inspiring time at EARLI 2019!

Prof. Dr. Marold Wosnitza, EARLI 2019 Conference President

Judith Fränken, EARLI 2019 Conference Manager

and the EARLI 2019 Organising Committee
Coffee breaks and lunches
Coffee and refreshments will be available throughout the conference programme, allowing you to catch up with colleagues for a drink at any time of the day!
Lunch bags are offered from 11:00 onwards at the cafeteria in the C.A.R.L. building, while a sit-down lunch is served flexibly at the University Mensa between 11:15 and 14:30. The Mensa can be found just a short walk from the C.A.R.L. building at Pontwall 3. A limited amount of portable lunch bags (with sandwich, fruit and candy bars) will be available at the C.A.R.L. building cafeteria every day at a first come, first serve basis.

Conference Afterparty
In a change to previous EARLI conferences, we offer an open afterparty for all delegates, on Friday (August 16th - 22:30)! The EARLI 2019 afterparty gives all delegates the opportunity to join the informal part of the evening. No admittance fee, you will only have to pay for your drinks. The afterparty will take place at the Pontstrasse 72 – only a three minutes walk from the Coronation Hall, where the gala dinner will take place. We are looking forward to a great party!
KEYNOTE SPEAKERS

Dr. Larike Bronkhorst
Utrecht University (NL)

At the boundary of school: Dis/continuities in students’ in and out-of-school participations

Larike Bronkhorst is assistant professor at the department of Education of Utrecht University. Her research focusses on learning, development and collaboration across contexts (including but not limited to school, home, work, leisure, online) from a boundary crossing perspective. Larike also teaches in the research and academic master program Educational Sciences and in different teacher education master programs.

Prof. Dr. Gavin T.L. Brown
University of Auckland (NZ)

Products, Processes, Psychology and Technology: Quo Vadis Educational Assessment?

Prof. dr. Gavin Brown researches the technical qualities of educational assessments and the psychology of assessment. He is Associate Dean Postgraduate Research and Director of the Quantitative Data Analysis & Research Unit in the Faculty of Education & Social Work at The University of Auckland. He is an Affiliated Professor in Applied Educational Sciences at Umeå University, Sweden and an Honorary Professor in Curriculum & Instruction at the Education University of Hong Kong.

Prof. Dr. Manu Kapur
ETH Zürich (CH)

When Productive Failure Fails

Professor Manu Kapur is a Professor of Learning Sciences and Higher Education at ETH Zurich, Switzerland. Manu’s research interests lie at the intersection of the learning sciences, educational psychology, and STEM domains. He is widely known for his research on Productive Failure. For more information: www.manukapur.com.

Prof. Dr. Stuart Karabenick
University of Michigan (USA)

Motivation and Self-Regulated Learning: Introducing Strategy Motivation and Information Regulation

As Research Professor in the Combined Program In Education and Psychology at the University of Michigan I focus extensively on motivation and self-regulated learning (SRL), especially seeking help as an adaptive SRL strategy. Other areas are teacher responsibility, culture in educational contexts, and currently the application of SRL to learning analytics. Professional contributions include associate editor of Learning and Instruction, coordinator of the EARLI Motivation and Emotion SIG, and volume and series editorship of the Advances in Motivation and Achievement series.

Prof. Dr. Eckhard Klieme
DIPF (DE)

Research on Teaching: Content Matter, Practices, Quality and Effectiveness

Eckhard Klieme is a Professor of Educational Science and Director of the Center for Research on Educational Quality and Evaluation at DIPF. On an international level, he is responsible for questionnaire development in PISA and in the ongoing TALIS Video Survey. Within Germany, he directed a national study of language education, several large-scale school evaluation projects, and video-based classroom studies. His recent research is mostly dealing with foundations for Teaching Effectiveness, including concepts of teaching quality, mediators and moderators of teaching effects, and the role of culture.

Prof. Dr. Lydia Krabbendam
VU Amsterdam (NL)

Educational Neuroscience: Promises and Pitfalls

Lydia Krabbendam is professor of Neuropsychology at the Vrije Universiteit Amsterdam. Her research focuses on social cognitive development in adolescence and how this development is related to functioning in society. She obtained her PhD on social cognition in psychosis in 2000 from Maastricht University and moved to the Vrije Universiteit in 2009. She has received large personal grants, most recently an ERC Consolidator Grant to study social networks and social cognition in adolescence.
KEYNOTE SPEAKERS

Prof. Dr. Synnøve Matre
Norwegian University of Science and Technology (NO)
The Role of Writing in Education

Synnøve Matre is a professor in Norwegian language and literature at the Department of Teacher Education at the university in Trondheim (NTNU). Her research is mainly in the area of language development, children’s conversations, and writing and assessment, based on dialogical and sociocultural theory. She has been directing several research projects, latest the cross-disciplinary Developing national standards for the assessment of writing. A tool for teaching and learning (2012-2017).

Prof. Dr. Jonathan Osborne
Stanford Graduate School of Education (USA)
Argumentation, Interaction and Learning: Lessons from Science Education

Jonathan Osborne holds the Kamalachari Chair in Science Education at the Graduate School of Education, Stanford University. He started his career teaching high school physics in Inner London for 9 years and then moved to teacher training and research at King’s College in 1985. He completed his PhD in 1995 working with Professor Paul Black as his advisor looking at young children’s (age 5-11) scientific ideas and a constructivist approach to their development.

Prof. Dr. Nikol Rummel
Ruhr University Bochum (DE)
Thinking Tomorrow’s Computer-Supported Collaborative Learning: Challenges and Opportunities

Nikol Rummel is a Full Professor of Educational Psychology at Ruhr-Universität Bochum, Germany. She is also an Adjunct Professor in the Human-Computer Interaction Institute at Carnegie Mellon University, Pittsburgh, USA. One of her main research interests is on adaptive support for computer-supported collaborative learning (CSCL). Nikol is a longstanding member of EARLI and a former coordinator of SIG 6 (Instructional Design). She also is member and past president (2016-17) of the International Society of the Learning Sciences (ISLS).

CONFERENCE APP

Follow the last-minute programme changes and important announcements via the EARLI 2019 conference app, hosted by Guidebook! You can download the conference app by using the passphrase above. With the app, you can easily create your personal schedule, find practical information, connect with fellow delegates and receive push notifications for last-minute schedule changes. We strongly recommend all delegates to download the app, as it is the fastest and easiest way to consult the conference programme! Download the Guidebook app via the App or Play Store and enter the passphrase to download the EARLI 2019 app.

PASSPHRASE: earli2019
<table>
<thead>
<tr>
<th>ORGANISER</th>
<th>SYMPOSIUM TITLE</th>
<th>SCHEDULING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Giulia Messina Dahlberg</strong></td>
<td>Widening Participation? (Re)searching Institutional Pathways for Marginalized Groups</td>
<td>Monday 12.08 12:00 – 13:30 Lecture Hall - H09</td>
</tr>
<tr>
<td><strong>Bram De Wever, Ingo Kollar and Yiannis Georgiou</strong></td>
<td>Epistemic Tools for Inquiry</td>
<td>Monday 12.08 12:00 – 13:30 Lecture Hall – H08</td>
</tr>
<tr>
<td><strong>Margot van Wermeskerken and Milou van Harsel</strong></td>
<td>Using Today’s Technology to Improve Learning and Performance in (Complex) Professions</td>
<td>Monday 12.08 13:45 – 15:15 Lecture Hall – H11</td>
</tr>
<tr>
<td><strong>Tim Mainhard</strong></td>
<td>The Potential of Biophysiology for Understanding Learning and Teaching Experiences</td>
<td>Monday 12.08 13:45 – 15:15 Lecture Hall – H05</td>
</tr>
<tr>
<td><strong>Anouschka van Leeuwen and Nikol Rummel</strong></td>
<td>Teacher Dashboards for Orchestration of the Classroom: The Role of Teacher Characteristics</td>
<td>Monday 12.08 13:45 – 15:15 Lecture Hall – H04</td>
</tr>
<tr>
<td><strong>Martijn Willemse</strong></td>
<td>EAPRIL Worldcafé on Practice-Based Research</td>
<td>Monday 12.08 13:45 – 15:15 Lecture Hall – H10</td>
</tr>
<tr>
<td><strong>Michaela Glaeser-Zikuda and Alexander Groeschner</strong></td>
<td>Addressing Student Heterogeneity in Learning and Instruction in German-Speaking Countries</td>
<td>Monday 12.08 13:45 – 15:15 Lecture Hall – H06 – Amazon Hörsaal</td>
</tr>
<tr>
<td><strong>Konstantinos Christou</strong></td>
<td>Learning with Conceptual Change in Professional Working Life and Teacher Training</td>
<td>Monday 12.08 15:30 – 17:00 Lecture Hall – H09</td>
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# INVITED SYMPOSIA

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<tr>
<th>ORGANISER</th>
<th>SYMPOSIUM TITLE</th>
<th>SCHEDULING</th>
</tr>
</thead>
</table>
| Dominik E. Froehlich  
SIG 17 | Mixed Methods Social Network Analysis for Learning and Education | Monday 12.08  
15:30 – 17:00  
Lecture Hall – H07 |
| Katharina Maag Merki  
SIG 23 | Social Interaction in School Improvement and its Relation to Teacher and Student Learning | Tuesday 13.08  
08:30 – 10:00  
Lecture Hall – H10 |
| Åli Leijen  
EARLI Journals | Meet the EARLI Journal Editors | Tuesday 13.08  
10:15 – 11:45  
Lecture Hall – H06 – Amazon Hörsaal |
| Sandra Racionero-Plaza  
AMIE | Interactive Learning Environments That Support Cognitive, Emotional and Identity Development | Tuesday 13.08  
10:15 – 11:45  
Lecture Hall – H10 |
| Nadine Spörer  
E-CER | Measuring Students’ Social Participation: Innovating the Field with Behavioral Data | Tuesday 13.08  
10:15 – 11:45  
Lecture Hall – H09 |
| Inge Molenaar  
E-CER | Achievements in Measuring and Supporting Student’s Self-Regulated Learning in Learning Technologies | Tuesday 13.08  
10:15 – 11:45  
Lecture Hall – H08 |
| Wim van Dooren  
E-CER | Teaching for Conceptual Change-in Search for Learning Environments to Tackle the Natural Number Bias | Tuesday 13.08  
10:15 – 11:45  
Lecture Hall – H04 – Knorr-Bremse Hörsaal |
| Helen Jossberger  
SIG 14 | Potentials of Simulations Across Professions | Tuesday 13.08  
12:00 – 13:30  
Lecture Hall – H04 |
| Alexander Eitel and Janina Lehmann  
SIG 2 | Scary and Exciting! Emotional and Motivational Factors in Learning from Multimedia Documents | Tuesday 13.08  
12:00 – 13:30  
Lecture Hall – H08 |
# INVITED SYMPOSIA

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<th>ORGANISER</th>
<th>SYMPOSIUM TITLE</th>
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<tbody>
<tr>
<td>Annelies Kreis and Inger Marie Dalehefte SIG11</td>
<td>Innovative Research on Digital Tools and their Use in Teaching and Teacher Education</td>
<td>Tuesday 13.08 13:45 – 15:15 Lecture Hall – H05</td>
</tr>
<tr>
<td>Guido Nottbusch SIG 12</td>
<td>Writing Research from Different Perspectives</td>
<td>Tuesday 13.08 13:45 – 15:15 Lecture Hall – H07</td>
</tr>
<tr>
<td>Gert van der Westhuizen SAERA</td>
<td>Rethinking Tomorrow’s Education in South Africa</td>
<td>Tuesday 13.08 15:30 – 17:00 Lecture Hall – H07</td>
</tr>
<tr>
<td>Alexander Renkl and Anique de Bruin Emerging Field Group</td>
<td>Bridging Cognitive Load and Self-Regulated Learning: from Metacognition to Mental Effort and Back</td>
<td>Tuesday 13.08 15:30 – 17:00 Lecture Hall – H05</td>
</tr>
<tr>
<td>Lynn McAlpine SIG 24</td>
<td>Negotiating Towards Success: a Developmental Perspective on Research Writing ‘Know-How’</td>
<td>Wednesday 14.08 08:30 – 10:00 Lecture Hall – H06</td>
</tr>
<tr>
<td>Ido Davidesco and Nienke van Atteveldt Emerging Field Group</td>
<td>Portable Brain Technologies in Research on Learning and Instruction</td>
<td>Wednesday 14.08 08:30 – 10:00 Lecture Hall – H11</td>
</tr>
<tr>
<td>Alfred Weinberger SIG 13</td>
<td>Intervention Studies in Civic Education Based on the VAKE-approach</td>
<td>Wednesday 14.08 10:15 – 11:45 Seminar Room – S06</td>
</tr>
<tr>
<td>Elisabeth Moser Opitz SIG 15</td>
<td>Antecedents and Outcomes of Teaching Quality in Inclusive Classrooms</td>
<td>Wednesday 14.08 15:30 – 17:00 Lecture Hall – H10</td>
</tr>
<tr>
<td>Antti Rajala, Rupert Wegerif and Giuseppe Ritella SIG 25</td>
<td>How Can Peer Reviewing Be Made Fair for all Theoretical Frameworks in EARLI and Beyond?</td>
<td>Thursday 15.08 10:15 – 11:45 Lecture Hall – H07</td>
</tr>
<tr>
<td>Nienke van Atteveldt and Sabine Peters SIG 22</td>
<td>Emotional Influences on the Neural Mechanisms of Learning</td>
<td>Thursday 15.08 10:15 – 11:45 Lecture Hall – H05</td>
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<td>Asa Mäkitalö</td>
<td>Learning as Material Formation</td>
<td>Thursday 15.08</td>
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<td>Lecture Hall – H08</td>
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<tr>
<td>Miriam Compagnoni and Kim</td>
<td>Parent and Child Factors Associated with Self-Regulation in (Early) Childhood</td>
<td>Thursday 15.08</td>
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<tr>
<td>Gärtnern</td>
<td></td>
<td>17:15 – 18:45</td>
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<td>Lecture Hall – H04 – Knorr-Bremse Hörsaal</td>
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<tr>
<td>Åke Ingerman</td>
<td>New Horizons for Phenomenography and Variation Theory in Higher Education</td>
<td>Thursday 15.08</td>
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<td>Lecture Hall – H07</td>
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<tr>
<td>Wolfram Rollett and</td>
<td>Feedback on Teaching: Issues of Conceptualization, Operationalization and</td>
<td>Thursday 15.08</td>
</tr>
<tr>
<td>Charalambos Charalambous</td>
<td>Application</td>
<td>17:15 – 18:45</td>
</tr>
<tr>
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<td></td>
<td>Lecture Hall – H10</td>
</tr>
<tr>
<td>Laura Hirsto</td>
<td>Worldviews and Religions in Education – Perspectives to Functions and Experiences</td>
<td>Thursday 15.08</td>
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<td>17:15 – 18:45</td>
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<td>Lecture Hall – H11</td>
</tr>
<tr>
<td>Armin Weinberger</td>
<td>Argumentation, Dialogue, and Reasoning in Education: Areas of Research and Practice</td>
<td>Friday 16.08</td>
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<tr>
<td></td>
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<td>08:30 – 10:00</td>
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<tr>
<td></td>
<td></td>
<td>Seminar Room – S15</td>
</tr>
<tr>
<td>Lars Burghardt</td>
<td>Who Benefits Most? Differential Effects of Early Childhood Education and Care on Child Outcomes</td>
<td>NEW DATE - Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13:45 – 15:15</td>
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<tr>
<td></td>
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<td>Lecture Hall – H06</td>
</tr>
<tr>
<td>Frans Prins and Jan-Willem</td>
<td>Intrapersonal, Interpersonal, and Situational Factors in Feedback Processing</td>
<td>Friday 16.08</td>
</tr>
<tr>
<td>Strijbos</td>
<td></td>
<td>12:00 – 13:30</td>
</tr>
<tr>
<td></td>
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<td>Lecture Hall – H11</td>
</tr>
<tr>
<td>Hanke Korpershoek, Reinhard</td>
<td>Emotions in Education: State of the Art, Challenges and New Directions</td>
<td>Friday 16.08</td>
</tr>
<tr>
<td>Pekrun, Fani Lauermann and</td>
<td></td>
<td>12:00 – 13:30</td>
</tr>
<tr>
<td>Kristina Loderer</td>
<td></td>
<td>Lecture Hall – H05</td>
</tr>
</tbody>
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# INVITED SYMPOSIA

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<tr>
<th>ORGANISER</th>
<th>SYMPOSIUM TITLE</th>
<th>SCHEDULING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin Merkt and</td>
<td>Non-Cognitive Effects of Instructional Interventions in Applied Domains</td>
<td>Friday 16.08 15:30 – 17:00 Lecture Hall – H10</td>
</tr>
<tr>
<td>Jean-Michel Boucheix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIG 6</td>
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</tbody>
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| Halszka Jarodzka                 | New Approaches, Old Issues – New Methodologies Cast New Light Upon Known Educational Concepts | Friday 16.08 17:15 – 18:45 Lecture Hall – H11 |
| SIG 27                           |                                                                |                                   |

## EARLI GOES GREEN

To lower the environmental impact of our conference, we are taking a number of steps to reduce waste and offer eco-friendly alternatives to your conference experience. Each delegate will receive a special EARLI 2019 reusable water bottle in their conference bag, instead of using plastic cups for water breaks. Reusable porcelain coffee mugs will replace throwaway plastic or paper mugs for your daily caffeine fix. Additionally, printed programme books are available for purchase at a surcharge of € 10 to those who prefer a hard copy of the programme. The EARLI 2019 programme books will be printed on recycled paper. The EARLI 2019 conference app offers an environmentally-friendly alternative to check the last updates to the conference programme!
<table>
<thead>
<tr>
<th></th>
<th>SIG BUSINESS MEETINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01</strong></td>
<td>ASSESSMENT AND EVALUATION</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td>17:15 – 18:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H06</td>
</tr>
<tr>
<td><strong>02</strong></td>
<td>COMPREHENSION OF TEXT AND GRAPHICS</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td>18:15 – 19:15</td>
</tr>
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<td></td>
<td>Seminar Room - S09</td>
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<tr>
<td><strong>03</strong></td>
<td>CONCEPTUAL CHANGE</td>
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<tr>
<td></td>
<td>Tuesday 13.08</td>
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<td>17:15 – 18:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H10</td>
</tr>
<tr>
<td><strong>04</strong></td>
<td>HIGHER EDUCATION</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td>18:15 – 19:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H05</td>
</tr>
<tr>
<td><strong>05</strong></td>
<td>LEARNING AND DEVELOPMENT IN EARLY CHILDHOOD</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td>17:15 – 18:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H07</td>
</tr>
<tr>
<td><strong>06</strong></td>
<td>INSTRUCTIONAL DESIGN</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td></td>
<td>18:15 – 19:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H11</td>
</tr>
<tr>
<td><strong>07</strong></td>
<td>TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION</td>
</tr>
<tr>
<td></td>
<td>Tuesday 13.08</td>
</tr>
<tr>
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<td>17:15 – 18:15</td>
</tr>
<tr>
<td></td>
<td>Lecture Hall - H05</td>
</tr>
</tbody>
</table>
## SIG BUSINESS MEETINGS

<table>
<thead>
<tr>
<th>Subject</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MOTIVATION AND EMOTION</strong></td>
<td>Tuesday 13.08, 18:15 – 19:15</td>
<td>Lecture Hall - H04</td>
</tr>
<tr>
<td><strong>PHENOMENOGRAPHY AND VARIATION THEORY</strong></td>
<td>Tuesday 13.08, 17:15 – 18:15</td>
<td>Seminar Room - S06</td>
</tr>
<tr>
<td><strong>SOCIAL INTERACTION IN LEARNING AND INSTRUCTION</strong></td>
<td>Tuesday 13.08, 18:15 – 19:15</td>
<td>Lecture Hall - H08</td>
</tr>
<tr>
<td><strong>TEACHING AND TEACHER EDUCATION</strong></td>
<td>Tuesday 13.08, 17:15 – 18:15</td>
<td>Lecture Hall - H04</td>
</tr>
<tr>
<td><strong>WRITING</strong></td>
<td>Tuesday 13.08, 18:15 – 19:15</td>
<td>Lecture Hall - H10</td>
</tr>
<tr>
<td><strong>MORAL AND DEMOCRATIC EDUCATION</strong></td>
<td>Tuesday 13.08, 17:15 – 18:15</td>
<td>Seminar Room - S02</td>
</tr>
<tr>
<td><strong>LEARNING AND PROFESSIONAL DEVELOPMENT</strong></td>
<td>Tuesday 13.08, 18:15 – 19:15</td>
<td>Lecture Hall - H06</td>
</tr>
<tr>
<td>Time</td>
<td>Topic</td>
<td>Date</td>
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</tr>
<tr>
<td>15</td>
<td>SPECIAL EDUCATIONAL NEEDS</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>16</td>
<td>METACOGNITION</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>17</td>
<td>METHODS IN LEARNING RESEARCH</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>18</td>
<td>EDUCATIONAL EFFECTIVENESS</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>19</td>
<td>RELIGIONS AND WORLDVIEWS IN EDUCATION</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>20</td>
<td>INQUIRY LEARNING</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>21</td>
<td>LEARNING AND TEACHING IN CULTURALLY DIVERSE SETTINGS</td>
<td>Tuesday 13.08</td>
</tr>
<tr>
<td>Session Title</td>
<td>Date</td>
<td>Time</td>
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</tr>
<tr>
<td>Neuroscience and Education</td>
<td>Tuesday 13.08</td>
<td>18:15 – 19:15</td>
</tr>
<tr>
<td>Educational Evaluation, Accountability and School Improvement</td>
<td>Tuesday 13.08</td>
<td>17:15 – 18:15</td>
</tr>
<tr>
<td>Researcher Education and Careers</td>
<td>Tuesday 13.08</td>
<td>18:15 – 19:15</td>
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<tr>
<td>Educational Theory</td>
<td>Tuesday 13.08</td>
<td>17:15 – 18:15</td>
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<tr>
<td>Argumentation, Dialogue and Reasoning</td>
<td>Tuesday 13.08</td>
<td>18:15 – 19:15</td>
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<tr>
<td>Online Measures of Learning Processes</td>
<td>Tuesday 13.08</td>
<td>17:15 – 18:15</td>
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</table>
The main EARLI 2019 Information Desk in the foyer of the C.A.R.L. building will be opened throughout the conference. Additionally, you can find two more information desks on the first and second floor respectively! If you have any questions or you need further information, do not hesitate to come and ask us! You can also ask any of the official conference assistants, which you can easily recognise by the blue EARLI t-shirts.
Read and publish your articles in the following top journals:

Elsevier is a leading publisher of trusted, high quality peer reviewed journals in educational research.

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Frontiers in Education provides an international, scholarly forum for discussion of research-based approaches to education – particularly to PreK-16 education that leads to the flourishing of all human beings. Publishing rigorously peer-reviewed research, Frontiers in Education is led by Prof. Margaret Grogan, along with an outstanding Editorial Board.

Frontiers in Education encourages all philosophical points of view, grounded primarily in well-designed empirical research, utilizing a variety of methodologies. Interdisciplinary or multidisciplinary work is welcome. Cross-cultural and/or cross-national studies that contribute to new knowledge are highly desirable. In addition to critique, the journal seeks innovative thinking around new and promising practices and policies in every setting.

Our Specialty Sections include:
Assessment, Testing and Applied Measurement, led by Prof. Gavin Brown,
Leadership in Education led by Prof. Margaret Grogan,
Special Educational Needs led by Prof. Geoff Lindsay,
Teacher Education led by Prof. Stefnee Pinnegar and Dr. Ramona Cutri,
STEM Education led by Prof. Lianghuo Fan,
Digital Scholarship led by Prof. Eileen Scanlon

Ian Hargreaves, Journal Specialist at Frontiers in Education, is at EARLI in Aachen! He is available to talk with you about our Article Collections, publishing with us, and Open Access. Send an email to arrange a meeting.

Contact: education@frontiersin.org
Since 2017 Jacobs Foundation has been supporting EARLI. Funding from Jacobs Foundation enables EARLI to develop initiatives to promote innovation in research and support career development of young researchers. Julia Wyss, Research Fellowship Coordinator of the Jacobs Foundation and Piet Van den Bossche, member of the Executive Committee of EARLI share their thoughts on this excellent cooperation.

WHAT IS THE JACOBS FOUNDATION?

JW: “Young or old, rich or poor, man or woman – everyone has the right to a good education.” This was Klaus J. Jacobs’ credo as an entrepreneur and founder of the Jacobs Foundation. Since 1989, the Foundation has sought to benefit future generations by providing children and young people with better opportunities for development, so that they can become productive and socially responsible members of society. The Foundation focuses on three themes: The Science of Learning (SoL), Early Childhood Education in Switzerland and Rural Livelihoods in the Ivory Coast. Through SoL we generate insights into the individual prerequisites and antecedents of learning and development of children and youth, into the interactions between learning contexts and the individual, and into their consequences for learning environments and institutions. Our main instrument to achieve these goals is the support of early and mid-career researchers.

WHY ARE EARLI AND JACOBS FOUNDATION COLLABORATING?

JW: The Jacobs Foundation has a long tradition in supporting research societies to offer travel grants for young researchers from low- and middle-income countries to attend conferences. This is how our partnership with EARLI started in 2017. Later, EARLI approached us with a project proposal for the Emerging Field Groups (EFG) and Mentoring Grants. EARLI and the Jacobs Foundation have a common goal in enabling junior researchers to develop and further their careers. EARLI is a preferred partner for us in Europe, as your focus on learning and emerging field research is of highest interest to the Foundation. It has been my pleasure to accompany this collaboration from the beginning and to serve as a member of the evaluation panel for the EFGs.

PVdB: This collaboration created excellent opportunities for EARLI. We are a vibrant community of researchers in the field of education research. Through a diverse range of Special Interest Groups, a continuous dialogue and reflection is possible that drives the development of our field. EARLI is continuously dedicated to further our field and was looking for means to facilitate innovation within our community, especially in providing extra opportunities for junior members to become part of this community. With these goals in mind and with the support of the Foundation, we were able to launch the Emerging Field Groups and Mentoring Grants. The aim of the EFG initiative is to support innovative and risk-taking approaches with an emphasis on experiment, exploration and process rather than output and product. The Mentoring Grant offers the opportunity to JURE members to benefit from an international mentoring visit for a period of 2-4 weeks. The mentor, who is an EARLI member and an experienced scholar in his/her respective field, can provide guidance and support to the doctoral student.

WHY IS INVESTING IN EARLY CAREER RESEARCHERS SO IMPORTANT?

JW: For 30 years the Jacobs Foundation has been supporting excellent research and building research capacities in the fields relevant to its mission. It is not only a question of finding and supporting individual researchers. It is a question of promoting excellence, improving chances for young researchers and promoting new forms of interdisciplinary and cross-institutional cooperation. This approach has a direct effect on young scholars themselves, while it also has rejuvenating effects on partner institutions, such as EARLI. It also affects the Foundation’s work, as we benefit from their input and receive inspiration for new cutting-edge research topics in child and youth development and research-based interventions.

PVdB: I couldn’t agree more. EARLI deems the involvement of junior researchers in these initiatives essential. It offers them a much needed involvement in a continuously learning research community, while at the same time it fuels this community with fresh ideas and skills. Both initiatives, EFGs and Mentoring Grant, do this in their own specific way. For the Mentoring Grant, this is quite straightforward, by providing the means to build connections and foster the development of the junior researcher. But also in the EFGs, the active involvement of junior researchers is a requirement to apply for the funding and deemed a defining parameter to measure the longevity of the research project.

“It’s great to see that the goals of the Jacobs Foundation align so well with those of EARLI.”

WHICH OTHER OPPORTUNITIES DOES JACOBS FOUNDATION OFFER TO RESEARCHERS IN THE FIELD OF LEARNING AND INSTRUCTION?

JW: Our flagship funding program is the Jacobs Foundation Research Fellowship Program, a globally competitive program for early and mid-career researchers from all disciplines studying child development and learning. Three years of unrestricted funding allows fellows to concentrate on their research projects. But this program is not only about funding. Jacobs Foundation Research Fellows get access to the Foundation’s international network to build long-term scientific relationships and can make use of other non-financial benefits such as short-term group residencies, workshops, and alumni events. If you are an early or mid-career researcher in the field of educational research, interested in interdisciplinary collaboration and eager to engage with the Jacobs Foundation, we are looking forward to receiving your application in the years to come! We also offer researchers the opportunity to publish a blogpost on our Blog on Learning and Development (BOLD). Recently, we invited EARLI members attending EARLI 2019 specifically, as another element of the ongoing collaboration between EARLI and the Foundation. The BOLD blog is an interdisciplinary initiative dedicated to spreading the word about how children and young people develop and learn. BOLD attracts a worldwide audience of approximately 15’000 readers a month. Researchers at various stages of their careers as well as science journalists, policymakers, and practitioners can have their say.

PVdB: It is great to see that our goals align so well. A firm base for a productive collaboration. We thank the Foundation for their involvement in EARLI and look forward to future partnership!
How can we ascertain that a school is inclusive enough? Our team decided to assemble a “guide” which might help answering this question. This book summarizes the results of our work. The first chapter is a summary of the main reasons why we support and advocate school inclusion. In the second chapter we answer the question “What is school inclusion?”. The third chapter then introduces basic indicators which form school inclusion. A short overview of Czech research in the field of school inclusion in the last few years follows in the fourth chapter. The last chapter presents the results of our effort to create a tool for school inclusion evaluation. Here you can find both an evaluation and autoevaluation tool design including its qualitative and quantitative design.
The Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg aims to promote longitudinal studies in educational research in Germany. LIfBi thus provides fundamental, transregional, and internationally significant, research-based infrastructure for empirical educational research at its location in Bamberg.

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## EARLI 2019 ORGANISERS

### EARLI EXECUTIVE COMMITTEE and EARLI OFFICE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>President</td>
<td>Prof. Sanna Järvelä</td>
<td>University of Oulu</td>
</tr>
<tr>
<td>President-elect</td>
<td>Prof. Debra Myhill</td>
<td>University of Exeter</td>
</tr>
<tr>
<td>Secretary-Treasurer</td>
<td>Prof. Eleni A. Kyza</td>
<td>Cyprus University of Technology</td>
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</tbody>
</table>

### Ordinary Members

- Prof. Cecilia Lundholm
  - Stockholm University
- Prof. Äli Leijen
  - University of Tartu
- Prof. Daniel Muijs
  - University of Southampton
- Prof. Piet Van den Bossche
  - University of Antwerp

### Ex-officio Members

- Prof. Marold Wosnitza
  - RWTH Aachen University
- Prof. Lars-Erik Malmberg
  - University of Oxford
- Prof. Hans Gruber
  - University of Regensburg
- Prof. Thomas Martens
  - Medical School Hamburg
- Prof. Mien Segers
  - Maastricht University
- Patrick Belpaire
  - EARLI Office

### EARLI Office

- Thomas Daniëls
- Tonia Davison
- Lisa Vanhaeren
- Lore Verschakelen
- Inneke Berghmans
- Stef Heremans
# EARLI 2019 ORGANISERS

## INTERNATIONAL AND LOCAL ORGANISING COMMITTEE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARLI 2019 President</td>
<td>Prof. Marold Wosnitza</td>
<td>RWTH Aachen University</td>
</tr>
<tr>
<td>EARLI 2019 Conference Manager</td>
<td>Judith Fränken</td>
<td>RWTH Aachen University</td>
</tr>
<tr>
<td>EARLI 2017 Conference President</td>
<td>Prof. Eero Ropo</td>
<td>Tampere University</td>
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<tr>
<td>EARLI 2017 Conference Manager</td>
<td>Prof. Sari Yrjänäinen</td>
<td>University of Turku</td>
</tr>
<tr>
<td>JURE 2019 Co-chairs</td>
<td>Dr. Kerstin Helker</td>
<td>RWTH Aachen University</td>
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<td>JURE 2019 Co-chairs</td>
<td>Judith Fränken</td>
<td>RWTH Aachen University</td>
</tr>
<tr>
<td>JURE 2017 Co-chairs</td>
<td>Janniina Vlasov</td>
<td>University of Tampere</td>
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<td>JURE 2017 Co-chairs</td>
<td>Laura Pylväs</td>
<td>University of Tampere</td>
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<td>JURE 2017 Co-chairs</td>
<td>Maiju Kinossalo</td>
<td>University of Tampere</td>
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<td>Local Scientific Programme Committee</td>
<td>Judith Fränken</td>
<td>RWTH Aachen University</td>
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<td>Dr. Kerstin Helker</td>
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<td>Dr. Philipp Nolden</td>
<td>RWTH Aachen University</td>
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<td>Local Scientific Programme Committee</td>
<td>Kerstin Theilmann</td>
<td>RWTH Aachen University</td>
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<tr>
<td>Local Scientific Programme Committee</td>
<td>Dr. Karen Zschocke</td>
<td>RWTH Aachen University</td>
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</tbody>
</table>
MONDAY
12 AUGUST 2019
# Policy Making Session: 1

**Time:** 10:30-11:45  
**Location:** Lecture Hall - H01

### POLICY MAKING PANEL SESSION: EARLI 2019 POLICY MAKING SESSION

**Chair**  
Sanna Järvelä, University of Oulu, Finland  

**EARLI 2019 Policy Making Session**  
Brikena Xhamaqi, LLLP, Belgium; Jeroen Van Merrienboer, Maastricht University, Netherlands; Debra Myhill, University of Exeter, United Kingdom; Daniel Muijs, Ofsted, United Kingdom

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### Session A: 1

**Time:** 12:00-13:30  
**Location:** Lecture Hall - H09  

### SIG INVITED SYMPOSIUM: SIG 21: WIDENING PARTICIPATION? (RE)SEARCHING INSTITUTIONAL PATHWAYS FOR MARGINALIZED GROUPS

**Chair**  
Charles Max, University of Luxembourg, Luxembourg  

**Organiser**  
Giulia Messina Dahlberg, University of Gothenburg, Sweden  

**Discussant**  
Sylvie Vigno, University of Gothenburg, Sweden

- **Researching 21st century institutional trajectories.**  
  Sangeeta Bagga-Gupta, Jönköping University, Sweden

- **Unaccompanied asylum-seeking children' multiple transitions in Italy**  
  Alessio Surian, Università degli Studi di Padova, Italy; Diego Di Masi, University of Torino, Italy; Francesca Novella, University of Padova, Italy

- **Encouraging Student Participation in Intercultural Classroom Interaction**  
  Karl Hedman, Jönköping University, Sweden

- **Holistic learning activities for the inclusion of marginalized youths: the case of Luxembourg**  
  Jin-Young Choi, multi LEARN Institute, Luxembourg; Philippe Blanca, multi-LEARN Institute for Interaction and Development in Diversity, Luxembourg; Gudrun Ziegler, multi LEARN Institute for Interaction and Development in Diversity, Luxembourg

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### Session A: 2

**Time:** 12:00-13:30  
**Location:** Lecture Hall - H08

### SIG INVITED SYMPOSIUM: SIG 20: EPISTEMIC TOOLS FOR INQUIRY

**Chair**  
Cindy Hmelo-Silver, Indiana University, United States

**Organisers**  
Bram De Wever, Ghent University, Belgium; Ingo Kollar, University of Augsburg, Germany; Yiannis Georgiou, Cyprus University of Technology, Cyprus

**Discussant**  
Jim Slotta, OISE, University of Toronto, Canada

- **Investigating concept-mapping in support of students’ epistemic practices in outdoors inquiry**  
  Elieni Kyza, Cyprus University of Technology, Cyprus; Nicoletta Pantela, Cyprus University of Technology, Cyprus

- **Constructive and Example-Based Scaffolds: Effects for Individual and Collaborative Science Learning**  
  Sarah Bichler, Ludwig-Maximilians-Universität (LMU), Germany; Marcia Linn, University of California-Berkeley, United States; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

- **Scaffolding Inquiry with Multiple Documents: The Knowledge Society Sandbox**  
  Saar Bartzili, University of Haifa, Israel; Asnat R. Zohar, University of Haifa, Faculty of Education, Israel; Shiri Mor-Hagani, haifa university, Israel; Talia Shlomi-Ebloz, University of Haifa, Faculty of Education, Israel; Ruti Ben-Yishai, University of Haifa, Faculty of Education, Israel

- **Scaffolding Explanations and Epistemic Development for Systems (SEEDS)**  
  Cindy Hmelo-Silver, Indiana University, United States; Joshua Diamond, Indiana University, United States; Ravit Gelan Duncan, Rutgers University, United States; Clark Chinn, Rutgers University, United States; Zachary Ryan, University of Indiana at Bloomington, United States; Melissa Moreland, University of Indiana at Bloomington, United States; Na’ama Av-Shalom, Rutgers University, United States
### Session A: 3  
**Time: 12:00-13:30**  
**Location: Lecture Hall - H05**

**SYMPOSIUM: ENACTING AGENCY IN TEACHER EDUCATION: PERSPECTIVES ON PRE-SERVICE TEACHERS AND TEACHER EDUCATORS**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Research skills in action: Voices of Finnish pre-service teachers’ professional agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hege Hermansen, Oslo</td>
<td>Minna Heikkilä, University of Turku, Finland; Tuule Iskala, University of Turku, Finland; Mirjama Mikkola-Erdmann, University of Turku, Finland; Anu Warinowski, University of Turku, Finland</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisers</th>
<th>Heading for the future: Building professional agency among Finnish teacher educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minna Heikkilä, Turku</td>
<td>Päivi Hõlkä, University of Jyväskylä, Finland; Katiä Vähäsanteri, University of Jyväskylä, Finland</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussant</th>
<th>Tracing the enactment of agency in program design and development in teacher education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natasa Panic, Edinburgh</td>
<td>Hege Hermansen, University of Oslo, Norway</td>
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<tr>
<th>Fostering Professional Digital Competence through transformative agency in Teacher Education</th>
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<tbody>
<tr>
<td>Torunn Aanesland Stremme, University of Oslo, Norway; Greta Gudmundsdottir, University of Oslo, Faculty of Education, Norway; Lisbeth M Brevik, University of Oslo, Norway; Andreas Lund, University of Oslo, Norway</td>
</tr>
</tbody>
</table>

### Session A: 4  
**Time: 12:00-13:30**  
**Location: Lecture Hall - H07**

**SINGLE PAPER: GOAL ORIENTATION AND MOTIVATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>The risk of implementing an approach to enhance motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inge Molenaar, Nijmegen</td>
<td>Esther Cannius, University of Agder, Norway; Marianne Engen Matre, University of Agder, Norway</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Athlete and non-athlete students’ perfectionistic strivings and achievement goal orientations</th>
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<tbody>
<tr>
<td>Jenny Stählin, University of Helsinki, Finland; Anri Pukk, National Defence University, Finland; Heta Tuominen, University of Helsinki, Finland; Markku Nemiwirta, University of Oslo, Norway</td>
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<tr>
<th>A cross-cultural comparison of the patterning of achievement goal orientations</th>
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<tbody>
<tr>
<td>Markku Nemiwirta, University of Oslo, Norway; Christian Brandmo, University of Oslo, Norway; Svjetlana Kolić-Veljovac, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia; Pahjina-Ronč Rosanda, University of Rijeka, Croatia; Barbara Rončević Zubkovic, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia</td>
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<tr>
<th>Using metaphors to understand students’ mindsets about intelligence in Germany and Canada</th>
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<tbody>
<tr>
<td>Elisabeth Wegner, University of Freiburg, Germany; Nigel Mantou Lou, University of Alberta, Canada; Christina Späth, University of Freiburg, Germany; Pauline Mertens, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany</td>
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</tbody>
</table>

### Session A: 5  
**Time: 12:00-13:30**  
**Location: Seminar Room - S07**

**SINGLE PAPER: LEARNING AND PROFESSIONAL DEVELOPMENT**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Teacher collaboration in an independent research project: implications for self-regulated learning</th>
</tr>
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<tbody>
<tr>
<td>Stephen Billett, Australia</td>
<td>Ivy Lau, The University of Hong Kong, Hong Kong; Susan Bridges, The University of Hong Kong, Hong Kong</td>
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<tr>
<th>Specialists’ Views on Feedback at the Medical Workplace</th>
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<tr>
<td>Helen Jossberger, University of Regensburg, Germany; Miriam Schlachterova, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany</td>
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<tr>
<th>Exploring student futures as business graduates: insights from capstone and internship experiences</th>
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<tr>
<td>Colin Jevons, Monash Business School, Australia; Sophie Lindsay, Monash, Australia; Dawn Bennett, Curtin University, Australia; Kelly Benati, Monash University, Australia</td>
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<th>Teacher self-regulation and stress: an intervention study to strengthen professional competence</th>
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<tr>
<td>Simone Berweger, Schwyz University of Teacher Education, Switzerland; Christine Wolframm, University of Teacher Education Zurich, Switzerland; Andrea Kock Frey, Zürich University of Teacher Education, Switzerland; Zippora Bühler, Zurich University of Teacher Education, Switzerland; Christine Bieli Buschor, Zurich University of Teacher Education, Switzerland</td>
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### SINGLE PAPER: COMPETENCIES IN LEARNING AND PROFESSIONAL DEVELOPMENT

**Chair**  
Valerie Sotardi, University of Canterbury, New Zealand

- **Influence of Attended Courses on Domain-specific Knowledge Growth in Higher Education Economics**  
  Marie-Theres Nagel, Johannes Gutenberg University Mainz, Germany; Jasmin Schlax, Johannes Gutenberg-University Mainz, Germany; Olga Ziatkin-Trotzsch guarantees, Johannes Gutenberg-University Mainz, Germany; Judith Jтомински, Humboldt-University Berlin, Germany; Carla Köhling-Thees, Johannes Gutenberg-University Mainz, Germany; Roland Happ, Johannes Gutenberg University Mainz, Germany

- **Entrepreneurial competences in student companies at school: Development of a research instrument**  
  Taiga Brahm, University of Tübingen, Germany; Ute Grewe, University of Tuebingen, Germany

- **Career competence in secondary schools: the impact of endogenous factors**  
  Svenja Ohlemann, Technische Universität Berlin; Katja Driesel-Lange, Westfälische Wilhelms-Universität Münster, Germany

- **Disentangling the interplay of knowledge, intelligence and general competences in problem solving**  
  Andreas Rausch, University of Mannheim, Germany; Kristina Kögler, University of Hohenheim, Germany

### SINGLE PAPER: QUANTITATIVE METHODS IN HIGHER EDUCATION

**Chair**  
Lori Leddyer, University of Technology Sydney, Australia

- **Interalrelations between perceived learning environment in higher education and students' test anxiety**  
  Gerda Hagenauer, University of Salzburg, Austria; Doris Itner; PH Bern - School of Teacher Education, Switzerland; Florian Hofmann, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Melanie Stephan, University of Erlangen-Nuremberg, Germany; Michaela Glasner-Zikuda, University of Erlangen-Nuremberg, Germany; Annette Luobbeck, Universität Hamburg, Germany; Andrea Bernholt, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Barbara Moschner, Carl von Ossietzky University Oldenburg, Germany

- **Valid Measurement of Professional Competencies in Higher Education – Challenges and Perspectives**  
  Hans Anand Pant, Humboldt-Universität zu Berlin; Germany; Jennifer Fischer, Johannes Gutenberg-Universität, Germany; Olga Ziatkin-Trotzsch guarantees, Johannes Gutenberg-Universität Mainz, Germany; Corrina Lautenbach, Humboldt-Universität Berlin, Germany

- **Modeling and predicting sustainable changes in university students' satisfaction**  
  Christoph Kietz, RWTH Aachen University, Germany; Axel Mayer, RWTH Aachen University, Germany

- **The effects of a Biomedical Sciences curriculum reform on students' competence development**  
  Sanne Rovers, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands; Hans Savelberg, Maastricht University, Netherlands

### SINGLE PAPER: ONLINE LEARNING AND TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION

**Chair**  
Eletheria Goniad, Aristotle University of Thessaloniki, Greece

- **Lifelong learning: The formal and informal learning in technology-rich environments**  
  Hanna Nygren, University of Jyväskylä, Finland; Juhani Raatopuro, University of Jyväskylä, Finland; Rajja Hämäläinen, University of Jyväskylä, Finland; Karl Nissinen, University of Jyväskylä, Finland; Bram De Wever, Ghent University, Belgium

- **An empirical study on factors influencing barriers to learning in Massive Open Online Courses.**  
  Maarja Henderiks, Open University of the Netherlands, Netherlands; Karel Kreijts, Open University of the Netherlands, Netherlands; Marco Kaiz, University of Education-Heidelberg, Germany

- **A lossless person-oriented analysis of web lecture beliefs, motivation and lecture utilization**  
  Cornils de Brabander, Leiden University, Netherlands; Nadira Saab, Leiden University, Netherlands; Folke Gaistra, Leiden University, Netherlands

- **Webinars in Higher Education and Professional Training: A Meta-Analy**  
  Andreas Gegenfurtner, University of Passau, Germany; Christian Ebner, Technische Hochschule Deggendorf, Germany
### Session A: 9  
**Time:** 12:00-13:30  
**Location:** Seminar Room - S14

**SINGLE PAPER: SOCIAL INTERACTION IN LEARNING AND INSTRUCTION**

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

- A dialogical approach to large-scale assessments: Students’ reasoning about items in PISA and TIMSS
  Jelena Radisic, University of Oslo, Norway; Aleksander Baucal, University of Belgrade, Serbia; Smiljana Josic, Institute for Educational Research (Belgrade), Serbia

- Hybrid minds and the socio-material nature of human cognition: Learning research in a digital age
  Roger Säljö, University of Gothenburg, Sweden

- Inclusive Classroom Norms and Children’s Attitudes toward Students with Hyperactive Behavior
  Luciano Gasser, University of Teacher Education Luzerne (PH Luzern), Switzerland; Jeanine Grütter, University of Teacher Education Luzerne (PH Luzern), Switzerland; Loredana Torchetti, University of Teacher Education Luzerne (PH Luzern), Switzerland

- The implementation of participatory approaches in interviews involving adolescents
  Gilles Dieumegard, Université de Montpellier, France; Emma Cunningham, University of Auckland, Faculty of Education, New Zealand

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### Session A: 10  
**Time:** 12:00-13:30  
**Location:** Seminar Room - S03

**SINGLE PAPER: PEER INTERACTION**

**Chair**
Lauren Barth-Cohen, University of Utah, United States

- Perceived Teacher Affective Support and Relatedness to Peers in Relation to EFL Achievement
  Emotions
  Ezgi Gunes, Middle East Technical University, Turkey; Yesim Capa Aydin, Middle East Technical University, Turkey

- Investigating functional participatory roles in productive collaborative science learning
  Oh-Pekka Herimäki, University of Turku, Finland; Simone Volet, Murdoch University, Australia; Marja Vaaras, University of Turku, Finland

- School engagement, peer academic support, and peer networks among Finnish 7th graders
  Tuira Palonen, University of Turku, Finland; Katarina Salmila-Aro, Helsinki University, Finland; Kai Helkaramnen, University of Helsinki, Finland

- The Networked Student: Contextualizing Scientific Knowledge for Educational Practice
  Marjan Vermoulian, Heerlen Open Universitat, Netherlands; Femke Nijland, Open University, Netherlands; Olga Firsova, Open University of the Netherlands, Netherlands; Stefan Robbers, Open University Netherlands, Netherlands

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### Session A: 11  
**Time:** 12:00-13:30  
**Location:** Seminar Room - S04

**SINGLE PAPER: ARGUMENTATION, DIALOGUE AND REASONING**

**Chair**
Jean-Michel Bouchaix, University of Dijon, LEAD-CNRS, France

- Why is dialogic instruction so difficult to implement? The forces of rituals in the math classroom
  Einat Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel

- Reasoning like a student vs. reasoning like an engineer: Can PBL shift students’ thinking?
  Susan Nolan, University of Washington, United States; Edward Michor, Oregon State University, United States; Miko Koretsky, Oregon State University, United States

- The development of undergraduates' mechanistic explanations of gene environment interaction
  Michal Haskel-Itaib, Weizmann Institute of Science, Israel; Ravil Duncan, Rutgers University, United States; Anat Yarden The Weizmann Institute of Science, Weizmann Institute of Science, Israel

- Developing and validating proof comprehension tests in university mathematics
  Juan Pablo Mejia-Ramos, Rutgers University, United States; Keith Weber, Rutgers University, United States; Kristen Lue, Texas State University, United States
### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS

**Chair**  
Irma Talic, University of Luxembourg, Luxembourg

**In situ, synchronous self-assessment: a new research strategy for accessing individual SA processes.**  
Ana Remesal Ortiz, Universitat de Barcelona, Spain; Abolfazl Khanbeiki, Universitat de Barcelona, Spain; Sareh Attarrevani, Universitat de Barcelona, Spain; Zarah Parham, Universitat de Barcelona, Spain

**Factor structure of the CLASS in Singapore preschools serving mainstream and special needs children**  
EeLynn Ng, National Institute of Education, Singapore; Rebecca Bull, Macquarie University, Australia; Alfredo Bautista Arellano, National Institute of Education, Singapore; Kenneth Poon, National Institute of Education, Singapore

**Student perceptions of testing accommodations in university mathematics: An analysis of power**  
Juuso Henrik Nieminen, University of Helsinki, Finland

**No matter the grain size, retrieval practice promotes long term retention.**  
Alice Latimier, Ecole Normale Supérieure, France; Arnaud Riegert, Didask, France; Thierry Ly, Didask, France; Franck Ramus, Ecole Normale Supérieure, France

### SINGLE PAPER: TEACHING AND INSTRUCTION

**Chair**  
Bernadette Dilger, University of St.Gallen, Switzerland

**A video portfolio instrument for the summative assessment of teacher candidates’ teaching competence**  
Kerstin Baueierlin, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

**Student teacher learning in teacher education: Teacher educators’ and student teachers’ perspectives**  
Auli Toomi, University of Helsinki, Finland; Tiina Soini-Ikonen, University of Tampere, Finland; Janne Petainen, University of Eastern Finland, Finland; Kirsy Pyhältö, University of Oulu / University of Helsinki, Finland

**Primary teachers’ understanding and practices as related to students’ interest in science learning**  
Anne-Mari Näkk, Tallinn University, Estonia; Inge Timothtuk, Tallinn University, Estonia

**One teacher, several classes=same instruction? Between-classes-variability of instructional quality**  
Thamar Voss, University of Freiburg, Germany; Lisa Henke, University of Tübingen, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany; Joerg Wittwer, University of Freiburg, Germany

### SINGLE PAPER: INSTRUCTIONAL DESIGN AND INQUIRY LEARNING

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

**How to guide effective student questioning?**  
Harry Stokol, HAN University of Applied Sciences, Netherlands; Broge De Vries, VU University Amsterdam, Netherlands; Theo Bastiaens, Open University of the Netherlands, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands

**Impact of prior knowledge and targeted inquiry abilities on the effectiveness of explicit instruction**  
Andreas Vorholzer, Justus Liebig University Giessen, Germany; Claudia von Aufschnaiter, Justus Liebig University Giessen, Germany

**Teens and Robots in Search of a Superbug - a New Approach to Authentic Inquiry**  
Bat-Shahar Dorfman, Weizmann Institute of Science, Israel; Amir Mitchell, University of Massachusetts, United States; Orna Dahan, Weizmann Institute of Science, Israel; Anat Yarden The Weizmann Institute of Science, Weizmann Institute of Science, Israel

**Developing Competencies for Scientific Theory Building**  
Hillary Swanson, Northwestern University, United States
### Session A: 15
**Time:** 12:00-13:30  
**Location:** Seminar Room - S16

**SINGLE PAPER: ATTITUDES AND BELIEFS, MOTIVATION AND EMOTION**

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<td>Eva Brante, Malmö University, Sweden</td>
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Unpacking the Female Advantage Myth in Language and Literacy: Perspectives of Parents in China  
Jing Li, University of Cambridge, United Kingdom  

Math, anxiety and occupational preferences association via developmental perspective  
Hili Eidin-Levy, University of Haifa, Israel; Laurain Fares, University of Haifa, Faculty of Education, Israel; Orly Rubinstein, Haifa University, Israel  

Can we promote adaptive reactions to academic errors? Experimental findings and implications  
Maria Tucks, University of Salzburg, Austria; Markus Dresel, University of Augsburg, Germany  

Students’ attributional profiles: Prevalence, development and links with motivation and achievement  
Adrid Poorthuis, Utrecht University, Netherlands; Jaap Schuitela, University of Amsterdam, Netherlands; Lisette Hornstra, Utrecht University, Netherlands

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### Session A: 16
**Time:** 12:00-13:30  
**Location:** Seminar Room - S06

**SINGLE PAPER: LEARNING APPROACHES**

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<td>Koula Charitonos, The Open university UK, United Kingdom</td>
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Implementing pedagogical innovation: A multiple-case study approach  
Int Sasson, University of Haifa, Israel; Itamar Yehuda, Tel-Hai College, Shamir Resarach Institute - University of Haifa, Israel; Shirley Medjiansky, University of Haifa, Israel  

Exploring the material mediation of dialogic space  
Josephine Moate, University of Jyväskylä, Finland  

Learning profiles and the (re)design of a learning environment  
Gerry Geitz, NHL Stenden University of Applied Sciences, Netherlands; Annouk Donker-Bargstra, NHL-Stenden University of Applied Sciences, Netherlands  

Using journal writing to support future teachers’ acquisition of applicable knowledge for teaching  
Martina Grachen, University of Freiburg, Germany; Elisabeth Wegner, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

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### Session A: 17
**Time:** 12:00-13:30  
**Location:** Seminar Room - S12

**SINGLE PAPER: MATHEMATICS IN EARLY CHILDHOOD EDUCATION**

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<td>Andrea Haenni Hoti, University of Teacher Education of Lucerne, Switzerland</td>
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Fine motor skills and executive functions in early childhood interact to predict academic skills  
Kiat Hui Khng, National Institute of Education/Nanyang Technological University, Singapore, Singapore  

Impact of Early Literacy and Numeracy on Later Reading and Mathematics Achievements  
Bereny Csabai, University of Szeged, Hungary; Attila Páskor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Ágnes Hodi, MTA-SZTE, Hungary; Attila Rausch, ELTE Eötvös Loránd University, Budapest, Hungary; Gyöngyösi Molnár, University of Szeged, Hungary  

Phonological awareness mediates the effect of SES on math achievement across the kindergarten years  
David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rebecca Bull, Macquarie University, Australia; EeLynn Ng, National Institute of Education, Singapore  

Performance to produce numerals with fingers contributes to mathematics achievement in children  
Josebri Orrantia, University of Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Laura Meija, University of Salamanca, Spain

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## Single Paper: Student Learning in Higher Education

**Chair:** Mathias Meje, University of Bern, Switzerland

**Practices of dialogic feedback across disciplines**
Eidt Pitt, University of Kent, United Kingdom

**Achievement emotions and learning in the first year at university**
Alexandra Corina Nicolaeescu, University of Oslo, Norway; Dirk Tempelaar, Maastricht University, Netherlands; Mien Segers, Maastricht University, Netherlands; Wim Gijselaars, Maastricht University, Netherlands

**Academic self-concept, motivational regulation, and cognitive learning strategies of students**
Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany; Annette Lohbeck, Universität Hamburg, Germany

**Motivation-related competences and activities university students (intend to) do to learn**
Eva Bosch, Heidelberg University, Germany; Eva Seifried, Heidelberg University, Germany; Birgit Spinath, Heidelberg University, Germany

## Single Paper: Instructional Design

**Chair:** Janis Bosch, Universität Potsdam, Germany

**Development of a financial literacy-curriculum—the Effect of a Criterion-Based Construction**
Ewelina Mania, German Institute for Adult Education, Germany; Monika Tröster, German Institute for Adult Education, Germany; Prof. Dr. Esther Winther, University of Duisburg-Essen, Vocational Education and Training, Germany

**Can Digital Portrait Drawing Help to Enhance Socio-Emotional Skills of Adolescents?**
Lydia Kastner, Leibniz Institut für Wissensmedien, Germany; Aida Just, LEAD Graduate School, Germany; Susana Ruiz Fernández, Leibniz Institut für Wissensmedien, Germany; Sven Nommensen, Herzog Anton Ulrich-Museum, Germany; Peter Gerjets, Leibniz Institut für Wissensmedien, Germany

**Multiperspectivity in history textbooks. A classroom experiment**
Marc Kropman, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands; Marijne Scherjon, University of Amsterdam, Netherlands

**Design patterns of asynchronous online problem-based learning for professional development**
Susan Bridges, The University of Hong Kong, Hong Kong; Sdenka Zobeida SALAS PILCO, The University of Hong Kong, Hong Kong; Nancy W.Y. Lau, The University of Hong Kong, Hong Kong; LK Lap Ki Chan, The University of Hong Kong, Hong Kong; Ling Li, The University of Hong Kong, Hong Kong

## Single Paper: Metacognition

**Chair:** Sarah Howard, University of Wollongong, Australia

**Trajectories of monitoring and control in high and low performing elementary school children**
Marina Steiner, University of Bern, Switzerland; Mariette van Loon, University of Bern, Switzerland; Natalie Bayard-Guggisberg, University of Bern, Switzerland; Claudia Roobers, University of Bern, Switzerland

**The Role of Cognitive Engagement on Clinical Reasoning Performance**
Shan Li, McGill University, Canada; Juan Zheng, McGill University, Canada; Susanne Lajolie, McGill University, Canada

**Novice teachers’ knowledge of effective study strategies**
Tim Surma, Open University of the Netherlands, Netherlands; Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands; Paul A. Kirschner, Open University of the Netherlands, Netherlands

**Which learner characteristics contribute to overestimations of text comprehension?**
Stefanie Golke, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany
SINGLE PAPER: THE CRUCIAL SKILLS OF EXECUTIVE FUNCTIONS AND ATTENTION IN THE FIRST SWEDISH PRESCHOOL RCT STUDY

Chair
Isabelle Skalni, Lancaster University and University of Applied Sciences and Arts Western Switzerland, United Kingdom

The background of the first evidence-based Swedish preschool study and educators’ reception
Hillevi Lenz Taguchi, Stockholm University, Sweden

Set-up, hypotheses, and results from an RCT-study in Swedish Preschools
Tove Gerholm, Stockholm University, Sweden; Hillevi Lenz Taguchi, Stockholm University, Sweden; Sofia Frankenberg, Stockholm University, Sweden; Petter Kallionen, Stockholm University, Sweden; Signe Toner, Stockholm University, Sweden; Susanne Kjallander, Stockholm University, Sweden; Anna Palmer, Stockholm University, Sweden

Language, selective auditory attention and executive functions in Swedish preschoolers
Signe Toner, Stockholm University, Sweden; Tove Gerholm, Stockholm University, Sweden

A pop-up brainwave lab at Swedish preschools – measuring brain function for selective attention
Petter Kallionen, Stockholm University, Sweden; Signe Toner, Stockholm University, Sweden

SINGLE PAPER: ATTITUDES, BELIEFS AND ACHIEVEMENT

Chair
Floris van Blankenstein, Leiden University Medical Center, Netherlands

Gender-science stereotypes: The secret participants in science competitions
Anneke Steeg, Kiel University, Germany; Tim Hoefler, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Ika Parchmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

Young people’s view on Democracy: a latent class analysis in Flanders considering civic knowledge
Ellen Claes, KU Leuven, Belgium; Dimokritos Kavadias, Vrije Universiteit Brussel (VUB), Belgium

Young critical citizens? Predicting trust in political institutions among 14-year old students
Johanna Fee Ziemes, University of Duisburg-Essen, Germany; Hermann J. Aba, University of Duisburg-Essen, Germany

The good disobedient citizen. The relation of civic knowledge to concepts of ideal citizenship
Katrin Hahn-Laudenberg, University of Wuppertal, Germany; Vegard Svagård, OsloMet – Oslo Metropolitan University, Norway

SIG INVITED SYMPOSIUM: SIG 7: USING TODAY’S TECHNOLOGY TO IMPROVE LEARNING AND PERFORMANCE IN (COMPLEX) PROFESSIONS

Chairs
Margot van Weneskerken, Erasmus Medical Center, Netherlands; Milou van Harstel, Avans University of Applied Sciences / Utrecht University, Netherlands

Discussant
Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

Virtual patients in medical education: Instructional bonanza for clinical reasoning?
Martin R. Fischer, University Hospital of LMU Munich, Germany

The use of simulation-based training for lifelong learning in health professions
Jeroen Van Merriënboer, Maastricht University, Netherlands

Simulation-based learning of non-technical skills in medicine
Hans Gruber, University of Regensburg, Germany; Thomas Bein, Faculty of Medicine, University of Regensburg, Germany; Michael Henninger, Department of Media Didactics, Pädagogische Hochschule Weingarten, Germany; Matthias Jacob, Department of Anesthesiology, Intensive Care Medicine and Pain Medicine, Brothers of Mercy Hospital St. Elizabeth, Straubing, Germany

Taking workplace safety at construction sites to greater heights: VR training for scaffolders
Bas Kolhoff, University of Twente, Netherlands
### SIG INVITED SYMPOSIUM: SIG 4: WHAT FEATURES OF INSTRUCTION PROMOTE HIGHER EDUCATION STUDENTS’ INTEREST IN THEIR SUBJECT?

**Chair**  
Kathleen M. Quinlan, University of Kent, United Kingdom

**Discussant**  
Sari Lindblom, University of Helsinki, Finland

How interest and other domain values develop in five disciplines over three years  
Kirsti Lonka, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Silja Silvanto, University of Helsinki, Finland; Katarina Salmen-Aro, Helsinki University, Finland

What triggers students’ situational interest during higher education lectures?  
Kathleen M. Quinlan, University of Kent, United Kingdom

Students’ interest in tertiary science education laboratory  
Nils Dohn, Aarhus University, Denmark

Interest and added value: Participation in both laboratory research and concurrent STEM teaching  
K. Ann Reinsinger, Swarthmore College, United States; Yol Tibbetts, University of Virginia, United States; Jena Gilbert-Merrill, Swarthmore College, United States

### INVITED SESSION: EFG: THE POTENTIAL OF BIOPHYSIOLOGY FOR UNDERSTANDING LEARNING AND TEACHING EXPERIENCES

**Chair**  
Tim Mainhard, Utrecht University, Netherlands

**Organiser**  
Tim Mainhard, Utrecht University, Netherlands

**Discussant**  
Reinhard Pekrun, Ludwig-Maximilians-Universität, Germany

Salivary cortisol in teachers’ stress research - correlates, pitfalls and promises  
Anna-Lisa Jörg, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

A high heart rate during teaching: Indicator of challenge or threat?  
Tim Mainhard, Utrecht University, Netherlands; Monika Donker, Utrecht University, Netherlands; Nora McIntyre, University of York, United Kingdom; Tamara Van Gog, Utrecht University, Netherlands

The control-anxiety-performance relationship: self-report and physiological measures  
Anna-Lena Roos, University of Konstanz, Germany; Thomas Goetz, University of Konstanz, Germany; Makte Kranich, University of Zurich, Switzerland

Bio-Psychological Factors Implicated in Fear of Failure and Test Achievement in Science  
Emma Burns, University of New South Wales, Australia; Andrew Martin, University of New South Wales, Australia; Roger Kennett, University of New South Wales, Australia; Joel Pearson, University of New South Wales, Australia; Marianne Mansour, University of New South Wales, Australia; Brad Papworth, University of New South Wales, Australia; Lars-Erik Malmberg, University of Oxford, United Kingdom

### INVITED SESSION: TEACHER DASHBOARD FOR ORCHESTRATION OF THE CLASSROOM: THE ROLE OF TEACHER CHARACTERISTICS

**Chair**  
Nikol Rummel, Ruhr University Bochum, Germany

**Organisers**  
Anouschka van Leeuwen, Utrecht University, Netherlands; Nikol Rummel, Ruhr University Bochum, Germany

**Discussant**  
Susan Goldman, University of Illinois at Chicago, United States

The relation between dashboard function, teaching experience, and technological self-efficacy  
Anouschka van Leeuwen, Utrecht University, Netherlands; Nikol Rummel, Ruhr University Bochum, Germany

Teacher dashboard use for orchestrating active learning in large lectures  
Jennifer Olsen, École Polytechnique Fédérale de Lausanne, Switzerland; Silan Háklov, CHIL, EPFL, Switzerland; Louis Faucon, CHIL, EPFL, Switzerland; Pierre Dillenbourg, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

How teacher characteristics relate to teacher dashboard use and feedback practices  
Inge Molenaar, Radboud University Nijmegen, Netherlands; Caroien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands

Teachers’ epistemic beliefs and orchestration through dashboards of groups working with CSCL tools  
Baruch Schwarz, Hebrew University of Jerusalem, Israel; Osama Swidan, Ben-Gurion University, Israel; Israel; Naomi Prusak, Hebrew University, Israel; Israel; Alk Palatnik, Shaarani Academic Religious Teachers’ College, Israel, Israel; Advah Livny, Hebrew University, Israel, Israel
## INVITED SESSION: EAPRIL WORLDCAFÉ ON PRACTICE-BASED RESEARCH

**Chair**  
Frank De Jong, Aeres University of Applied Sciences & Open University Heerlen, Netherlands

**Organiser**  
Martijn Willemsen, Windesheim University of applied sciences, Netherlands

**Discussant**  
Frank De Jong, Aeres University of Applied Sciences & Open University Heerlen, Netherlands

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<td>Harry Stokhof, HAN University of Applied Sciences, Netherlands</td>
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<td>Kati Määttä, University of Oulu, Finland</td>
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<td>Hanne Tack, Ghent University, Belgium</td>
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## INVITED SESSION: ADDRESSING STUDENT HETEROGENEITY IN LEARNING AND INSTRUCTION IN GERMAN-SPEAKING COUNTRIES

**Chair**  
Michaela Glaesser-Zikuda, University of Erlangen-Nuremberg, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany

**Discussant**  
Hilda Borko, Stanford University, United States; Sanna Järvelä, University of Oulu, Finland

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<th>Academic self-concept and intrinsic motivation as predictors of mathematics and reading achievement</th>
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<td>Burkhard Griewosz, University of Salzburg, Austria; Claudia Schreiner, University of Innsbruck, Austria; Alexander Steiger, Federal Institute for Education Research, Innovation, and Development of the Austrian School System, Austria; Maximilian Egger, University of Education Upper Austria, Linz, Austria; Andrea Kulmhofer-Bommer, Federal Institute for Education Research, Innovation, and Development of the Austrian School System, Austria; Christian Wiesner, Federal Institute for Education Research, Innovation, and Development of the Austrian School System, Austria</td>
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<th>Self-regulation and assessment in school – cognitive and affective effects of rubrics and portfolio</th>
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<td>Michaela Glaesser-Zikuda, University of Erlangen-Nuremberg, Germany; Florian Hofmann, Friedrich-Alexander-University of Erlangen-Nuremberg, Germany; Susi Klaß, Friedrich Schiller University Jena, Germany</td>
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<th>Dealing with disruptions in heterogeneous classrooms - a training on prevention and intervention</th>
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<td>Felicitas Thiel, Freie Universität Berlin, Germany; Victoria L. Barth, Freie Universität Berlin, Germany; Diemut Ophardt, Technische Universität Berlin, Germany; Irina-Rosa Kumschick, PH Luzern, Professions- und Unterrichtsforschung, Switzerland</td>
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<th>How Productive Classroom Discourse Supports Teacher Judgment of Students’ Self-concept of Ability</th>
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<td>Maralina Weil, Technical University of Munich, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Tina Seidel, Technische Universität München, Germany; Ann-Kathrin Schindler, Technische Universität München, Germany</td>
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## SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**  
Saku Määttä, University of Turku, Finland

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<th>The impact of student teachers’ prerequisites on their acquisition of pedagogical knowledge</th>
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<td>Christina Dr. Watson, University of Paderborn, Germany</td>
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<th>Using relevance instructions to support the integration of teacher knowledge</th>
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<td>Alexander Renkl, University of Freiburg, Germany; Helene Reche, University of Freiburg, Germany; Eileen Spitzmesser, University of Freiburg, Germany; Alisa Röddiger, University of Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany</td>
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<th>Teachers’ diagnosis of students’ deep understanding</th>
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<td>Satomi Shibuya, University of Tokyo, Japan; Yuri Uesaka, The University of Tokyo, Japan; Bethany Rittle-Johnson, Vanderbilt University, United States; Enko Ota, University of Tokyo, Japan; Man Fukuda, University of Tokyo, Japan</td>
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<tr>
<th>Learning from teacher perspective: Teachers’ professional vision of students’ mathematical learning</th>
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<td>Maikku Pouta, University of Turku, Finland; Eino Lehtinen, University of Turku, Finland; Tuire Patonen, University of Turku, Finland</td>
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</table>
### Session B: 8

**Time:** 13:45-15:15  
**Location:** Seminar Room - S04

#### SINGLE PAPER: INQUIRY LEARNING

**Chair**  
Vasileios Symeonidis, University of Innsbruck, Austria

- **Learning from reviewing peers’ concept maps in an inquiry context: to comment or to grade?**  
  Natalia Dmochowska, University of Twente, Netherlands; Hannie Gijlers, University of Twente, Netherlands; Ton de Jong, University of Twente, Netherlands

- **It’s Not Only What You Say, But How You Say It: Prosodic and Content Analysis Of Teacher’s Talk**  
  Rajai Hamalainen, University of Jyväskylä, Finland; Bram De Wever, Ghent University, Belgium; Teija Waarvamaa, University of Tampere, Finland; Anne-Maria Laukkonen, University of Tampere, Finland; Joni Länsä, University of Jyväskylä, Finland

- **Detrimental effects of constructive learning activities on students’ learning**  
  Andreas Lachner, University of Tübingen, Germany; Juliane Richter, Leibniz-Institut für Wissensmedien, Germany; Leonie Jacob, Leibniz-Institut für Wissensmedien (IWM), Germany; Friederike Bildenroth, Eberhard Karls Universität Tübingen, Germany; Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany

- **Views of middle school teachers and students on developing self-directed learning**  
  Penny Van Deur, Flinders University of South Australia, Australia

### Session B: 9

**Time:** 13:45-15:15  
**Location:** Seminar Room - S12

#### POSTER PRESENTATION: EARLY CHILDHOOD EDUCATION

**Chair**  
Iva Stuchlíková, University of South Bohemia Ceske Budejovice, Czech Republic

- **How do mothers support pre-schoolers in understanding emotions during picturebook reading?**  
  Elisabeth Duursma, University of Wollongong, Australia; Cheryl Ho, University of Wollongong, Australia

- **Problem solving through educational robotics in children with Developmental Coordination Disorder**  
  Margarida Romero, Laboratoire d'Innovation et Numérique pour l'Education, France; Analis Leroy, University of Nice-Sophia Antipolis, France

- **A scale for measuring attitudes towards mathematics in preschoolers: ESAMAT**  
  Carlos Mera, University of Cadiz, Spain; Manuel Aguilar-Villagran, University of Cadiz, Spain; Belén Román, University of Cadiz, Spain; Estibaliz Aragon, University of Cadiz, Spain; Jose I. Navarro-Guzman, University of Cadiz, Spain

- **A cross-cultural study on children’s perception and play and learning: Results from Hong Kong**  
  Doris Cheng, Tung Wah College, Hong Kong; James Ko, The Education University of Hong Kong, Hong Kong

- **Bilingualism and verbal self-regulation: A study on underlying processes of the bilingual advantage**  
  Susanne Enke, University of Leipzig, Germany; Catherine Gunzenhauser, Leipzig University, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Henrik Saabach, University of Leipzig, Germany

### Session B: 10

**Time:** 13:45-15:15  
**Location:** Seminar Room - S10

#### POSTER PRESENTATION: ARGUMENTATION, REASONING AND INQUIRY LEARNING

**Chair**  
Sabine Manzel, Universität Duisburg-Essen, Germany

- **The effects of multimodal representations on students during cooperative, inquiry-based science**  
  Robyn Gilles, The University of Queensland, Australia

- **Development of Instructions for Disagreement Resolutions in Reasoning about Diverging Information**  
  Toshio Mochizuki, Serafu University, Japan; Clark Chinn, Rutgers University, United States; Randi Zimmerman, Rutgers University Graduate School of Education, United States; Etsu Yamaguchi, Kobe University, Japan

- **Quality of Collaborative Group Engagement in Face-to-Face High-School Physics Argumentation**  
  Dallas Drago-Cindic, University of North Carolina at Chapel Hill, United States; Nikki Lobczowski, University of North Carolina at Chapel Hill, United States; Sara Bazzazewski, The Pennsylvania State University, United States; Jeff Greene, University of North Carolina, United States; Ana Butler, The Pennsylvania State University, United States; P. Karen Murphy, The Pennsylvania State University, United States

- **Analyzing students’ causal historical reasoning. Effects of a professional development program.**  
  Jannet van Drie, University of Amsterdam, Netherlands; Gerhard Stolc, RICDE / University of Amsterdam, Netherlands

- **Linking out-of-school and in-classroom instruction using a Citizen Science Approach to Learning**  
  Alena Rogele, University of Tübingen, Germany; Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany; Christoph Randler, University of Tübingen, Germany

- **The effect of using smart devices for communication to support inquiry-based learning**  
  Külli Kori, Tallinn University, Estonia; Ellis Vana, University of Tartu, Estonia
### POSTER PRESENTATION: EDUCATIONAL PSYCHOLOGY

**Chair**
Tobias Fredlund, University of Oslo, Norway

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<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Situation specificity of educational practitioners' subjective theories</td>
<td>Jean-Luc Paty, University of Salzburg, Austria</td>
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<td>Do dimensional upward comparisons serve self-enhancement needs?</td>
<td>Tobias Baumann, University of Wuppertal, Germany</td>
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<tr>
<td>Building a New Model for the Formation and Regulation of Emotions in Collaborative Learning</td>
<td>Nikki Lobczowski, University of North Carolina at Chapel Hill, United States</td>
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<tr>
<td>FaceReader as a means to detect primary school students’ emotions during science workshops</td>
<td>Elisa Vihunen, University of Helsinki, Finland; Kalle Juuti, University of Helsinki, Finland; Anni Loukomes, University of Helsinki, Finland; Jari Lavonen, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland</td>
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<tr>
<td>The translation and validation of the interest/deprivation young children scale to Swedish</td>
<td>John Kaneko, Stockholm University, Sweden</td>
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<tr>
<td>The Longitudinal Interplay Among Early Family Risks, Self-Efficacy and Socio-Emotional Development</td>
<td>Fabio Sticca, Marie Meierhofer Children's Institute, Switzerland; Olivia Gasser-Haas, Marie Meierhofer Institute for the Child, Switzerland; Corina Wustmann Seiler, Pädagogische Hochschule Zürich, Switzerland</td>
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### POSTER PRESENTATION: EDUCATIONAL EFFECTIVENESS, ACCOUNTABILITY AND SCHOOL IMPROVEMENT

**Chair**
Christopher Osterhaus, Ludwig-Maximilians-Universität, Germany

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<th>Title</th>
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<tr>
<td>The contribution of school characteristics to secondary school students’ citizenship skills</td>
<td>Eline Godaert, Ghent University, Belgium; Lisa De Schasempeester, Ghent University, Belgium; Johan van Braak, Ghent University, Belgium</td>
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<tr>
<td>MOOC Effectiveness as a Reflection of MOOC Learner’s Goals Set and Achieved</td>
<td>Polina Peiker, Lomonosov Moscow State University, Russian Federation</td>
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<td>Applicability of an academic resilience model</td>
<td>Dóra Fanni Szabó, MTA-SZTE Research Group on the Development of Competencies, Hungary</td>
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<tr>
<td>Relationship between choices in general upper secondary school and admission to educational sciences</td>
<td>Jenni Kunnari, University of Oulu, Finland; Joulii Pursiainen, University of Oulu, Finland; Esa Laara, University of Oulu, Finland; Jarmo Rusanen, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland</td>
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<td>Differential perception of the usefulness of standardized student assessments</td>
<td>Kathrin Vettorazzi, ISQ - Berlin Brandenburg Institute for School Quality Improvement, Germany; Marina Wenger, ISQ - Berlin Brandenburg Institute for School Quality Improvement, Germany; Anna Lena Schilling, Freie Universität Berlin, Germany; Holger Gaertner, Freie Universität Berlin, Germany</td>
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<td>Significant learning experiences of Estonian students at a ‘happy school’</td>
<td>Eda Herla, Tallinn University, Estonia; Tiili Kuurme, Tallinn University, Sweden</td>
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### POSTER PRESENTATION: PRE-SERVICE TEACHER EDUCATION

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

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<th>Title</th>
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<tr>
<td>What prevents Social Innovation in Kindergarten?</td>
<td>Jasmin Luthardt, University of Applied Science Potsdam, Germany</td>
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<tr>
<td>Authenticity in a role-play simulation of diagnostic interviews for pre-service mathematics teachers</td>
<td>Stefan Ulbr, Ludwig-Maximilians-Universität (LMU), Germany; Bernhard Marczynski, University of Munich (LMU), Germany; Kathleen Stürmer, University of Tübingen, Germany; Christof Wecker, Universität Hildesheim, Germany; matthias siebeck, Ludwig Maximilians University, Germany</td>
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<tr>
<td>Simulations to help pre-service teachers in diagnosing scientific reasoning in physics and biology</td>
<td>Amadeus J. Pickal, University of Hildesheim, Germany; Christof Wecker, Universität Hildesheim, Germany; Birgit J. Neuhaus, LMU Munich, Germany; Raimund Girwedz, LMU Munich, Germany</td>
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<tr>
<td>Preservice teachers’ experience in an innovative training activity: Serious games as protected space</td>
<td>Christian Sebastián, Pontificia Universidad Católica de Chile, Chile; Maria Josefa Smart Torrealba, Pontificia Universidad Católica de Chile, Chile; Sebastián Zapata, Pontificia Universidad Católica de Chile, Chile; Martin Vergara Wilson, Pontificia Universidad Católica de Chile, Chile; Macarena Sanhueza Céspedes, Pontificia Universidad Católica de Chile, Chile; Maria Rosa Lissi, Pontificia Universidad Católica de Chile, Chile</td>
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<td>Comparing strategies to develop teachers’ epistemological beliefs in the intersubjective plane</td>
<td>Martin Vergara Wilson, Pontificia Universidad Católica de Chile, Chile; Macarena Sanhueza Céspedes, Pontificia Universidad Católica de Chile, Chile; Christian Sebastián, Pontificia Universidad Católica de Chile, Chile; Maria Josefa Smart Torrealba, Pontificia Universidad Católica de Chile, Chile; Maria Rosa Lissi, Pontificia Universidad Católica de Chile, Chile</td>
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<td>Aggression-management competence development: the effect of online clinical simulations</td>
<td>Delphine Franco, University of Ghent, Belgium; Martin Valcke, Ghent University, Belgium</td>
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### POSTER PRESENTATION: LEARNING AND EDUCATIONAL TECHNOLOGY

**Chair**  
Ivy Lau, The University of Hong Kong, Hong Kong

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<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Word count and helpfulness ratings in online peer reviews: creating effective learning environments</td>
<td>Sarah Faye, University of California, Davis, United States</td>
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<tr>
<td>Measuring higher education students’ engagement through multimodal data</td>
<td>Pieter Vanneste, KU Leuven, Belgium; Annelies Raess, KU Leuven, Belgium; Iva Windey, KU Leuven, Belgium; Fien Depape, KU Leuven, Belgium; Wim Van den Noortgate, imec-iTEC, KU Leuven campus Kulak Kortrijk, Esleme Sambelaan 51, 8500 Kortrijk, Belgium; Faculty of Psychology and Educational Sciences, KU Leuven, Dekenstraat 2, 3000 Leuven, Belgium, Belgium</td>
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<td>Supporting learners’ self-regulated learning in Massive Open Online Courses</td>
<td>Renée Jansen, Utrecht University, Netherlands; Anouschka van Leeuwen, Utrecht University, Netherlands; Jeroen Janssen, Utrecht University, Netherlands; Rianne Conijn, Tilburg University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands</td>
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<tr>
<td>Heuristics in software modelling: An eye tracking study</td>
<td>Florian Hauser, Regensburg University of Applied Sciences, Germany; Rebecca Reuter, Regensburg University of Applied Sciences, Germany; Andreas Gegenfurtner, University of Passau, Germany; Hans Gruber, University of Regensburg, Germany; Jürgen Mottok, Regensburg University of Applied Sciences, Germany; Ivonne Hustler, Regensburg University of Applied Sciences, Germany</td>
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<td>The E-Learning Setting Circle: Critical Issues for E-Learning Research and Theory Development</td>
<td>Marco Roth, University of Cologne, Germany; Kai Kaspar, University of Cologne, Germany</td>
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<tr>
<td>Informal learning via using webpages and its potential for developing financial literacy</td>
<td>Baerbel Fuestenau, TU Dresden, Germany; Mandy Hommel, TU Dresden, Germany</td>
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<thead>
<tr>
<th>Session: Session B: 15</th>
<th>Time: 13:45-15:15</th>
<th>Location: Seminar Room - S06</th>
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<tbody>
<tr>
<td><strong>POSTER PRESENTATION: ATTITUDES AND BELIEFS</strong></td>
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<td><strong>Chair</strong> Markus H. Hetter, Bielefeld University, Germany</td>
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<td><strong>The influence of teaching approach on students’ conceptual learning in Physics</strong> Christian Tarchi, University of Florence, Italy; Lucia Bigozzi, University of Florence, Italy; Federica Stefanelli, University of Florence, Italy</td>
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<td><strong>Understanding Students’ Perceptions of Writing Feedback</strong> Sarah Marris, Virginia Commonwealth University, United States; Sharon Zumbrunn, Virginia Commonwealth University, United States; Eric Ekholm, Virginia Commonwealth University, United States</td>
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<td><strong>What is Inclusion – Developing a Questionnaire to Assess Concepts of Inclusive Education</strong> Jennifer Lambrecht, University of Potsdam, Germany; Stefanie Bosse, University of Potsdam, Germany; Katja Bogda, University of Potsdam, Germany; Jessica Jaehne, University of Potsdam, Germany; Nadine Spitzer, University of Potsdam, Germany</td>
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<td><strong>Acquiring entrepreneurial competences in higher education studies: learners’ preliminary intentions</strong> Carla Quesada-Pallarés, Universitat Autònoma de Barcelona, Spain; Richard Turnstaff, University of Leeds, United Kingdom; Susan Whittle, University of Leeds, United Kingdom; Karen Burland Clark, University of Leeds, United Kingdom</td>
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<td><strong>Exploring Happy Victimization in the context of business and organizations</strong> Karin Heinrichs, Pädagogische Hochschule Oberösterreich, Austria; Christian Schadt, Georg-August-Universität Göttingen, Germany</td>
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<th>Time: 13:45-15:15</th>
<th>Location: Seminar Room - S09</th>
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<tr>
<td><strong>POSTER PRESENTATION: TEACHING AND TEACHER EDUCATION</strong></td>
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<td><strong>Chair</strong> Chiel van der Veen, VU University Amsterdam, Netherlands</td>
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<td><strong>Learning journals support knowledge integration of history teacher students</strong> Christina Szuba, Albert-Ludwigs University Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany</td>
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<td><strong>Development of an Instrument for Measuring Teachers’ Knowledge of Mathematical Equivalence</strong> Emine Simsek, Loughborough University, United Kingdom; Ian Jones, Loughborough University, United Kingdom; Iro Xenoudiou-Dervou, Loughborough University, United Kingdom; Margaret Dowens, The University of Nottingham Ningbo China, China</td>
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<td><strong>Are educational sciences too soft? Student teachers’ attitudes towards educational sciences</strong> Joao Wittwer, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany; Helen Eins, University of Freiburg, Germany</td>
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<td><strong>Learning tasks: Which role do they play in music lessons? A mixed-method approach</strong> Sandra Degens, University of Zurich, Switzerland</td>
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<td><strong>Planning for sensemaking: What do pre-service teachers consider when designing modeling activities?</strong> Candice Guy-Gaytán, University of Nevada, Reno, United States</td>
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<td><strong>Designing Flexible, Web-based forms of Professional Development to Impact Teacher Learning</strong> Nanette Seago, WestEd, United States; Elizabeth Dyer, WestEd, United States</td>
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</tbody>
</table>
**Session B: 17**  
**Time: 13:45-15:15**  
**Location: Seminar Room - S02**

**POSTER PRESENTATION: LITERACY**

**Chair**  
Rola Ajawie, Deakin University, Australia

Peer assessment to enhance primary school pupils’ oral competencies. The peer best designed feedback  
Stéphane Colognesi, Université catholique de Louvain (UCL), Belgium; Liesje Coeptjens, Université catholique de Louvain (UCL), Belgium; Caroline Vassart, Université catholique de Louvain (UCL), Belgium; Benoit Blondeau, Université catholique de Louvain (UCL), Belgium

Prevalence and stability of comorbid reading and arithmetic fluency problems in primary school  
Mike Aro, University of Jyväskylä, Finland; Jenni Putinnen, University of Jyväskylä, Finland; Rikka Heikkilä, University of Jyväskylä, Finland; Tuire Koponen, University of Jyväskylä, Finland

Reference to Rhetoric: Children's Metalinguistic Awareness and their Achievement in Writing  
Moira Newton, University of Auckland, New Zealand

Cultivation of STEM professionals: Evidences from top-15 participating economies in PISA 2015 Study  
Soo-i Mok, University of Macau, Macao; Pou Seong Sit, University of Macau, Macao; Kwok-cheung Cheung, University of Macau, Macao; Man-ki Leong, University of Macau, Macao

Improving preschool language outcomes via professional development: an RCT  
Sandra Mathers, University of Oxford, United Kingdom; Iram Siraj, University of Oxford, United Kingdom

Enhancing the home language environment using digital technology  
Alex Hodgkiss, University of Oxford, United Kingdom; Sandra Mathers, University of Oxford, United Kingdom; Fiona Jelley, University of Oxford, United Kingdom

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**Session B: 18**  
**Time: 13:45-15:15**  
**Location: Seminar Room - S13**

**POSTER PRESENTATION: MIXED-METHOD RESEARCH**

**Chair**  
Sari Yrjänäinen, University of Turku, Finland

Support Programmes at Primary Schools - a Multimethod Study of Good-practice Schools  
Stefanie Schnebel, University of Education Weingarten, Germany; Sandra Langer, University of Education Weingarten, Germany

Characteristics of planning, implementation and evaluation of additional professional support  
Tina Vrsnik Perše, University of Maribor, Slovenia; Marta Licardo, University of Maribor, Slovenia; Katja Kodir, University of Maribor, Slovenia

Eliciting socially shared metacognitive regulation in ill-structured problems  
Mari Ader, Welten Institute - Open University of the Netherlands, Netherlands; Jan van Bruggen, Open University, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands

Teaching immigrant children: A multi-method approach to teacher identity negotiation  
Sotiri Pappa, University of Jyväskylä, Finland; Anneli EstiPalto, University of Jyväskylä, Finland; Virpi-Lisa Kykyri, University of Jyväskylä, Finland; Josephine Moato, University of Jyväskylä, Finland

Examining Teachers’ Strategies to Judge Student Achievement from a Cue Utilization Perspective  
Chunmei Zhu, University of Passau, Germany; Qianguang Yang, Jiangnan University, China; Detlef Urrahne, University of Passau, Germany

Network analysis as a unifying element in quantitative and qualitative research approaches  
Matthias Meier, University of Bern, Switzerland
# MONDAY, 12 AUGUST 2019

## Session B: 19 | Time: 13:45-15:15 | Location: Seminar Room - S03

### POSTER PRESENTATION: SOCIAL INTERACTION IN LEARNING AND INSTRUCTION

<table>
<thead>
<tr>
<th>Chair</th>
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<tr>
<td>Hege Hermansen, University of Oslo, Norway</td>
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<td><strong>Nurturing the fluid body language of receptive-responsive dialogue – Key pedagogic challenges</strong></td>
<td>Eva Vass, Western Sydney University, Australia; Gabriella Deszpot, Liszt Academy of Music, Hungary</td>
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<td><strong>Time on Task of Students in Inclusive Classrooms - Results of a multi-perspective video analysis</strong></td>
<td>Blanka Troll, Leuphana Universität Lüneburg, Germany; Michael Besser, Leuphana University of Lüneburg, Germany</td>
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<td><strong>What is learning for secondary-school students? Students’ perceptions examined in Brazil and Finland</strong></td>
<td>Julene Ferreira, University of Tampere, Finland</td>
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<td><strong>Learning Language using a Digital Communication Platform</strong></td>
<td>Kristin Kitsgaard Sjøhelle, Volda University College, Norway</td>
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<td><strong>Anxiety, Mathematics Performance and Profession Preference of Students. A Longitudinal Study</strong></td>
<td>Lauran Fares, University of Haifa, Israel</td>
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</tbody>
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## Session B: 20 | Time: 13:45-15:15 | Location: Seminar Room - S15

### POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Chair</th>
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<tr>
<td>Anne Nevgi, University of Helsinki, Finland</td>
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<tr>
<td><strong>An Analytic Framework for Inter-organizational Collaboration in Inclusive Education</strong></td>
<td>Jantien Gerdes, Vrije Universiteit Amsterdam, Netherlands; Sui Lin Goei, Wincscheim University of Applied Sciences, Netherlands; Mariette Huizinga, Vrije Universiteit Amsterdam, Netherlands; Doret de Ruyter, University of Humanistic Studies, Netherlands</td>
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<tr>
<td><strong>Veteran and Novice Teacher Participation in Collaborative Reflective Inquiry</strong></td>
<td>Livat Eshchar - Netz, Ben-Gurion University of the Negev, Israel; Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel; Adam Letzstein, Ben-Gurion University of the Negev, Israel</td>
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<td><strong>Reforming Vocational Teacher Education - Workplace-orientated and Technology enhanced approach</strong></td>
<td>Jiri Vippola, Tampere University of Applied Sciences, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Katja Vähäkantta, University of Jyväskylä, Finland</td>
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<td><strong>Teacher-reflection and organizational knowledge development in master-teacher programmes in Hungary</strong></td>
<td>Krisztián Urban, Eötvös Loránd University, Hungary; Judit Sziváv, Eötvös Loránd University, Budapest, Hungary; Nóra Rapos, ELTE University, Faculty of Education and Psychology, Hungary</td>
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<tr>
<td><strong>Exploring the impact of a PD training on history teachers' reading strategy instruction</strong></td>
<td>Marlies ter Baak, University of Groningen, Netherlands; Marie-Christine Oppernekker, University of Groningen, Netherlands; Mayeine Deurk, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands</td>
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<td><strong>Audio diaries: developing pre-service teachers’ reflective practices</strong></td>
<td>Noemi Binta-Szekely, Babes-Bolyai University, Romania</td>
</tr>
</tbody>
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### POSTER PRESENTATION: MOTIVATION

**Chair**

Tina Nielsen, University of Copenhagen, Denmark

It’s still learning a language: Motivational profiles for learning own and new languages
Guinna Oga-Baldwin, Waseda University, Japan; Luke Fryer, The University of Hong Kong, Hong Kong

A Multilevel, Longitudinal Examination of Students’ and Teachers' Growth Orientation in Mathematics
K沿线 Bostwick, UNSW, Australia; Andrew Martin, University of New South Wales, Australia; Rebecca Collie, University of New South Wales, Australia; Tracy Durksen, University of New South Wales, Australia

Quantitative Self-Efficacy Across the First Year of College: Trajectories by Gender and STEM Major
Jaeyeon Han, University of Kentucky, United States; Ellen Usher, University of Kentucky, United States; Cainong Li, University of Kentucky, United States; Calah Ford, University of Kentucky, United States; Xiaoyin Chen, University of Kentucky, United States; Kelsey Corcoran, University of Kentucky, United States; Cara Work, University of Kentucky, United States; Christa Brown, University of Kentucky, United States

Effects of different design features on the motivation to participate in non-formal music programs
Kathrin Simola, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Verena Wißbret, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Lisa Birnbauer, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Stephan Kroener, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

Exploring the Within-Person Structure of Motivation and Emotion
Ayame Tamura, Doshisha University, Japan; Ryo Ishii, Doshisha University, Japan; Ayano Yagi, Kochi University of Technology, Japan; Koniaki Fukuzumi, Kochi University, Japan; Aya Hatano, Japan Society for the Promotion of Science & Kochi University of Technology, Japan; Michiko Sakaki, University of Reading, United Kingdom; Ayumi Tanaka, Doshisha University, Japan; Kou Murayama, University of Reading, United Kingdom

The effects of nudges on reading motivation, reading frequency, and reading comprehension.
Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Ilois Wildeman, Vrije Universiteit Amsterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands; Adriana Bus, Vrije Universiteit Amsterdam, Netherlands

Perfectionism and reasons behind goals - A closer look at striving for grades and success
Amiti Pulkka, National Defence University, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Helsinki, Finland; Markku Niemivirta, University of Oslo, Norway

### SYMPOSIUM: MIXED METHODS SOCIAL NETWORK ANALYSIS IN LEARNING AND EDUCATION: THE PAST, THE PRESENT, THE FUTURE

**Chair**

Bart Rienties, Open University, United Kingdom

**Organiser**

Dominik E. Froehlich, University of Vienna, Austria

**Discussant**

Jasperina Brouwer, University of Groningen, Netherlands

Networks of musicians at different expert levels
Manuel Laengler, University of Regensburg, Germany; Markus Nivala, University of Gothenburg, Sweden; Jasperina Brouwer, University of Groningen, Netherlands; Tuire Palonen, University of Turku, Finland; Hans Gruber, University of Regensburg, Germany

Understanding the social transition experiences of doctoral students
Jenna Mittelmeier, University of Manchester, United Kingdom; Bart Rienties, Open University, United Kingdom; Divya Jindal-Snape, University of Dundee, United Kingdom; Kate Zhang, The American University of Paris, France

Unpacking beginning teachers’ collegial network structure: A mixed-method social network study
Laura Monique Thomas, Ghent University, Belgium; Melissa Tuytens, University of Ghent, Belgium; Geert Devos, Ghent University, Belgium; Geert Keijtsemans, Katholieke Universiteit Leuven, Belgium; Ruben Vanderlinden, Ghent University, Belgium

Mapping Mixed Methods Approaches to Social Network Analysis in Learning and Education
Dominik E. Froehlich, University of Vienna, Austria
### Session B: 23
**Time:** 13:45-15:15  
**Location:** Seminar Room - S05

#### SINGLE PAPER: SELF-EFFICACY AND MOTIVATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Sonia Ilie, University of Cambridge, United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Do achievement goals influence students’ causal attributions for success in the context of writing?</td>
</tr>
<tr>
<td>Authors</td>
<td>Francesca Suter, University of Zurich, Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Carmen Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHfW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland</td>
</tr>
<tr>
<td>Title</td>
<td>Development and Validation of the Situation-Specific Expectancy-Value Form of Learning Motivation</td>
</tr>
<tr>
<td>Authors</td>
<td>Kerstin Kisieliski, TU Dresden - Psychology of Learning and Instruction, Germany; Susanne Narciss, TU Dresden, Germany</td>
</tr>
<tr>
<td>Title</td>
<td>Relationships between the changes in interest, self-efficacy, and perceived difficulty during a task</td>
</tr>
<tr>
<td>Authors</td>
<td>Katarina Nuutila, University of Helsinki, Finland; Samuel Greiff, University of Luxembourg, Luxembourg; Sirkku Kupillas, University of Helsinki, Finland; Matthias Stader, Ludwig-Maximilians-Universität (LMU), Germany; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Helsinki, Finland; Markku Niemivirta, University of Oslo, Norway</td>
</tr>
<tr>
<td>Title</td>
<td>Promoting Motivational Regulation with a Learning Diary</td>
</tr>
<tr>
<td>Authors</td>
<td>Thomas Martens, Medical School Hamburg, Germany</td>
</tr>
</tbody>
</table>

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### Session C: 1
**Time:** 15:30-17:00  
**Location:** Lecture Hall - H09

#### SIG INVITED SYMPOSIUM: SIG 3: LEARNING WITH CONCEPTUAL CHANGE IN PROFESSIONAL WORKING LIFE AND TEACHER TRAINING

<table>
<thead>
<tr>
<th>Chair</th>
<th>Gertraud Benke, Klagenfurt University, Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organiser</td>
<td>Konstantinos Christou, University of Western Macedonia, Greece</td>
</tr>
<tr>
<td>Discussant</td>
<td>Lina Markauskaite, University of Sydney, Australia</td>
</tr>
<tr>
<td>Title</td>
<td>Teaching for conceptual change. How about the teachers?</td>
</tr>
<tr>
<td>Authors</td>
<td>Erik Meij, Windesheim University of Applied Sciences, Netherlands; Annette Smits, Windesheim University, Netherlands</td>
</tr>
<tr>
<td>Title</td>
<td>Applying Conceptual Change Research to Teacher Professional Development</td>
</tr>
<tr>
<td>Authors</td>
<td>Stella Vosniadou, Flinders University, Australia</td>
</tr>
<tr>
<td>Title</td>
<td>How can knowledge restructuring and conceptual change be coupled?</td>
</tr>
<tr>
<td>Authors</td>
<td>Hans Gruber, University of Regensburg, Germany; Jörg Marienhagen, University of Regensburg, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany</td>
</tr>
<tr>
<td>Title</td>
<td>Career-long Conceptual Change in the Medical Profession</td>
</tr>
<tr>
<td>Authors</td>
<td>Els Boshuizen, Open University of the Netherlands, Netherlands</td>
</tr>
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</table>

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### Session C: 2
**Time:** 15:30-17:00  
**Location:** Lecture Hall - H07

#### SIG INVITED SYMPOSIUM: SIG 17: MIXED METHODS SOCIAL NETWORK ANALYSIS FOR LEARNING AND EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Jasperina Brouwer, University of Groningen, Netherlands</th>
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<tbody>
<tr>
<td>Organiser</td>
<td>Dominik E. Froehlich, University of Vienna, Austria</td>
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<tr>
<td>Discussant</td>
<td>Dominik E. Froehlich, University of Vienna, Austria</td>
</tr>
<tr>
<td>Title</td>
<td>Around and around: The concentric circle method as powerful tool to collect MMSNA data</td>
</tr>
<tr>
<td>Authors</td>
<td>Piet Van den Bossche, University of Antwerp, Belgium; Sara Van Waes, University of Antwerp, Belgium</td>
</tr>
<tr>
<td>Title</td>
<td>Social network analysis and activity theory: A symbiotic relationship</td>
</tr>
<tr>
<td>Authors</td>
<td>Victoria Murphy, Open University, United Kingdom; Bart Rienties, Open University, United Kingdom; Allison Littlejohn, Open University, United Kingdom</td>
</tr>
<tr>
<td>Title</td>
<td>The Role of Mixed-Method Social Network Analysis in Educational Sciences</td>
</tr>
<tr>
<td>Authors</td>
<td>Natasa Pantic, University of Edinburgh, United Kingdom; Laura Monique Thomas, Ghent University, Belgium; Jasperina Brouwer, University of Groningen, Netherlands; Sarah Galey, University of Edinburgh, United Kingdom; Dominik E. Froehlich, University of Vienna, Austria</td>
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<tr>
<td>Title</td>
<td>Nomination data in classroom settings. SNA and peer relationships</td>
</tr>
<tr>
<td>Authors</td>
<td>Tuire Palonen, University of Turku, Finland</td>
</tr>
</tbody>
</table>
### Session C: 3

**Time: 15:30-17:00**

**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

**SYMPOSUM: ANALYTICAL APPROACHES FOR INVESTIGATING KNOWLEDGE CO-CREATION IN HIGHER EDUCATION**

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

**Organisers**
Hammi Muukkonen, University of Oulu, Finland; Crina Damas, University of Oslo, Norway

**Discussant**
Monika Hamlet, University of Oslo, Norway

- Constructing shared understanding of complex problems: An inscriptive blending perspective
  Natasha Arthurs, The University of Sydney, Australia; Lina Markauskaite, University of Sydney, Australia

- Analyzing learning through co-creation of knowledge objects in software engineering education
  Crina Damas, University of Oslo, Norway; Rachelle Esterhazy, University of Oslo, Norway

- Collaborative reasoning over domain knowledge and strategic processes - an exploratory case study
  Pia Naukkari, University of Oulu, Finland; Jaana Isokatilä, University of Oulu, Finland; Nikk& Jobczowski, University of North Carolina at Chapel Hill, United States; Sara Järvelä, University of Oulu, Finland; Jeff Greene, University of North Carolina, United States

- Learning knowledge work practices in different types of courses in agricultural sciences
  Minna Lakala, University of Helsinki, Finland; Hammi Muukkonen, University of Oulu, Finland; Hanna-Riitta Kymäläinen, Department of Agricultural Sciences, University of Helsinki, Finland; Lisa Ilomäki, University of Helsinki, Finland; Auli Toom, University of Helsinki, Finland

### Session C: 4

**Time: 15:30-17:00**

**Location:** Lecture Hall - H10

**SYMPOSUM: IMPLICIT THEORIES IN EDUCATION**

**Chairs**
Sille Hertel, Ruprecht-Karls-Universität Heidelberg, Germany; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

**Organiser**
Katharina Kriebbaum, Heidelberg University, Germany

**Discussant**
Barbara Schober, University of Vienna, Austria

- Manipulation of implicit theories and effects on parental co-regulation in preschoolers
  Maren Stern, University of Heidelberg, Germany; Kim Gärtners, Heidelberg University, Germany; Sille Hertel, Ruprecht-Karls-Universität Heidelberg, Germany

- The role of implicit theories and grit in predicting students’ academic motivation and achievement
  Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Francesca Stur, University of Zurich, Switzerland; Carmen Het, University of Applied Sciences and Arts Northwestern Switzerland (FUW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland

- A malleable view of excellence can help attract underrepresented minorities to elite organizations
  Sille Hertel, Ruprecht-Karls-Universität Heidelberg, Germany; Katharina Kriebbaum, Heidelberg University, Germany; Christina Bauer, Freie Universität Berlin, Germany; Bettina Hannover, FU Berlin, Germany

- Profiles of implicit theories and their relation to aspects of self-regulated learning
  Sille Hertel, Ruprecht-Karls-Universität Heidelberg, Germany; Katharina Kriebbaum, Heidelberg University, Germany; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

### Session C: 5

**Time: 15:30-17:00**

**Location:** Lecture Hall - H06 - Amazon Hörsaal

**SYMPOSUM: THE ROLE OF ATTITUDES AND EPISTEMIC BELIEFS FOR LEARNING AND INSTRUCTION**

**Chair**
Martin Daumiller, University of Augsburg, Germany

**Organiser**
Stefan Siegel, University of Augsburg, Germany

**Discussant**
Robert Kordts-Freudinger, University of St. Gallen, Switzerland

- Attitudes Towards Heterogeneity of Secondary Students
  Stefanie Döttz, University of Mannheim, Germany; Karina Karst, University of Mannheim, Germany

- Conditional effects of epistemic beliefs on attitudes, vaccine misconceptions, and conceptual change
  James Vivian, McGill University, Canada; Krista Muis, McGill University, Canada

- Theory-related Attitudes and Beliefs of Students and Lecturers: Results of a Mixed-Methods-Study
  Stefan Siegel, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany

- The Evidence-Based Teaching Knowledge, Beliefs and Attitudes Scale
  Despoina Georgiou, Ludwig Maximilian University, Germany; Sog Yee Mok, University of Zurich, Switzerland; Anne Wiebeck, TUM School of Education, Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany; Tina Seidel, Technische Universität München, Germany
### SYMPOSIUM: TEACHER WELLBEING: WHAT DOES IT MEAN AND HOW CAN IT BE SUPPORTED?

<table>
<thead>
<tr>
<th>Chair</th>
<th>A systematic review of the research literature on teacher well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan Beltman, Curtin University, Australia</td>
<td>Tina Hascher, University of Bern, Switzerland; Jennifer Waber, University of Bern, Switzerland</td>
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<tr>
<td>Discussant</td>
<td>On the path of mindfulness with Quebec student teachers</td>
</tr>
<tr>
<td>Carmela Aprea, University of Mannheim, Germany</td>
<td>Mylène Leroux, Université du Québec en Outaouais (UQO), Canada; Nancy Goyette, Université du Québec à Trois-Rivières, Canada; Catherine Malboeuf-Hurtubise, Bishop’s University, Canada</td>
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<td></td>
<td>Fostering school teachers’ resilience and wellbeing through professional learning</td>
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<td>José Castro Silva, ISPA-Instituto Universitário, Portugal; Luisa Fernandes, ISPA - Instituto Universitário/CIE-ISPA, Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Maria João Gouveia, ISPA – Instituto Universitário, Portugal</td>
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<td>“I actually felt more confident”: Using online modules to develop preservice teacher self-efficacy.</td>
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<td>Caroline Mansfield, University of Notre Dame Australia, Australia; Susan Beltman, Curtin University, Australia</td>
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### SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS

<table>
<thead>
<tr>
<th>Chair</th>
<th>OER accessibility and the effect of simplification on text processing among English learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minam Gruning, Otto-Friedrich-Universität Bamberg, Germany</td>
<td>Irina Rets, Open University, United Kingdom; Ursula Stickler, The Open University, United Kingdom, United Kingdom; Tim Coughlan, The Open University, United Kingdom, United Kingdom; Liusa Astruc, The Open University, United Kingdom, United Kingdom</td>
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<td>Human vis-a-vis Nature: Analytical perspective implicated in Chinese ESL textbooks</td>
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<td>Ka Lok Cheng, The University of Hong Kong, Hong Kong</td>
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<td>Learning from texts and mind maps: an eye-tracking and retrospective interview study</td>
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<td>Emmelien Merchlo, Ghent University, Belgium; Rieke Bogaert, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Leen Catryssaes, University of Antwerp, Belgium</td>
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<td>Errors in Bayesian situations</td>
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<td>Andreas Eichler, University of Kassel, Germany; Katharina Böcherer-Linder, Institute for Mathematics, Germany; Markus Vogel, University of Education Heidelberg, Germany</td>
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### SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS AND MULTIMEDIA LEARNING

<table>
<thead>
<tr>
<th>Chair</th>
<th>Multimedia Effects of Representational Pictures in Testing: Does the Response Format Matter?</th>
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<tbody>
<tr>
<td>Sigal Eden, Bar-Ilan University, Israel</td>
<td>Mariti Annalena Lindner, Leibniz Institute for Science and Mathematics Education, Germany; Johannes Schult, Landesinstitut für Schulentwicklung, Germany</td>
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<tr>
<td></td>
<td>Learning with Dynamic and Static Visualizations: Influence of Observing Hands and Spatial Ability</td>
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<td>Birgit Brucker, Leibniz-Institut für Wissensmedien (lWM), Germany; Nadine Marcus, University of New South Wales, Australia; Björn de Koning, Erasmus University Rotterdam, Netherlands; Ann-Christine Ehlis, University Hospital Tübingen, Germany; Paul Ayres, University of New South Wales, Australia; Peter Gerjets, Leibniz-Institut für Wissensmedien (lWM), Germany</td>
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<td>Presenting a Visualization Holistically versus Sequentially - Does It Make any Difference?</td>
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<td>Mandy Steinbach, University of Education Freiburg, Germany; Josef Neub, Department of Psychology, Freiburg University of Education, Germany; Anka Dreher, Department of Mathematics, Freiburg University of Education, Germany; Alexander Eitel, University of Freiburg, Germany</td>
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<td>“Hands-on, mind off”: Can demonstration further improve learning from a novel animation design?</td>
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<td>Jean Michel Bouchier, University of Dijon, LEAD-CNRS, France; Richard Lowe, Curtin University, Australia; Marie Leflis, University of Dijon, LEAD-CNRS, France; Marine Léveillé, University of Dijon, LEAD-CNRS, France</td>
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</tbody>
</table>
### Session C: 9 | Time: 15:30-17:00 | Location: Lecture Hall - H05

**SINGLE PAPER: QUANTITATIVE METHODS AND WORKPLACE LEARNING**

**Chair**
Hermann J. Abs, University of Duisburg-Essen, Germany

**A short measurement for professional agency in work organisations**
Eija Räkkönen, University of Jyväskylä, Finland; Katja Vähäsantananen, University of Jyväskylä, Finland; Susanna Paloniemi, University of Jyväskylä, Finland; Päivi Hörkkö, University of Jyväskylä, Finland

**Teaming under Uncertainty - Reflexivity and Psychological Safety for Information Sharing**
Therese Grohnan, Maastricht University, Netherlands; Roger Maehrisen, Maastricht University, Netherlands; Wim Gijselaers, Maastricht University, Netherlands

**Effects of learning culture on transfer results in critical work situations**
Jolanda Botke, Vrije Universiteit Amsterdam, Netherlands

**Digital competencies: A review of the literature and applications at the workplace**
Maren Oberländer, University of Würzburg, Germany; Andrea Beiniche, Würzburg University, Germany; Tanja Bipp, University of Würzburg, Germany

### Session C: 10 | Time: 15:30-17:00 | Location: Seminar Room - S01

**SINGLE PAPER: MATHEMATICS IN PRIMARY EDUCATION**

**Chair**
Stephan Vogel, University of Graz, Austria

**Predictive power of first graders’ characteristics for mathematics achievement 5 years later**
Kirsten Winkel, University of Mainz, Germany; Kristina Mueller, University of Mainz, Germany; Daniel Schunk, University of Mainz, Germany

**Teacher competence as a predictor of student achievement - Differential effects on students**
Simone Dinekache, Freie Universität Berlin, Germany; Francesca Monteri, University of Hamburg, Germany; Jan Retelsdorf, University of Hamburg, Germany; Aiso Heinze, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Children’s shifts of attention in phases of stable performance in arithmetic tasks**
Chronoula Voutsina, University of Southampton, United Kingdom; Lois George, The University of the West Indies, Jamaica; Keith Jones, University of Southampton, United Kingdom

**A tale of two fraction sub-constructs: The part-whole and quotient**
Lois George, University of the West Indies, Mona Campus, Jamaica

### Session C: 11 | Time: 15:30-17:00 | Location: Seminar Room - S02

**SINGLE PAPER: SOCIAL INTERACTION IN EARLY CHILDHOOD EDUCATION**

**Chair**
Percival Matthews, University of Wisconsin - Madison, United States

**Children’s epistemic beliefs and their justifications for including others: A longitudinal study**
Susan Walker, Queensland University of Technology, Australia; Jo Lunn Brownlee, Queensland University of Technology, Australia; Laura Scholes, Queensland University of Technology (QUT), Australia; Eva Marianne Johansson, University of Stavanger, Faculty of Arts and Education, Norway

**A Friend’s Presence in Daycare Promote Toddlers’ Prosocial Behavior Toward Peers**
Esther Adi-Japha, Bar-Ilan University, Israel; Citly Shohet, Bar-Ilan University, Israel

**Mother’s Interaction Behavior: Profiles, Predictors, and Competence Development of Children**
Gwendolin Blossfeld, University of Bamberg, Germany; Manja Altip, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Sabine Weinert, University of Bamberg, Germany

**A Systematic Review on Teacher-Child Interactions with Multilingual and Monolingual Young Children**
Annegje Langeloo, University of Groningen, Netherlands; Mayra Mascareño, University of Groningen, Netherlands; Marjolein Doorn, University of Groningen, Netherlands; Nikolai Kitzing, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands
### Session C: 12  
**Time: 15:30-17:00**  
**Location: Seminar Room - S03**  

**SINGLE PAPER: CITIZENSHIP EDUCATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auli Toom, University of Helsinki, Finland</td>
<td>Teaching the Good Citizen? Teacher’s Approaches to Education for Democratic Citizenship in Portugal</td>
<td>Shaima Muhammad, University of Innsbruck, Austria</td>
</tr>
<tr>
<td></td>
<td>Civic knowledge and expected civic engagement among lower-secondary students</td>
<td>Wolfram Schulz, Australian Council for Educational Research (ACER), Australia; Julian Fraillon, Australian Council for Educational Research (ACER), Australia</td>
</tr>
<tr>
<td></td>
<td>Perceived democratic school climate and adolescents’ civic attitudes and prosocial behavior</td>
<td>Aileen Edle, TU Dortmund University, Germany; Franziska Schubert, TU Dortmund University, Germany; Birgit Hepp, Humboldt-Universität zu Berlin, Germany</td>
</tr>
<tr>
<td></td>
<td>Participating teaching and democracy in the classroom - important for present and future?</td>
<td>Elke Hidenbrandt, Pädagogische Hochschule FHNW, Switzerland; Katja Malschitz, Pädagogische Hochschule FHNW, Switzerland; Annemarie Ruess, PH FHNW, Switzerland; Sabine Campana, Pädagogische Hochschule FHNW, Switzerland</td>
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</tbody>
</table>

### Session C: 13  
**Time: 15:30-17:00**  
**Location: Seminar Room - S07**

**SINGLE PAPER: EDUCATIONAL TECHNOLOGY AND INSTRUCTIONAL DESIGN**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cristian Simoni, University of Padua, Italy</td>
<td>Effects of Prior Knowledge and Gaze Following on Learning from Eye Movement Modeling Examples</td>
<td>Ellen Kok, Utrecht University, Netherlands; Lucia Chisari, Utrecht University, Netherlands; Akvile Mockeviciute, Utrecht University, Netherlands; Sietske Ruitenberk, Utrecht University, Netherlands; Lian van Vemde, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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<tr>
<td></td>
<td>Fear of the unknown – student reluctance to engage in blended learning in undergraduate economics</td>
<td>Julie Buhl-Wiggen, Copenhagen Business School, Denmark; Annemette Kjærgaard, Copenhagen Business School, Denmark; Lisbeth lø Cour, Copenhagen Business School, Denmark</td>
</tr>
<tr>
<td></td>
<td>For whom and how? – Effects of digital tools for spatial task solving</td>
<td>Vanesa Yapes-Serna, Bauhaus University of Weimar, Germany; Michael Montag, Bauhaus-University of Weimar, Germany; Steffi Zander, University of Applied Sciences Magdeburg-Stendal, Germany</td>
</tr>
<tr>
<td></td>
<td>Wrong Predictions &gt; Right Predictions: Generating Predictions as a Productive Exercise in Failure</td>
<td>Garvin Brod, German Institute for International Educational Research (DIPF), Germany</td>
</tr>
</tbody>
</table>

### Session C: 14  
**Time: 15:30-17:00**  
**Location: Seminar Room - S10**

**SINGLE PAPER: VIDEO ANALYSIS AND MATHEMATICS IN TEACHING AND INSTRUCTION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carol Aldous, Flinders University, Australia</td>
<td>What is The TALIS VIDEO Study? Rationale, Conceptualization and Design</td>
<td>V Darleen Opfer, RAND Corporation, United States</td>
</tr>
<tr>
<td></td>
<td>The Role of Subject Matter in Studying Teaching Across Countries</td>
<td>Eckhard Klime, German Institute for International Educational Research (DIPF), Germany; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland; Kristina Reiss, Technische Universität München (TUM), Germany</td>
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<tr>
<td></td>
<td>Initial Fielding Results from the TALIS Video Study</td>
<td>Kaja Mihaly, RAND Corporation, United States</td>
</tr>
<tr>
<td></td>
<td>Code Development and Rating of Video Recordings and Artefacts</td>
<td>Jonathan Schweig, RAND Corporation, United States; Courtney Bell, Educational Testing Service, United States; Brian Stecher, RAND Corporation, United States</td>
</tr>
</tbody>
</table>
**SINGLE PAPER: ATTITUDES AND BELIEFS, MOTIVATION AND EMOTION**

**Chair**
Kate Xu, Welten Institute - Open University of the Netherlands, Netherlands

**Why are some subjects less popular than others? Extending the debate**
Filo Constantinou, Cambridge Assessment, University of Cambridge, United Kingdom

**Measuring vocational teacher students autonomy-supportive beliefs. Validation of the PIS.**
Juliane Breitkopf, Technical University of Munich, Germany; Eveline Wittmann, Technische Universität München, Germany

**Estonian and Finnish 4th grade students’ mindsets about intelligence**
Elina Kuusisto, University of Humanistic Studies, Netherlands; Kati Aas, Institute of Psychology, Estonia; Grete Arro, Tallinn University, Estonia; Kini Timi, University of Helsinki, Finland

**Determinants of musical leisure time activities in boys and girls**
Marcus Penrin, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Eva Susanne Fritzsche, Department of Teacher Education, Germany; Stephan Kroemer, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany

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**SINGLE PAPER: TEACHING AND TEACHER EDUCATION**

**Chair**
Marco Longhitano, PH Schwyz, Switzerland

**Content Knowledge and Pedagogical Content Knowledge of Teachers – A Meta-Analysis across 7 subjects**
Stefan Krauss, University of Regensburg, Germany; Alfred Lindl, University of Regensburg, Bavaria, Germany; Anita Schlicher, University of Regensburg, Bavaria, Germany

**Art therapy technique of collage as a tool to reflect on teachers’ professional identity development**
Iva Stuchlikova, University of South Bohemia Ceske Budejovice, Czech Republic; Yvona Mazehova, University of South Bohemia Ceske Budejovice, Czech Republic; Jana Kournova, University of South Bohemia Ceske Budejovice, Czech Republic

**General pedagogical knowledge and school practice revisited–reconstruction as a backward design tool**
Christian Kraler, Teacher Education and School Research, Austria; Ann Kathrin Dittrich, Teacher Education and School Research, Austria

**Effectiveness of the Flipped Classroom in K-12 Education: A Meta-Analysis**
Marlene Wagner, University of Passau, Germany; Andreas Gegenturmer, University of Passau, Germany; Detlef Urtahne, University of Passau, Germany

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

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

**Examining the impact of PD on teacher knowledge, instructional practice, and student achievement**
Nanette Seago, WestEd, United States; Karen Koellner, Hunter College – CUNY, United States

**The Preparation of Facilitators for Adaptive Professional Development**
Hilda Borke, Stanford University, United States; Janet Carlson, Stanford University, United States

**Developing teacher laterality in a centralized education system**
Junsong Huang, National Institute of Education, Singapore; Imran Sha’an, National Institute of Education/Nanyang Technological University, Singapore; Singapore

**Validating the Spanish Approaches to Teaching Inventory with Mexican teachescendaria teachers**
Carla Quesada-Pallarès, Universitat Autònoma de Barcelona, Spain; Anna Cirasó, Universitat Autònoma de Barcelona, Italy; Lori Caudle, Western Carolina University, United States; Edith Mariana Rebollar Sánchez, Instituto Superior de Ciencias de la Educación del Estado de México, Mexico
<table>
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<tr>
<th>Chair</th>
<th>A review of writing motivation research since 2000</th>
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<tbody>
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<td>Ana Camacho, University of Porto, Portugal; Pietro Boscolo, Università di Padova, Italy; Rui Alexandre Alves, University of Porto, Portugal</td>
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<tr>
<td></td>
<td>How do teachers decide on the classroom time they invest in different learning goals?</td>
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<td>Michiel Voet, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Iris Huldres, Ghent University, Belgium</td>
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<td>Values and ‘Cultural Heritage’ in Early Childhood Education and Care in Finland and Sweden</td>
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<td>Annika Kuusiato, Stockholm University, Sweden</td>
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<td>Learning as Identity Change in Augmented Virtual Learning Environments</td>
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<td>Amanda Barany, Drexel University, United States; Hamideh Taharian, Drexel University, United States; Mamta Shah, Drexel University, United States; Acuolis Foster, Drexel University, United States</td>
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TUESDAY
13 AUGUST 2019
### Session D: 1  
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H10

**SIG INVITED SYMPOSIUM: SIG 23: SOCIAL INTERACTION IN SCHOOL IMPROVEMENT AND ITS RELATION TO TEACHER AND STUDENT LEARNING**

**Chair**  
Katharina Maag Merki, University of Zurich, Switzerland

**Discussant**  
Tobias Feldhoff, Johannes Gutenberg University of Mainz, Germany

**Social interactions in schools concerned with new ideas for teaching, teamwork and school design.**  
Andrea Wulfschlegler, University of Zurich, Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Beat Rechsteiner, Institute of Education, University of Zurich, Switzerland; Nathanael Schori, Institute of Education, University of Zurich, Switzerland; Ariane Rickenbacher, Institute of Education, University of Zurich, Switzerland

**Teacher collaboration and teacher motivation in the context of school improvement**  
Nina Kolleck, Free Universität Berlin, Germany

**Cooperative regulation activities of teachers, analysed based on time-sampling data**  
Katharina Maag Merki, University of Zurich, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Beat Rechsteiner, Institute of Education, University of Zurich, Switzerland; Ariane Rickenbacher, Institute of Education, University of Zurich, Switzerland; Andrea Wulfschlegler, University of Zurich, Switzerland

**The Impact of a Two-Year Intervention on Improving School Effectiveness: The Dynamic Approach**  
Maria Vrliki, University of Cyprus, Cyprus; Leonidas Kyriakides, University of Cyprus, Cyprus; Evi Charalambous, Department of Education, University of Cyprus, Cyprus

### Session D: 2  
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H11

**SYMPOSIUM: POSSIBILITIES OF DIFFERENT RESEARCH INSTRUMENTS FOR INVESTIGATING EMOTIONS ON LEARNING OF EMPLOYEES**

**Chair**  
Regina Mulder, University of Regensburg, Germany

**Organiser**  
Verena Watzek, University of Regensburg, Germany

**Discussant**  
Tina Haacher, University of Bern, Switzerland

**Using self-reports and electrodermal activity (EDA) measurement in studying emotions in learning**  
Susanna Pakoniemi, University of Jyväskylä, Finland; Markku Penttinen, University of Jyväskylä, Finland; Päivi Hökkä, University of Jyväskylä, Finland; Katja Vähäsaari, University of Jyväskylä, Finland; Anneli Eskelinen, University of Jyväskylä, Finland

**The rocky road to emotion measurement in learning and career development: on the use of self-reports**  
Thomas Pirsoul, Université Catholique de Louvain (UCL), Belgium; Michaël Parmentier, Université Catholique de Louvain (UCL), Belgium

**The use of questionnaires and observations in investigating affective reactions within teamwork**  
Verena Watzek, University of Regensburg, Germany; Andreas Widmann, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany

**Using online data to identify strategies that teachers use to regulate emotions**  
Susan Bellman, Curtin University, Australia; Emily Poulton, Curtin University, School of Education, Australia

### Session D: 3  
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

**SYMPOSIUM: IMPORTANCE OF TEACHER CHARACTERISTICS FOR INSTRUCTIONAL QUALITY**

**Chair**  
Justine Stang, TU Dortmund University, Germany

**Organisers**  
Justine Stang, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Discussant**  
Christoph Helm, Johannes Kepler University Linz, Austria

**Relations between heterogeneity-related teaching attitudes and motivation and instructional quality**  
Justine Stang, TU Dortmund University, Germany; Miriam Gebauer, Institute for School Development Research, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Relations between teachers’ professional knowledge and instructional quality in mathematics teaching**  
Christian Bruehwiler, University of Teacher Education St.Gallen, Switzerland; Lena Hellenstein, University of Teacher Education St.Gallen, Switzerland; Berit Aflötter, University of Teacher Education, St. Gallen, Switzerland

**Teacher motivation and changes in perceived teaching after the transition to secondary school**  
Rebecca Lazarides, University of Potsdam, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany; Hanna Gaspard, University of Tübingen, Germany; Richard Goßner, University of Tuebingen, Germany

**Quality of learning environments over time: Relationships with teacher characteristics**  
Marie-Christine Opperkacker, University of Groningen, Netherlands
<table>
<thead>
<tr>
<th>Session D: 4</th>
<th>Time: 08:30-10:00</th>
<th>Location: Lecture Hall - H06 - Amazon Hörsaal</th>
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</thead>
<tbody>
<tr>
<td><strong>SYMPOSIUM: LEARNING FROM MULTIPLE DOCUMENTS AND MULTIPLE REPRESENTATIONS</strong></td>
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<td><strong>Chair</strong></td>
<td>Patricia A. Alexander, University of Maryland, United States</td>
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<td><strong>Organiser</strong></td>
<td>Alexandra List, The Pennsylvania State University, United States</td>
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<td><strong>Discussant</strong></td>
<td>Peggy Van Meter, The Pennsylvania State University, United States</td>
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<td><strong>Investigating Integration Processes During Learning From a Video</strong></td>
<td>Anne Schueller, Leibniz-Institut für Wissensmedien, Germany; Martin Merki, Deutsches Institut für Erwachsenenbildung, Germany</td>
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<tr>
<td><strong>Reading Medium and Reading Purpose in a Multiple Document Context</strong></td>
<td>Odiste Ammarudd, University of Oslo, Norway; Natalia Latini, University of Oslo, Norway; Ivar Bräten, University of Oslo, Norway; Ladislao Salmeron, University of Valencia, Spain</td>
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<td><strong>Reading Process Data and Learning Outcomes From Reading Multiple Illustrated Texts</strong></td>
<td>Jennifer Cromley, University of Illinois at Urbana-Champaign, United States; Andrea Kunze, University of Illinois, United States; Aygül Parpucu Dane, University of Illinois, United States; Colin Castelberry, University of Illinois, United States</td>
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<td><strong>Learning from Multiple Verbal and Visual Documents</strong></td>
<td>Peggy Van Meter, The Pennsylvania State University, United States; Chelsea Cameron, Penn State University, United States</td>
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<th>Session D: 5</th>
<th>Time: 08:30-10:00</th>
<th>Location: Lecture Hall - H07</th>
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<tr>
<td><strong>SYMPOSIUM: COMPOSITION IN SCHOOL AND CLASS: WHAT EFFECTS DO PEERS HAVE ON STUDENTS’ INDIVIDUAL DEVELOPMENT?</strong></td>
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<td>Marianne Schuepbach, Freie Universität Berlin, Germany</td>
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<td><strong>Organiser</strong></td>
<td>Marianne Schuepbach, Freie Universität Berlin, Germany</td>
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<td><strong>Discussant</strong></td>
<td>Eckhard Klieme, German Institute for International Educational Research (DIPF), Germany</td>
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<td><strong>Short and long term effects of school composition in primary education</strong></td>
<td>Jan Van Damme, KU Leuven, Belgium</td>
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<td><strong>Mathematics Achievement and the Association with Language Achievement in All-day Schools</strong></td>
<td>Marianne Schuepbach, Freie Universität Berlin, Germany; Lukas Frei, University of Bamberg, Switzerland; Benjamin von Allmen, University of Bamberg, Switzerland; Nanine Lilla, University of Bamberg, Germany; Wim Nieuwenboom, Otto Friedrich University Bamberg / FHWW Switzerland, Switzerland</td>
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<td><strong>Effects of Extended Education on Internalizing Behavior: Class Composition as Possible Moderator</strong></td>
<td>Wim Nieuwenboom, Otto Friedrich University Bamberg / FHWW Switzerland, Switzerland; Lukas Frei, University of Bamberg, Switzerland; Marianne Schuepbach, Freie Universität Berlin, Germany; Benjamin von Allmen, University of Bamberg, Switzerland</td>
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<td><strong>Outsiders inside inclusive classes? Class composition effects on friendship networks of SEN students</strong></td>
<td>Katja Scharenberg, University of Education Freiburg, Germany; Sebastian Röhl, University of Education Freiburg, Germany</td>
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<th>Session D: 6</th>
<th>Time: 08:30-10:00</th>
<th>Location: Lecture Hall - H08</th>
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<tr>
<td><strong>SYMPOSIUM: SELF-, CO-, AND SHARED REGULATION: WHAT DO THEY LOOK LIKE IN DIFFERENT CONTEXTS? WHY DO THEY MATTER?</strong></td>
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<td><strong>Chair</strong></td>
<td>Sarah Davis, University of Victoria, Canada</td>
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<td><strong>Organisers</strong></td>
<td>Ashah Bakhtiar, University of Victoria, Canada; Marion Wilja, University of Twente, Netherlands</td>
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<td><strong>Discussant</strong></td>
<td>Simone Volet, Murdoch University, Australia</td>
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<td><strong>Social Regulation at the Workplace: Different Modes of Regulation and Variation in Quality</strong></td>
<td>Marijn Wiig, University of Twente, Netherlands; Maaike Endreidyk, University of Twente, Netherlands; Bernard Veldkamp, University of Twente, Netherlands</td>
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<tr>
<td><strong>Dynamic interplay between regulatory modes when regulating motivation in collaboration</strong></td>
<td>Alyson Hadwen, University of Victoria, Canada; Ashah Bakhtiar, University of Victoria, Canada; Marnel Miller, University of Victoria, Canada; Annie Wu, University of Victoria, Canada</td>
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<td><strong>Identifying sequences of adaptive and maladaptive regulation in collaboration using multimodal data</strong></td>
<td>Jonna Malmberg, University of Oulu, Finland; Marta Sobocinski, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Muhterem Dindar, University of Oulu, Finland; Antti Isosalo, University of Oulu, Finland</td>
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<tr>
<td><strong>Interdependent Emotion Regulation Modes: Similarities between Self-, Co- and Shared Regulation</strong></td>
<td>Mardeh Kazemitabar, McGill University, Iran; Susanne Lajoie, McGill University, Canada</td>
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SYMPOSIUM: DYNAMIC RELATIONS: SELF-REGULATION AND EARLY ACADEMIC SKILLS IN YOUNG CHILDREN ACROSS EUROPE

Chair
Catherine Gunzenhauser, Leipzig University, Germany

Organisers
Catherine Gunzenhauser, Leipzig University, Germany;
Dewulf ten Braak, University of Stavanger, Norway

Discussant
Joana Cadima, University of Porto, Portugal

- Testing a Bidirectional Model of Executive Functions and Fluid Intelligence Across Early Childhood
  Filim Uka, University of Prishtina, Kosovo; Catherine Gunzenhauser, Leipzig University, Germany; Ross Larsen, Brigham Young University, United States; Antje von Suchodoletz, New York University Abu Dhabi, United Arab Emirates

- How self-regulation mediates the relation between early math and later academic achievement
  Dewulf ten Braak, University of Stavanger, Norway; Ragnhild Lenes, University of Stavanger, Norway; Ingunn Storksen, University of Stavanger, Norway

- Cross-domain effects between self-regulation and vocabulary skills across toddlerhood
  Joana Cadima, University of Porto, Portugal; Carolina Guedes, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Teresa Aguilar, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Cecília Aguiar, ISEG - Instituto Universitário de Lisboa, Portugal; Clara Barata, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal

- Bidirectional Associations between Behavioral Regulation and Pre-literacy Skills in Preschoolers
  Eja Pakarinne, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Marja-Kristiina Leikkanen, University of Jyväskylä, Finland; Antje von Suchodoletz, New York University Abu Dhabi, United Arab Emirates

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SYMPOSIUM: UNDERSTANDING FRACTION MAGNITUDE – LEARNING TO PROCESS FRACTION MAGNITUDE

Chair
Andreas Obersteiner, University of Education Freiburg, Germany

Organisers
Andreas Obersteiner, University of Education Freiburg, Germany; Wim Van Dooren, KU Leuven, Belgium

Discussant
Xenia Vamvakoussi, University of Ioannina, Greece

- Constructing Fraction Concepts as Reorganization of Whole Number Concepts
  Ron Tzur, University of Colorado Denver, United States

- Assessing and teaching intuitive fraction magnitude sense using touchscreen devices
  Frank Reinholt, Technical University of Munich, Germany; Stefan Hoch, Technical University of Munich, Germany; Bernhard Werner, Technical University of Munich, Germany; Jürgen Richter-Gebert, Technical University of Munich, Germany; Kristina Reiss, Technische Universität München (TUM), Germany

- Perceptions of Rational Number Magnitudes
  Percival Matthews, University of Wisconsin - Madison, United States; Edward Hubbard, University of Wisconsin-Madison, United States

- Training induced modulation of brain activation during fraction magnitude processing
  Korbirian Moeller, Leibniz-Institut für Wissensmedien, Germany; Silke Maria Bieck, LEAD Graduate School, Germany; Johannes Bilbich, Leibniz-Institut für Wissensmedien (IWM), Germany; Manuel Ninaus, Leibniz-Institut für Wissensmedien, Germany; Kristian Kil, Tampere University, Finland; Julia Bahnmüller, Leibniz-Institut für Wissensmedien (IWM), Germany; Else Klein, Leibniz-Institut für Wissensmedien (IWM), Germany

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SINGLE PAPER: COMPUTER-ASSISTED LEARNING

Chair
Helen Jossberger, University of Regensburg, Germany

- Animation improve Highway Code Rules learning in deaf candidates
  Jaser-Michel Bouchex, University of Dijon, LEAD-CNRS, France; Sebastien Laurent, IFSTTAR, France; Stéphane Argon, University of Dijon, LEAD-CNRS, France; Laurence Paire-Floquet, IFSTTAR, France

- Wait a second! Learning from multiple choice questions with an opportunity for recall
  Gesa van den Broek, Utrecht University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

- Multimedia learning in dyslexia: an eye tracking study on learning processes and outcomes
  Carolien A. N. Knoops-van Campen, Radboud University Nijmegen, Netherlands; Elane Segers, Radboud University Nijmegen / University of Twente, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands

- Perceptual challenges for learning from animations in educational multimedia
  Richard Lowe, Curtin University, Australia; Jean-Michel Bouchex, University of Dijon, LEAD-CNRS, France; Laurie Porte, University of Burgundy, France
## SINGLE PAPER: COMPETENCIES IN HIGHER EDUCATION

**Chair**
Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal

**Measuring Prospective Teachers’ Non-Cognitive Characteristics Using Multiple Mini Interviews**
Ritta-Leena Metsapetel, University of Jyväskylä, Finland; Jukka Uriaanen, University of Jyväskylä, Finland; Joona Murtka, University of Jyväskylä, Finland; Anna-Maja Poikkeus, University of Jyväskylä, Finland

**Clumping of peer-assessment grades: Is comparative judgement an alternative for rubrics rating?**
Lieze Coertjens, Université catholique de Louvain (UCL), Belgium; Quentin Hody, Université catholique de Louvain (UCL), Belgium; Florence Van Meenen, Université catholique de Louvain (UCL), Belgium; Marie-Claire Van Nys, Université catholique de Louvain (UCL), Belgium; Franck Verschuren, Université catholique de Louvain (UCL), Belgium

**Students’ presentation self-efficacy and its relations with teaching behavior**
Marco Schickel, Berlin School of Economics and Law, Germany; Tobias Ringeisen, Berlin School of Economics and Law, Germany

**Fostering the Comprehension and Evaluation of Informal Scientific Arguments**
Hannes Muenchow, University of Würzburg, Germany; Tobias Richter, University of Würzburg, Germany; Sebastian Schmid, University of Regensburg, Germany

## SINGLE PAPER: READING COMPREHENSION

**Chair**
Ariane S. Willems, University of Goettingen, Germany

**Interleaving promotes coherence construction while learning with expository texts**
Roman Abel, University of Kassel, Germany; Matthias Mai, Leibniz University of Hannover, Germany; Martin Haenze, University of Kassel, Germany

**Does Reading Comprehension Affect German and Taiwanese Students’ Mathematical Problem Solving?**
Janina Krawitz, University of Münster, Germany; Stanislaw Schukajlow, University of Münster, Germany; Yu-Ping Chang, National Taiwan Normal University, Taiwan; Kai-Lin Yang, National Taiwan Normal University, Taiwan

**Testing the Validity of Score Interpretations of Standardized Reading Comprehension Tests**
Daniel Dinsmore, University of North Florida, United States; John White, University of North Florida, United States

## SINGLE PAPER: ARGUMENTATION

**Chair**
Malin Tvärna, Stockholm University, Sweden

**Measuring argumentation skills of upper-elementary students**
Alina Reznitskaya, Montclair State University, United States; Ian A.G. Wilkinson, University of Auckland, New Zealand

**Epistemic cognition in argumentation. Taking a walk on the interspsychological plane**
Christian Sebastian, Pontificia Universidad Católica de Chile, Chile; Martin Vergara Wilson, Pontificia Universidad Católica de Chile, Chile; Macarena Sanhueza Góspedes, Pontificia Universidad Católica de Chile, Chile; María José Smart Torrealba, Pontificia Universidad Católica de Chile, Chile; María Rosa LiSSi, Pontificia Universidad Católica de Chile, Chile

**Learner Preferences for Collaboration Scripts. Impact on Argumentation, Acceptance and Attitude**
Amin Weinberger, Saarland University, Germany; Thomas Puhl, Saarland University, Germany; Rola Sayegh, Saarland University, Germany

**Pre-Post-Study on Argumentation and Political Judgement in Civic Education within Language Skills**
Sabine Manzel, Universität Duisburg-Essen, Germany; Claudia Luft, Fak. für Gesellschaftswissenschaften / Institut für Politikwissenschaft / Didaktik der Sozialwissenschaft, Germany

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**TUESDAY, 13 AUGUST 2019**
### Session D: 13 | Time: 08:30-10:00 | Location: Seminar Room - S06

**SINGLE PAPER: INSTRUCTIONAL DESIGN**

| Chair | Designing a Multimedia Training to Understand Electric Circuits: Modality & Prior Knowledge Effects  
Bernhard Ertl, Bundeswehr University Munich, Germany; Andreas Csannadi, Bundeswehr University Munich, Germany; Bianca Watzka, Ludwig Maximilians-Universität (LMU), Germany; Christoph Hoyer, Ludwig Maximilians-Universität (LMU), Germany; Raimund Giniewitz, Ludwig Maximilians-Universität (LMU), Germany  
Individual preparation for collaborative learning: systematic review and synthesis  
Stephan Mende, TU Dresden, Germany; Anja Procke, TU Dresden, Germany; Susanne Narcises, TU Dresden, Germany  
The influence of the perceived instructional quality on the acceptance and use of an online course  
Charlotte Lamuseau, KU Leuven, Belgium; Piet Desmet, KU Leuven KULAK, Belgium; Fien Depaepe, KU Leuven, Belgium  
Identification of an Evidence Base – Effective Teaching in secondary STEM Education  
Maximilian Knögl, Technical University of Munich (TUM), Germany; Andreas Heerman, Technical University of Munich (TUM), Germany; Tina Sädel, Technische Universität München, Germany |

### Session D: 14 | Time: 08:30-10:00 | Location: Seminar Room - S15

**SINGLE PAPER: MATHEMATICS AND MOTIVATION**

| Chair | Effects of enjoyment and anxiety on strategy use and performance in mathematics  
Stanislaw Schukajlow, University of Münster, Germany; Judith Blomberg, University of Münster, Germany; Johanna Reillmann, University of Münster, Germany  
Individual interest and learning in secondary school mathematics and science context  
Erkki Laine, University of Turku, Finland; Marjanaa Veermans, University of Turku, Finland; Koen Veermans, University of Turku, Finland; Andreas Gegenfurtner, University of Passau, Germany  
Math anxiety changes in response to math task, difficulty, and learning  
Kelly Trezise, University of Chicago, United States; Robert Reeve, University of Melbourne, United Kingdom; Lindsey Richland, University of California Irvine, United States  
“Good” or “well calculated”? Effects of feedback on performance and self-concept of preschoolers  
Valente Berner, Catholic University of Eichstaett-Ingolstadt, Germany; Frank Niklas, University of Augsburg, Germany; Robin Segerer, University of Basel, Switzerland; Eva Oesterlen, Catholic University of Eichstaett-Ingolstadt, Germany; Katja Seitz-Stein, Catholic University of Eichstaett-Ingolstadt, Germany |

### Session D: 15 | Time: 08:30-10:00 | Location: Seminar Room - S12

**SINGLE PAPER: DEVELOPMENT OF EARLY NUMERICAL COMPETENCIES**

| Chair | The role of spontaneous focusing on Arabic number symbols in early mathematical development  
Bert De Smedt, KU Leuven, Belgium; Sanne Rathé, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffelt, KU Leuven, Belgium  
Cognitive Markers of Exceptionally High and Low Mathematical Performance in Preschoolers  
Merel Bakker, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffelt, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium  
Participatory action research as a way to innovate mathematics and science teaching  
Shirley Medjiansky, University of Haifa, Israel; Irr Sasson, University of Haifa, Israel  
Finger numeral representations contribute to acquiring number semantics in 4-year-old children  
Josechu Orriola, University of Salamanca, Spain; Rosario Sanchez, University of Salamanca, Spain; David Munoz, National Institute of Education / Nanyang Technological University, Singapore; Laura Matilla, University of Salamanca, Spain |
## SINGLE PAPER: POSTHUMAN OPENINGS: PARTICIPATORY METHODOLOGIES AND ETHICAL STRATEGIES IN NORDIC EDUCATION RESEARCH

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<th>Chair</th>
<th>Preschoolers ability and opportunity to participate in environmental inquiries and society</th>
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<td>Teresa Elkin Postila, Stockholm University, Sweden</td>
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<td>Turning up and down the volume: Ethics and participation in research involving young children</td>
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<td>Linnea Boden, Stockholm University, Sweden</td>
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<td>Animalizing education – Multispecies storytelling in examining child-animal relations and care</td>
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<td>Rikka Höhti, Manchester Metropolitan University/University of Oulu, Finland</td>
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## SINGLE PAPER: INDIVIDUAL LEARNING IN GROUP-BASED PRESCHOOL SETTINGS

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<tr>
<th>Chair</th>
<th>Conditions for individual scaffolding and learning in group-based investigative practices</th>
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<td></td>
<td>Hillevi Lenz Taguchi, Stockholm University, Sweden; Anna Palmer, Stockholm University, Sweden; Sofia Frankenberg, Stockholm University, Sweden; Tove Gerholm, Stockholm University, Sweden; Petter Kallionen, Stockholm University, Sweden; Susanne Kjällander, Stockholm University, Sweden; Signe Tonér, Stockholm University, Sweden</td>
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<td>Digital Individual Learning for Body &amp; Mind in group based preschool contexts</td>
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<td>Sofia Frankenberg, Stockholm University, Sweden; Susanne Kjällander, Stockholm University, Sweden; Hillevi Lenz Taguchi, Stockholm University, Sweden; Anna Palmer, Stockholm University, Sweden; Tove Gerholm, Stockholm University, Sweden; Petter Kallionen, Stockholm University, Sweden; Signe Tonér, Stockholm University, Sweden</td>
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<tr>
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<td>Group-based vs. Individual teaching &amp; one vs. multiple epistemologies in preschool literacy practice</td>
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<td>Lena Aronsson, Stockholm University, Sweden</td>
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## SINGLE PAPER: TOMORROW’S MATHEMATICS EDUCATION: THE ROLE OF INSTRUCTION STYLE AND TASK DIFFICULTY

<table>
<thead>
<tr>
<th>Chair</th>
<th>Working Memory and Numeracy Intervention for Children with Poor Mathematical Performance</th>
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<tbody>
<tr>
<td></td>
<td>Kerry Lee, The Education University of Hong Kong, Hong Kong; Rebecca Bu, National Institute of Education/Nanyang Technological University, Singapore; Singapore; David Munaz, National Institute of Education / Nanyang Technological University, Singapore; Kiat Hui Khng, National Institute of Education/Nanyang Technological University, Singapore; Singapore; Fiona Cheam, Ministry of Education, Singapore; Ridzuan Abd Rahim, Ministry of Education, Singapore</td>
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<tr>
<td></td>
<td>Persistence of the Building Blocks’ impact on Ecuadorian children’ early numerical abilities</td>
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<td>Lieven Verschaffel, KU Leuven, Belgium; Gina Bojorque, KU Leuven, Belgium; Joke Torbeys, KU Leuven, Belgium; Jo Van Hoof, KU Leuven, Belgium</td>
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<td></td>
<td>Effects of Mathematics Interventions for Students with Intellectual Disabilities</td>
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<td>Susanne Schmepel, University of Zurich, Switzerland; Pirjo Aunio, University of Helsinki, Finland</td>
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<td>Thinking with data: Which factors predict successful interpretations of covariation data?</td>
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<td></td>
<td>Christopher Osterhau, Ludwig Maximilians-Universität, Germany; Erika Staus, University of Wisconsin-Madison, United States; Martha W. Alibali, University of Wisconsin-Madison, United States</td>
</tr>
</tbody>
</table>
**SINGLE PAPER: LEARNING TECHNOLOGIES**

| Chair | Promoting Collective Cognitive Responsibility through Idea-Friend Maps in Large Class  
Xueqi Feng, The University of Hong Kong, China; Jan van Aalst, University of Hong Kong, Hong Kong; Carol Chan, The University of Hong Kong, Hong Kong  
Leveraging Theoretical and Methodological Innovations for Supporting Identity Exploration and Change  
Amanda Barany, Drexel University, United States; Arouits Foster, Drexel University, United States; Mamta Shah, Drexel University, United States; Hamideth Talahan, Drexel University, United States; Mark Petrovich, Drexel University, United States  
Topic Modeling of Pre-Service Teachers’ Computational Thinking Reflections  
Maria Cutumisu, University of Alberta, Canada; Qi Guo, University of Alberta, Canada |
|---|---|

**SINGLE PAPER: SECONDARY EDUCATION**

| Chair | Characteristics and effectiveness of a summer school for secondary education  
Sandy Verbruggen, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Bieke De Fraene, KU LEUVEN, Belgium  
How Instructional Experiences Shape Climate Perceptions in Science Classrooms: An Exploratory Study  
Jose Felipe Martinez, University of California, United States; Jonathan Schwieg, RAND Corporation, United States  
Steps towards a more inclusive education system: A case study in Flanders  
Aster Van Mieghem, University of Antwerp, Belgium; Karine Verschueren, KU Leuven, Belgium; Katja Petry, KU LEUVEN, Belgium; Elke Struyf, University of Antwerp, Belgium  
Epistemology and social identity in history teachers’ experiences with teaching sensitive issues  
Geente M. Savenije, University of Amsterdam, Netherlands; Bjorn Wansink, Utrecht University, Netherlands; Albert Logtenberg, Amsterdam University of Applied Sciences, Netherlands |
|---|---|

**INVITED SESSION: MEET THE EARLI JOURNAL EDITORS**

| Chair | Learning and Instruction  
Lars-Erik Malmberg, University of Oxford, United Kingdom  
Educational Research Review  
Hans Gruber, University of Regensburg, Germany  
Frontline Learning Research  
Thomas Martens, Medical School Hamburg, Germany  
EARLI Book Series New Perspectives on Learning and Instruction  
Men Segers, Maastricht University, Netherlands |
|---|---|
### Session E: 2
**Time: 10:15-11:45**  
**Location: Lecture Hall - H10**

**INVITED SESSION: INTERACTIVE LEARNING ENVIRONMENTS THAT SUPPORT COGNITIVE, EMOTIONAL AND IDENTITY DEVELOPMENT**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Interactive Learning Environments in Special Schools</th>
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<tbody>
<tr>
<td>Sandra Racionero-Piza</td>
<td>Silvia Molina, Universitat Rovira i Virgili, Spain</td>
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<tr>
<td>Discussant</td>
<td>The role of peer interactions in the prevention of gender violence among adolescents</td>
</tr>
<tr>
<td>Antonia Larraín</td>
<td>Sandra Racionero-Piza, Universidad Loyola Andalucia, Spain; Ana Vida, University of Deusto, Spain; Lidia Puigvert, University of Barcelona, Spain</td>
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<td>Dialogic Gatherings in teacher education: affordances for pre-service teachers' identity formation</td>
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<td>Nerea Gutierrez Fernandez, University of Deusto, Spain; Rocío García Carrión, University of Deusto, Spain; Andrea Kallfau, University of Deusto, Spain; Beatriz Villarroya, University of Deusto, Spain</td>
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<td>The language of desire towards non-violent relationships in Dialogic Literary Gatherings</td>
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<td>Nerea Gutierrez Fernandez, University of Deusto, Spain; Garazi Lopez de Agu'leta, University of Barcelona, Spain</td>
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### Session E: 3
**Time: 10:15-11:45**  
**Location: Lecture Hall - H09**

**INVITED SESSION: MEASURING STUDENTS’ SOCIAL PARTICIPATION: INNOVATING THE FIELD WITH BEHAVIORAL DATA**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Using RFID technology to measure social interactions: A journey towards a real time social network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadine Spörer, University of Potsdam, Germany</td>
<td>Thorsten Henke, Leibniz University Hannover, Germany; Timon Elmer, ETH Zürich, Switzerland; Christoph Stadtfeld, ETH Zürich, Switzerland</td>
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<tr>
<td>Discussant</td>
<td>Two examples of RFID research and the potential for applying RFID devices in educational settings</td>
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<tr>
<td>Alexander Minnaert, University of Groningen, Netherlands</td>
<td>Jülia Eberle, Ruhr-Universität Bochum, Germany; Christoph Stadtfeld, ETH Zürich, Switzerland; Timon Elmer, ETH Zürich, Switzerland; Thorsten Henke, Leibniz University Hannover, Germany</td>
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<td>Beyond mere counting: How experience sampling can help to understand social interactions</td>
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<td>Carmen Zurbriggen, University of Bielefeld, Germany; Christian Huber, University of Wuppertal, Germany</td>
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<td>Applicability of ESM in school: Quality of students’ social interaction</td>
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<td>Margarita Knuckenberg, University of Bielefeld, Germany; Chantal Hinn, University of Fribourg, Switzerland; Carmen Zurbriggen, University of Bielefeld, Germany</td>
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</tbody>
</table>

### Session E: 4
**Time: 10:15-11:45**  
**Location: Lecture Hall - H08**

**INVITED SESSION: ACHIEVEMENTS IN MEASURING AND SUPPORTING STUDENT’S SELF-REGULATED LEARNING IN LEARNING TECHNOLOGIES**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Progress in research on regulation in collaborative learning – triangulation of multimodal data</th>
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<tbody>
<tr>
<td>Sanna Järvelä, University of Oulu, Finland</td>
<td>Sanna Järvelä, University of Oulu, Finland</td>
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<tr>
<td>Organiser</td>
<td>Progress in Research on Data Analytics Techniques for Self-Regulated Learning</td>
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<tr>
<td>Inge Molenaar, Radboud University Nijmegen, Netherlands</td>
<td>Dragan Gasevic, Monash University, Australia</td>
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<tr>
<td>Discussant</td>
<td>Process Mining Techniques to analyse Temporal Data of Self-Regulated Learning</td>
</tr>
<tr>
<td>Roger Azevedo, University of Central Florida, United States</td>
<td>Maria Barnier, Technical University of Munich (TUM), Germany</td>
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<tr>
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<td>Visualization of learning processes to reveal students’ self and socially shared regulation</td>
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<tr>
<td></td>
<td>Inge Molenaar, Radboud University Nijmegen, Netherlands</td>
</tr>
</tbody>
</table>
### INVITED SESSION: TEACHING FOR CONCEPTUAL CHANGE—IN SEARCH FOR LEARNING ENVIRONMENTS TO TACKLE THE NATURAL NUMBER BIAS

**Chair**  
Jo Van Hooft, KU Leuven, Belgium

**Organisers**  
Wim Van Dooren, KU Leuven, Belgium; Jo Van Hooft, KU Leuven, Belgium

**Discussant**  
Andreas Obersteiner, University of Education Freiburg, Germany

- **Tackling the natural number bias — A comparative textbook analysis**  
  Wim Van Dooren, KU Leuven, Belgium; Konstantinos Christou, University of Western Macedonia, Greece; Fien Depaepe, KU Leuven, Belgium; Matthew Inglis, Loughborough University, United Kingdom; Saku Määttä, University of Turku, Finland; Jake McMullen, University of Turku, Finland; Andreas Obersteiner, University of Education Freiburg, Germany; Patricia Heck Riberas, University of Education Freiburg, Germany; Jo Van Hooft, KU Leuven, Belgium; Maria Triandafylou, University of Ioannina, Greece; Xenia Vamvakoussi, University of Ioannina, Greece; Lieve Verschaffel, KU Leuven, Belgium; Gerald Wittmann, University of Education Freiburg, Germany; Beth Woolfolk, Loughborough University, United Kingdom

- **Increasing Primary Teachers’ Fraction Understanding by Decreasing the Natural Number Bias**  
  Tobias Hell, University of Innsbruck, Austria; Florian Stammer, University of Innsbruck, Austria

- **Using refutational text to remedy the Multiplication Makes Bigger misconception**  
  Konstantinos Christou, University of Western Macedonia, Greece; Argyro Priskopou, National and Kapodistrian University of Athens, Greece

- **Training adaptivity with rational numbers: The development of NanoRoboMath**  
  Tomi Kärki, University of Turku, Finland; Jake McMullen, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland

### SYMPOSIUM: BEYOND GRADE POINT AVERAGE: CONCEPTUALIZATION AND MEASUREMENT OF LEARNING GAINS IN HIGHER EDUCATION

**Chair**  
Jan Vermunt, Eindhoven University of Technology, Netherlands

**Organisers**  
Edith Braun, Justus-Liebig-Universität Giessen, Germany; Jan Vermunt, Eindhoven University of Technology, Netherlands

**Discussant**  
Johannes Bauer, University of Erlфт, Germany

- **Conceptualisation and Assessment of communication skills as learning gains in higher education**  
  Edith Braun, Justus-Liebig-Universität Giessen, Germany; Ulrike Schwabe, DZHW - German Centre for Research on Higher Education and Science Studies, Germany; Daniel Klein, University of Kassel, Germany

- **Assessing and providing feedback on cognitive and non-cognitive skills in the transition to HE**  
  Lien Demulder, KU Leuven, Belgium; Elisabeth Roels, Ghent University, Belgium; Jordi Heeren, KU LEUVEN, Belgium; Jonas Willems, University of Antwerp, Belgium; Wouter Duyck, Ghent University, Belgium; Lieve dewachter, KU Leuven, Belgium; Sofie Vispoel, Arteveldehogeschool, Belgium; Marlies Lacante, Faculty Psychology and Educational Sciences, Belgium; Vincent Donche, University of Antwerp, Belgium

- **Learning gain across disciplines in selective universities**  
  Sonia Ille, University of Cambridge, United Kingdom; Ashton Brown, University of Cambridge, United Kingdom; Jan Vermunt, Eindhoven University of Technology, Netherlands

- **Measuring learning gains: University students’ epistemic profiles and their conceptions of learning**  
  Kirti Lonka, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Jan Vermunt, Eindhoven University of Technology, Netherlands

### SYMPOSIUM: TEACHER-STUDENT RELATIONSHIPS FOR AT-RISK CHILDREN

**Chair**  
Tessa Woyns, KU Leuven, Belgium

**Organiser**  
Dabara Roorda, University of Amsterdam, Netherlands

**Discussant**  
Karine Verschueren, KU Leuven, Belgium

- **Connecting home and school relationships: Child self-control as a linking mechanism?**  
  Tago Ferreira, University of Porto, Portugal; Joana Cadima, University of Porto, Portugal; Marisa Malias, University of Porto, Portugal; Teresa Leal, University of Porto, Portugal; Paula Meno Matos, University of Porto, Portugal

- **Teacher perceptions of gifted children and possible moderators: An experimental study**  
  Tessa Woyns, KU Leuven, Belgium; Franziska Preckel, University of Trier, Germany; Svenja Mathies, Koblenz-Landau University, Germany; Karine Verschueren, KU Leuven, Belgium

- **Racial/ethnic differences in teacher-child relationships in early elementary school**  
  Kathleen Rudesill, Virginia Commonwealth University, United States; Paul Oczona, University of Nebraska-Lincoln, United States; Colin McGinnis, University of Nebraska-Lincoln, United States; Kenji Madison, University of Nebraska-Lincoln, United States

- **Relationships between Teachers and Students With Autism Spectrum Disorder and Students’ Engagement**  
  Debora Roorda, University of Amsterdam, Netherlands; Marjolein Zee, University of Amsterdam, Netherlands; Helma Koomen, Research Institute of Child Development and Education, Netherlands
### Session E: 8 | Time: 10:15-11:45 | Location: Lecture Hall - H05

#### SYMPOSIUM: STUDENTS’ READING MOTIVATION: INFLUENCING FACTORS AND EFFECTS

**Chair**
Chantal Lepper, TU Dortmund, Germany

**Organisers**
Chantal Lepper, TU Dortmund, Germany; Justine Stang, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**Discussant**
Maik Philipp, University of Teacher Education Zurich, Switzerland

**Students’ interest in reading dependent on gender and text characteristics: an experimental study**
Chantal Lepper, TU Dortmund, Germany; Justine Stang, TU Dortmund University, Germany; Nele McElvany, TU Dortmund University, Germany

**The role of HLE in Children’s Reading Motivation across Preschool and First Grade**
Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Elja Pakarinen, University of Jyväskylä, Finland

**Reciprocal effects of reading motivation, reading amount and reading comprehension in middle school**
Kristian K. Stefansson, Independent scholar, Iceland; Freyja Birgisdóttir, University of Iceland, Iceland; Steinarunn Gestsdóttir, University of Iceland, Iceland

**Effectiveness of interventions that foster reading motivation: A meta-analysis**
Roel van Steensel, Erasmus University Rotterdam, Netherlands; Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Lidia Arends, Erasmus Universiteit Rotterdam, Netherlands; Suzanne Fikrat-Wovers, Erasmus University Rotterdam, Netherlands

### Session E: 9 | Time: 10:15-11:45 | Location: Seminar Room - S01

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

**Chair**
Trinidad Garcia, University of Oviedo, Spain

**Finnish teachers' professional development on interacting with pupils**
Lais Oliveira Leite, University of Eastern Finland, Finland; Woonyeon Go, University of Eastern Finland, Korea, Republic of; Sari Hauw-Nuutinen, University of Eastern Finland, Finland

**Teachers' perspectives on professional development: a focus group study at three Dutch universities**
Margit W.J. van de Wiel, Maastricht University, Netherlands; Esther de Poni, Tilburg University, Netherlands; Kathleen Schulsmans, Open University the Netherlands, Netherlands

**Teacher educators’ work contexts, basic needs satisfaction, and their researcherly disposition**
Hanne Tack, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium

**Teachers’ career entry motivations: A comparative study from India, Spain, Finland, and England**
Sindu George, Monash University, Australia; Gloria Gratacos, C.U. Villanueva, Spain; Jaana Vialaranta, University of Eastern Finland, Finland; John Thornby, University of Warwick, United Kingdom; Spy Jappinen, University of Eastern Finland, Finland; Jingoo Kang, University of Eastern Finland, Finland; David Mendez, University of Villanueva, Spain; Graciela Salazar, University of Villanueva, Spain

### Session E: 10 | Time: 10:15-11:45 | Location: Seminar Room - S13

#### SINGLE PAPER: ACHIEVEMENT, EDUCATIONAL PSYCHOLOGY AND MOTIVATION AND EMOTION

**Chair**
Ching Shu Chen, Tainan University of Technology, Taiwan

**Influences of Perfectionism on New Zealand University Students’ Self-Perceptions and Performance**
Valene Setardi, University of Canterbury, New Zealand

**Exploring changes in student-teacher agreement on goal structures**
Lisa Bardach, University of York, United Kingdom; Takuya Yanagida, University of Vienna, Austria; Barbara Schober, University of Vienna, Austria; Marko Lüttenegger, University of Vienna, Austria

**Being an Emerging Engineer in Biology Courses: Future Oriented Value, Belongingness, and Achievement**
Jennifer Husman, University of Oregon, United States; Matthew Graham, University of Oregon, United States; Cameron Hecht, University of Wisconsin-Madison, United States; Bobbie Bermudez, University of Oregon, United States; Mengfan Zhai, University of Oregon, United States; Judith Harackiewicz, University of Wisconsin-Madison, United States

**Implementing intelligence facets as predictors into the generalised I/E model**
Jennifer Haussen, University of Luxembourg, Luxembourg; Jens Möller, University of Kiel, Germany; Samuel Greff, University of Luxembourg, Luxembourg; Christoph Niepel, University of Luxembourg, Luxembourg
### Session E: 11  10:15-11:45  Location: Seminar Room - S03

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

**Chair**
Raja Hämäläinen, University of Jyväskylä, Finland

- **Validating a Simulation-Based Learning Environment Measuring Biology Teachers’ Professional Vision**
  - Maria Kramer, Ludwig-Maximilians-Universität Munich, Germany; Julia Stürmer, Ludwig-Maximilians-Universität Munich, Germany; Christian Förtsch, Ludwig-Maximilians-Universität Munich, Germany; Sonja Förtsch, Ludwig-Maximilians-Universität Munich, Germany; Birgit J. Neuhaus, LMU Munich, Germany

- **Challenges, socio-emotional expressions and emotion regulation in collaborative Learning**
  - Pia Nayuki, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tiina Törmänen, University of Oulu, Finland; Jaana Ischätäli, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

- **To debate or to play a conflict? Development of sociocognitive conflicts in two teaching strategies**
  - Macarena Sanhueza Cáspodes, Pontificia Universidad Católica de Chile, Chile; Christian Sebastián, Pontificia Universidad Católica de Chile, Chile; María Josefina Smart Torelaba, Pontificia Universidad Católica de Chile, Chile; Martín Vergara Wilson, Pontificia Universidad Católica de Chile, Chile; María Rosa Lissi, Pontificia Universidad Católica de Chile, Chile

- **Student perceptions toward flipped Classroom: the role of the teacher**
  - Camila Barahona, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Alejandra Meneses, Pontificia Universidad Católica de Chile, Chile; Maximiliano Montenegro, Facultad de Educación, Pontificia Universidad Católica de Chile, Chile; Mazarena Santana, Pontificia Universidad Católica de Chile, Chile; Isabel Hiliger, Pontificia Universidad Católica de Chile, Chile

### Session E: 12  10:15-11:45  Location: Seminar Room - S05

#### SINGLE PAPER: METACOGNITION

**Chair**
Laure Klostzer, Institute of Psychology & Education, Switzerland

- **Mixed Methods? A comparison of different Judgments and Indicators for Metacomprehension**
  - Simone Goppert, University of Bamberg, Germany; Maximilian Pfot, University of Bamberg, Germany; Cordula Artelt, Leibniz Institute for Educational Trajectories, Germany; Nora Neuhaus, University of Bamberg, Germany

- **The Effect of Self-Regulated Learning Interventions on Achievement: a Meta-Analysis**
  - Renee Jansen, Utrecht University, Netherlands; Anouschka van Leeuwen, Utrecht University, Netherlands; Jeroen Janssen, Utrecht University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands

- **How much impact does growth mindset have on course grades?**
  - Jose Luis Suarez-Garcia, Colorado State University, United States; Ani Aghababian, McGraw-Hill Education, United States; Neil Zimmerman, McGraw-Hill Education, United States; Sean Burns, Colorado State University, United States

### Session E: 13  10:15-11:45  Location: Seminar Room - S02

#### SINGLE PAPER: WORKPLACE AND LIFELONG LEARNING

**Chair**
Anu Tammeleht, University of Helsinki, Estonia

- **Emerging directions in research on lab capacity strengthening for drug-resistant infections in LMICs**
  - Kudla Charbonos, The Open university UK, United Kingdom; Allison Littlejohn, Open University, United Kingdom; Tim Saal, The Open University, United Kingdom

- **Expertise related misconceptions and weaknesses in medical knowledge; a review**
  - Elis Bodzuizen, Open University of the Netherlands, Netherlands; Kisala N. Marame, University of Peradeniya, Sri Lanka

- **Self-regulated professional learning: insights from a longitudinal field-study in clinical practice**
  - Katrien Cuypers, University of Antwerp, Belgium; Piet Van den Bossche, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium

- **Transforming campus learning landscapes - Building common ground through a service design process**
  - Caj Nicolas Sandström, University of Helsinki, Finland; Anne Nevgi, University of Helsinki, Finland
### Session E: 14 | Time: 10:15-11:45 | Location: Seminar Room - S04

**SINGLE PAPER: MISCONCEPTIONS**

**Chair**  
Nina Kolleck, Freie Universität Berlin, Germany

- **Processes and earthquakes - investigating Swedish students’ conceptions and relational thinking**  
Mattias Arhenius, Stockholm University, Sweden; Cecilia Lundholm, Stockholm University, Sweden; Gabriel Bladh, Karlstad University, Sweden

- **Students’ explanations of river landforms and processes: a framework theory perspective**  
Rod Lane, Macquarie University, Australia

- **Reducing Reliance on Misinformation through Psychoeducation and an Error Marking Task**  
Steffen Gottschling, Leibniz-Institut für Wissensmedien (IWM), Germany; Yvonne Kammerer, Leibniz-Institut für Wissensmedien (IWM), Germany

- **Science students’ noticing of appropriate frames**  
Tobias Fredlund, University of Oslo, Norway; Erik Knud, University of Oslo, Norway

### Session E: 15 | Time: 10:15-11:45 | Location: Seminar Room - S06

**SINGLE PAPER: LEARNING IN HIGHER EDUCATION**

**Chair**  
Jori Beck, Old Dominion University, United States

- **Practising Fiercely: Lifting Teacher Fulfilment through Stance, Supports and Stamina**  
Wendy Holley-Boon, Massey University, New Zealand

- **Shaping PhD students teaching conceptions through the interplay of formal and informal learning**  
Mari Karm, University of Tartu, Estonia; Trinh Soomere, University of Tartu, Estonia

- **The contemporary function of the student voice in higher education: exploring the Chilean case**  
Stephen Darwin, Universidad Alberto Hurtado, Chile

- **Pre-service teacher research in intended, implemented and attained curriculum of teacher education**  
Lidewij van Katwijk, NHL-Stenden / University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands; Klaas van Veen, University of Groningen, Netherlands

### Session E: 16 | Time: 10:15-11:45 | Location: Seminar Room - S11

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION**

**Chair**  
Timo Uedaers, University of Education Freiburg, Germany

- **Advancing peer assessment in higher education [ASSET: Erasmus + co-funded project]**  
Dorit Alt, Kinneret College on the Sea of Galilee, Israel; Nirit Racheli, Kinneret College on the Sea of Galilee, Israel

- **Using Learning Analytics to Identify Efficient Indicators for Grading Group Essays**  
Mei-Shiu Chiu, National Chengchi University, Taiwan; Ya Ping (Amy) Hsiao, Tilburg University, Netherlands

- **Co-regulated learning in dialogic peer feedback**  
Oiyun Zhu, Guangdong University of Foreign Studies, China

- **Assessment of reasoning skills at the beginning of higher education studies**  
Attila Pâtsor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Erzébet Korom, University of Szeged, Hungary; Gyonggyver Molnár, University of Szeged, Hungary
### Session E: 17 | Time: 10:15-11:45 | Location: Seminar Room - S12

#### SINGLE PAPER: EMOTION AND AFFECT

**Chair**
Martin J. Tomask, University of Zurich, Switzerland

**A Structural Model of the Relationship among Meta-Affect, Self-Efficacy, and Science Achievement**
Esen Uzuntiryaki Kondaki, Middle East Technical University, Turkey; Zubeys Demet Kirbultu, Harran University, Turkey

**How mistakes can benefit learning**
Nicholas Garnett, Keele University, United Kingdom; Yvonne Skipper, Keele University, United Kingdom

**When emotion regulation emerges in collaboration? - Relation to valence and physiological arousal**
Hanna Jarvenoja, University of Oulu, Finland; Tiina Törnmänen, University of Oulu, Finland; Kristiina Kurki, University of Oulu, Finland

**Anxiety and Hope Interact with Regulation Strategies close to an Exam**
Anna-Lena Rottwaler, Augsburg University, Germany; Uhke Nett, Augsburg University, Germany

### Session E: 18 | Time: 10:15-11:45 | Location: Seminar Room - S15

#### SINGLE PAPER: MOTIVATION AND EMOTION

**Chair**
Mirjam Losse, Saxion University of Applied Sciences, Netherlands

**Testing the Gap Hypothesis: Longitudinal Relations between Digital Engagement and School Engagement**
Laure Hetajärvi, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland; Kai Hakkakainen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland

**Exploring Goal Complexes: Achievement Goals, Reasons for Performance Goals, and Emotional Correlates**
Jeannine Turner, Florida State University, United States; Jinjuashang Chen, Florida State University, United States; Juhee Kim, Florida State University, United States

**Motivation co-construction: How students build group-level motivation in collaborative learning**
Kayley Lyons, Monash University, Australia; Nikki Lobczowski, University of North Carolina at Chapel Hill, United States; Jeff Greene, University of North Carolina, United States; Jacqueline E. McLaughlin, University of North Carolina at Chapel Hill, United States

**Effects of an intervention on personal and social competences of adolescents**
Dolf Looser, Institut für Professionsforschung & Kompetenzentwicklung, Switzerland

### Session E: 19 | Time: 10:15-11:45 | Location: Seminar Room - S07

#### SINGLE PAPER: TEACHING AND LEARNING IN STUDENT-CENTRED LEARNING ENVIRONMENTS

**Chair**
Crina Damsa, University of Oslo, Norway

**Student hesitancy to active participation in student-centred learning environments**
Monika Neren, University of Oslo, Norway

**Perceptions of quality feedback- depending on contextual factors?**
Trine Fossland, UiT The Arctic University of Norway, Norway; Odd Rune Stalheim, Inland Norway University of Applied Sciences, Norway; Rachelle Esterhazy, University of Oslo, Norway

**Law students’ perceptions of legal reasoning**
Anne Haarala-Muhonen, University of Helsinki, Finland; Heidi Hyttinen, University of Helsinki, Finland; Tarja Tuononen, University of Helsinki, Finland

**Pedagogical designs fostering student engagement in group-based learning**
Crina Damsa, University of Oslo, Norway; Anne Line Wittke, University of Oslo, Faculty of Education, Norway
### Session E: 20  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S14

**SINGLE PAPER: AT-RISK STUDENTS AND HIGHER EDUCATION**

**Chair**  
Bärbel Fuerstenau, TU Dresden, Germany

**Master students’ experiences of using Design Thinking for solving an authentic challenge**  
Ebba Berggren, The Royal Institute of Technology (KTH), Sweden; Maria Weurlander, The Royal Institute of Technology (KTH), Sweden; Niall Seery, Athlone Institute of Technology, Ireland

**Influence of Media Consumption during Studies on University Dropout Rates**  
Hans Anand Pant, Humboldt-Universität zu Berlin, Germany; Judith Jitomirska, Humboldt-Universität Berlin, Germany; Carla Kühlring-Thees, Johannes Gutenberg-Universität Mainz, Germany; Olga Zlatkin-Troitschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Jasmin Schütz, Johannes Gutenberg-Universität Mainz, Germany; Roland Hopp, Johannes Gutenberg University Mainz, Germany; Marie-Theres Nagel, Johannes Gutenberg University Mainz, Germany

**The role of social support in students’ transition to university: The case of problem-based learning**  
Patrick Bijmans, Maastricht University, Netherlands; Jeannine de Bruin, Maastricht University, Netherlands; Alke Groen, Maastricht University, Netherlands

**Online education as an effective solution to integrate refugees into higher education**  
Roland Hopp, Johannes Gutenberg University Mainz, Germany; Franziska Reinhardt, Johannes Gutenberg-Universität Mainz, Germany; Olga Zlatkin-Troitschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Tobias Deribo, Johannes Gutenberg Universität Mainz, Germany; Sarah Neill-Müller@uni-mainz.de, Johannes Gutenberg Universität Mainz, Germany

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### Session E: 21  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S09

**SINGLE PAPER: MATHEMATICS AND NEUROSCIENCE**

**Chair**  
Signe Tonir, Stockholm University, Sweden

**The neural correlates of numerical order processing and their relationship to arithmetic performance**  
Stephan Vogel, University of Graz, Austria; Gerrit Sommerauer, Karl-Franzens-Universität Graz, Austria; Karl-Heinz Graßl, University College of Teacher Education Styria, Austria; Roland H. Grünberg, University of Graz, Austria

**Neural correlates of number mapping in elementary school children**  
Courtney Pollack, Massachusetts Institute of Technology, United States; Ania D’Mello, Massachusetts Institute of Technology, United States; Dayna Wilcot, Massachusetts Institute of Technology, United States; Isabelle Frosch, Massachusetts Institute of Technology, United States; Rachel Romeo, Massachusetts Institute of Technology, United States; Andreas Ingham, Massachusetts Institute of Technology, United States; Karolina Wadie, Massachusetts Institute of Technology, United States; Jimmy Capella, Massachusetts Institute of Technology, United States; Tracy Centanni, Massachusetts Institute of Technology, United States; Kelly Halverson, Massachusetts Institute of Technology, United States; John D. E. Gabrieli, Massachusetts Institute of Technology, United States; Joanna A. Christodoulou, MGH Institute of Health Professions; Massachusetts Institute of Technology, United States

**Congruency and gap effects in fraction comparison by expert young adults**  
David Maximiliano Gomez Rojas, Universidad de O’Higgins, Chile; Pablo Darriet, Universidad de Chile, Chile

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### Session E: 22  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S16

**SINGLE PAPER: ACHIEVEMENT, EMOTION AND AFFECT**

**Chair**  
Jeffrey DeVries, Technical University of Dortmund, Germany

**Are Concepts of Achievement Emotions Universal Across Cultures? A Semantic Profiling Approach**  
Kristina Lodner, Ludwig Maximilians-Universität, Germany; Kornelia Gentsch, Akademie für Psychotherapie Erlurt, Germany; Melissa Dufty, University of South Carolina, United States; Mingjing Zhu, CAS Key Laboratory of Behavioral Science, Institute of Psychology, P. R. China; Xiayao Xie, Research Team of Behavior Change & Patient Engagement, Philips Research China, China; Jason Andres Chavarria, University of Antioquia, Colombia; Reinhard Pekrun, Ludwig-Maximilians-Universität, Germany; Elisabeth Vogl, Ludwig-Maximilians-Universität (LMU), Germany; Klaus R. Scherer, Ludwig-Maximilians-Universität (LMU), Germany; Johanny J. R. Fontaine, Ghent University, Belgium; Cristina Soriano Salinas, University of Geneva, Switzerland

**Performing during a presentation: The role of self-efficacy, enjoyment, and cortisol**  
Tobias Ringseis, Berlin School of Economics and Law, Germany; Tobias Eckart, Goethe-Universität Frankfurt am Main, Germany; Wubamathi Endale, Goethe-Universität Frankfurt am Main, Germany; Kristina Klug, Goethe-Universität Frankfurt am Main, Germany; Marco Schickel, Berlin School of Economics and Law, Germany; Sonja Rohmahn, Goethe-Universität Frankfurt am Main, Germany

**Better grades through better planning? Achievement goals, goal planning effort, and exam performance**  
Martin Greisel, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany

**Learning by doing**  
Esther Odilia Breuer, Universität zu Köln University of Cologne, Germany
**Session E: 23**

**Time:** 10:15-11:45  
**Location:** Seminar Room - S10

### SINGLE PAPER: ACHIEVEMENT

<table>
<thead>
<tr>
<th>Chair</th>
<th>Ayelet Becher, Ben-Gurion University of the Negev, Israel</th>
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**Is generating oral explanations more effective than writing explanations? Text difficulty matters**  
Leone Jacob, Leibniz-Institut für Wissensmedien (IWM), Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany

**Exploring the culture of motivated persistence for Chinese graduate students**  
Karen Ngowe, The University of Hong Kong, Hong Kong; Yoon San Kong, CCGSS, Hong Kong

**Development of calculation, word problem solving and reading comprehension skills from grades 3 to 9**  
Kaja Mattalmük, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia; Piret Soodla, Tallinn University, Estonia

**The impact of heterogeneity on students’ development using different heterogeneity measures**  
Stefanie Dottel, University of Mannheim, Germany; Raina Karst, University of Mannheim, Germany; Natalie Foerster, University of Münster, Germany; Elmar Souvignier, University of Muenster, Germany; Karin Hebbecker, University of Muenster, Germany

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**Session F: 1**

**Time:** 12:00-13:30  
**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

### SIG INVITED SYMPOSIUM: SIG 14: POTENTIALS OF SIMULATIONS ACROSS PROFESSIONS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Helen Jossberger, University of Regensburg, Germany</th>
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<tr>
<td>Organiser</td>
<td>Helen Jossberger, University of Regensburg, Germany</td>
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<tr>
<td>Discussant</td>
<td>Andreas Rausch, University of Mannheim, Germany</td>
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**Expanding Apprentices’ Experiences in the Digital World**  

**Authenticity, role-play and simulation: In-scenario corrections in maritime training**  
Charlott Söllberg, University of Gothenburg, Sweden; Hans Rystedt, University of Gothenburg, Sweden

**How participating in a role-play simulation contributes to students’ self-efficacy development**  
Dorothy Duchatelet, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; Peter Bursens, University of Antwerp, Belgium; David Giliberti, University of Antwerp, Belgium; Pieter Spooren, University of Antwerp, Belgium

**Simulation as Assessment Tool for Mountain Rescuers (Non-)Technical Skills**  
Stefan Hanus, University of Regensburg, Germany; Helen Jossberger, University of Regensburg, Germany; Michael Scheumann, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany

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**Session F: 2**

**Time:** 12:00-13:30  
**Location:** Lecture Hall - H08

### SIG INVITED SYMPOSIUM: SIG 2: SCARY AND EXCITING! EMOTIONAL AND MOTIVATIONAL FACTORS IN LEARNING FROM MULTIMEDIA DOCUMENTS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Mireille Bétrancourt, University of Geneva, Switzerland</th>
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<tr>
<td>Organisers</td>
<td>Alexander Eitel, University of Freiburg, Germany; Janina Lehmann, Ulm University, Germany</td>
</tr>
<tr>
<td>Discussant</td>
<td>Ulrike Nett, Augsburg University, Germany</td>
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**The hunt for elusive ‘emotional design’ elements in instructional multimedia: The Czech case.**  
Cyril Brom, Charles University, Czech Republic; Vit Síster, Faculty of Arts, Charles University, Czech Republic; Tereza Hannemann, Charles University, Czech Republic

**Emotional Design and Video-Based Learning: situational Interest as a mediator for persistence**  
Alexander Eitel, University of Freiburg, Germany; Tino Endres, University of Freiburg, Germany; Steffen Weyrer, University of Freiburg, Institute of Psychology, Germany; Alexander Renkl, University of Freiburg, Germany

**The relationship of achievement goal orientations and multiple document comprehension**  
Cornelia Schror, University of Bamberg, Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Nina Mahlow, Leibniz Institute for Educational Trajectories (LITB), Germany; Ulf Kroehne, DIPF, Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Cordula Artest, Leibniz Institute for Educational Trajectories, Germany

**When a Picture May Not be Worth a 1000 Words: Emotional Aversive Pictures in Multimedia Learning**  
Tim Kühl, University of Mannheim, Germany; Stefan Münzer, Universität Mannheim, Germany
SYMPOSIUM: SUPPORT TEACHERS WITH THE CHALLENGES OF TECHNOLOGY-INTEGRATION

Chair
Andreas Lachner, University of Tübingen, Germany
Organiser
Iris Backfisch, Leibniz-Institut für Wissensmedien (IWM) | Knowledge Media Research Center, Germany
Discussant
Dominik Petko, University of Zurich, Switzerland

Technology in teacher education? A profile analysis of Turkish teacher educators
Jo Tondeur, Vrije Universiteit Brussel, Belgium; Müge Adnan, Muğla Sıtkı Kopman University, Turkey; Ronny Scherer, University of Oslo, Norway

Effects of Teachers’ Professional Competence on Technology-Enhanced Teaching Quality
Iris Backfisch, Leibniz-Institut für Wissensmedien (IWM) | Knowledge Media Research Center, Germany; Andreas Lachner, University of Tübingen, Germany; Christoff Hische, University of Tübingen, Germany; Frank Loose, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany

Using scripts to enhance pre-service teachers’ technology-related reasoning skills
Christina Wekerle, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

Simulation practice using real actors: Changing teachers’ beliefs about technology integration
Bracha Kramarski, Bar-Ilan University, Israel; Yafit Moradof, Bar-Ilan University, Israel

SINGLE PAPER: MOTIVATION IN TEACHING AND INSTRUCTION

Chair
Lara Forabloom, ISPA-Instituto Universitário, Portugal

On the Relation between Students’ Intrinsic Reading Motivation and Book Reading
Franziska Locher, Otto-Friedrich-University of Bamberg, Germany; Sarah Becker, Otto-Friedrich-University of Bamberg, Germany; Maximilian Pfist, University of Bamberg, Germany

Do instructions to make a drawing and strategic knowledge affect drawing use and math performance?
Johanna Reilensmann, University of Münster, Germany; Stanislaw Schukajlow, University of Münster, Germany; Claudia Leopold, University of Fribourg, Switzerland

Reading attitude and text difficulty affect gains from 1:1 reading instruction in primary school
Suzanne Mol, Leiden University, Netherlands; Christine Espin, Leiden University, United States

Continuous professional development on reading for newly qualified teachers: A mixed-method approach
Iris Vansteelandt, AP University College/Ghent University, Belgium; Suzanne Mol, Leiden University, Netherlands; Hilde Van Keer, Ghent University, Belgium

SINGLE PAPER: INSTRUCTIONAL DESIGN

Chair
Hanna Jarvenoja, University of Oulu, Finland

Performing the past? Benefits and challenges of a drama task in history education.
Tessa de Leur, University of Amsterdam, Netherlands; Carla Van Bokel, University of Amsterdam, Netherlands; Tim Huigen, University of Groningen, Netherlands

Drawing Boundaries: Effects of Learner-Generated and Instructor-Provided Illustrations
Logan Fiorella, University of Georgia, United States; Qian Zhang, University of Georgia, United States

Extending Productive Failure to a Non-STEM Domain: Testing the Effect on Learning Social Sciences
Valentina Nachitagall, Ruhr University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany; Katja Serova, Ruhr University Bochum, Institute of Educational Research, Germany

Generating a Teaching Video at Home: More Effective and Enjoyable than Restudying or Summarizing?
Vincent Hoogerheide, Utrecht University, Netherlands; Joran Visee, Utrecht University, Netherlands; Andreas Lachner, University of Tübingen, Germany; Tamara Van Gog, Utrecht University, Netherlands
### Session F: 6
**Time:** 12:00-13:30  
**Location:** Seminar Room - S15  

**SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION, TEACHING AND TEACHER EDUCATION**

**Chair**  
Julie Moote, University College London, United Kingdom

**Occupational embeddedness of early career teachers – the importance of role stress and support**  
Anita Sandmeier, The Schwyz University of Teacher Education, Switzerland; Julia Mühlhausen, Work and Organizational Psychology, University of Bern, Switzerland; Martin Gubler, Lucerne University of Applied Sciences and Arts, Switzerland

**What are the perspectives of expert educators on core practices in foreign language education?**  
Malba Barahona, Pontificia Universidad Católica de Valparaíso, Chile

**Disentangling Task Demands – Preparing Prospective EFL Teachers for Their Future Diagnostic Tasks**  
Judith Sebastián, University of Koblenz - Landau, Germany; Ingmar Hosenfeld, University of Koblenz - Landau, Germany

**Testing measurement invariance of beginning and advanced student teachers' perceptions of coherence**  
Katharina Hellmann, University of Education Freiburg, Germany; Jan Henning-Kahmann, University of Education, Freiburg, Germany

### Session F: 7
**Time:** 12:00-13:30  
**Location:** Seminar Room - S16  

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**  
Clara Schumacher, University of Mannheim, Germany

**Three cycles of teaching to weld: Developing vocational teaching on a scientific basis**  
Nina Kilbrink, Karlstad University, Sweden; Stig Börje Asplund, Karlstad University, Sweden

**Disciplinary and Multidisciplinary Teacher Learning Communities: Equal Opportunities to Learn?**  
Adi Mendler, Ben-Gurion University of the Negev, Israel; Aliza Segal, Ben-Gurion University of the Negev, Israel

**Hungarian Science and Mathematics Teachers’ Professional Developmental Needs**  
Gábor Z. Oroz, University of Szeged, Hungary; Davaajav Purejav, University of Szeged, Hungary; Edith Katalin Molnár, University of Szeged, Hungary

**Using PIAAC data to explore the problem-solving skills of adults working in the educational sector**  
Bram De Wever, Ghent University, Belgium; Rajja Hämäläinen, University of Jyväskylä, Finland; Kari Niisinen, University of Jyväskylä, Finland; Joonas Mannonen, University of Jyväskylä, Finland

### Session F: 8
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H07  

**SINGLE PAPER: HIGHER EDUCATION**

**Chair**  
Paul Swan, Monash University, Australia

**Understanding students’ acceptance of educational technology reform: a longitudinal study.**  
Ire Windey, KU Leuven, Belgium; Annelies Raes, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium

**Criteria based assessment of teaching qualifications: Issues of validity**  
Gamila Olstenberg Rupp, University of Copenhagen, Denmark; Sofie Kibayashi, University of Copenhagen, Denmark

**Shared challenges and solutions in digital pedagogy – a case of joint workshop of two teacher groups**  
Marjaana Veemans, University of Turku, Finland; Eelis Ryhimä, Hämäläinen University of Applied Sciences, Finland; Anne-Maria Kohonen, Hank University of Applied Sciences, Finland; Jenni Airota, University of Turku, Finland; Jiri Lallino, University of Turku, Finland; Jukka Niinimäki, Hämäläinen University of Applied Sciences, Finland

**Socio-Cognitive Openness in Online Knowledge Building: Does Openness keep Conversations Going?**  
Hennie van Hoost, Aeres University of Applied Sciences, Netherlands; Frank De Jong, Aeres University of Applied Sciences & Open University Heerlen, Netherlands; Jan van Aalst, University of Hong Kong, Hong Kong; Natasha de Hoog, Open University the Netherlands, Netherlands; Paul A. Kirschner, Open University of the Netherlands, Netherlands
### Session F: 9 | Time: 12:00-13:30 | Location: Seminar Room - S07

#### SINGLE PAPER: INQUIRY LEARNING

**Chair**
Jenifer Husman, University of Oregon, United States

- **The role of two types of scaffolds in technology-enhanced collaborative inquiry-based learning**
  - Joni Ländä, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Pekka Koskinen, University of Jyväskylä, Finland; Jouko Viiri, University of Jyväskylä, Finland; Jonas Mannonen, University of Jyväskylä, Finland

- **Metacognitive prompts facilitate teachers’ reflections on dynamic open inquiry**
  - Michal Zion, Bar-Ilan University, Israel; Esther Rimerman, Bar-Ilan University, Israel; Idit Adler, Bar-Ilan University, Israel

- **The Emergence of Source Evaluation Criteria: A Microgenetic Study**
  - Clark Chrin, Rutgers University, United States; Sant Barzilia, University of Haifa, Israel

- **Understanding Climate Change Through Constructive and Example-Based Scaffolds**
  - Sarah Bichler, Ludwig Maximilians-Universität (LMU), Germany; Sonya Richards, No academic affiliation, Germany; Lisa Hasenbein, Eberhard Karls Universität Tübingen, Germany; Marcia Linn, University of California-Berkeley, United States; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany

### Session F: 10 | Time: 12:00-13:30 | Location: Lecture Hall - H09

#### SINGLE PAPER: HIGHER EDUCATION

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

- **The Impact of Writing and Answering Questions on Study Success**
  - Natalie Enders, Universität Hildesheim, Germany; Sandra Rothenbusch, Institute of Psychology, Technische Universität Braunschweig, Germany

- **Identifying University Students’ Study Profiles**
  - Jukka Urtainen, University of Jyväskylä, Finland; Päivi Tynijärvi, University of Jyväskylä, Finland; Eeva Kallio, University of Jyväskylä, Finland; Mika Mattilunen, University of Jyväskylä, Finland; Asko Tolvanen, University of Jyväskylä, Finland

- **University students in the classroom: How faculty contexts interact with student expectations**
  - Samantha Marangelli, University of Melbourne, Australia

- **Targeting efficient studying in higher education – a student perspective**
  - Maria Öhrstedt, Stockholm University, Sweden; Max Scheja, Stockholm University, Sweden

### Session F: 11 | Time: 12:00-13:30 | Location: Lecture Hall - H05

#### SINGLE PAPER: TEACHING, INSTRUCTION AND ACHIEVEMENT

**Chair**
Corinne Wyss, Zurich University of Teacher Education, Switzerland

- **School Engagement in High Ability Students: Developmental Trajectory and Educational Outcomes**
  - Alicia Ramos, KU Leuven, Belgium; Bieke De Fraene, KU LEUVEN, Belgium; Karine Verschueren, KU Leuven, Belgium

- **How do students with different learning characteristic profiles perceive teacher feedback?**
  - Ariane S. Willems, University of Goettingen, Germany; Katharina Dreiling, University of Goettingen, Germany

- **Achievement Emotions and School Transition - Individual and Contextual Determinants**
  - Michaela Glasser-Zikuda, University of Erlangen-Nuremberg, Germany; Simon Meyer, University of Erlangen-Nuremberg, Germany; Ramona Obersaiar, Friedrich-Alexander Universität, Germany

- **Exploring connections of learning motives and learning strategies in self-regulated learning**
  - Éva D. Mölnár, University of Szeged, Hungary; Edit Tóth, MTA-SZTE Research Group on the Development of Competencies, Hungary
### Session F: 12 | Time: 12:00-13:30 | Location: Lecture Hall - H10

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

**Chair**
Lan Yang, The Education University of Hong Kong, Hong Kong

- **Using case-based e-learning scenarios to enhance PSTs' diagnostic and planning abilities**
  Sarah Dannemann, Leibniz University Hannover, Germany; Julian Heeg, Leibniz University of Hannover, Germany

- **Improving student teachers' competence of lesson planning form a vocational education perspective**
  Matthias Söl, University of Kassel, Germany

- **Educating for democracy through intercultural virtual problem-based learning in teacher education.**
  Christoph Dähling, University of Bonn, Germany; Jutta Standop, Friedrich-Wilhelms-Universität Bonn, Germany; Alfred Weinberger, Pädagogische Hochschule der Diözese Linz, Austria

- **How pre-service teachers define digital literacy – a cross-cultural study**
  Eva Brante, Malmö University, Sweden; Alexandra List, The Pennsylvania State University, United States; Holly K. Lee, Georgia Mason University, United States

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### Session F: 13 | Time: 12:00-13:30 | Location: Seminar Room - S09

#### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Susan Jones, University of Exeter, United Kingdom

- **Burnout Risk in Teaching: The Role of Experience, Gender, Self-efficacy and Mindfulness**
  Silke Schworm, University of Regensburg, Germany; Helen Jossberger, University of Regensburg, Germany

- **Changes in educational science research competencies among teachers in further education**
  Wolfram Rollet, University of Education Freiburg, Germany; Daniel Kitel, University of Education Freiburg, Germany; Jana Groß Ophoff, Tübingen School of Education, Germany

- **Theoretical foundations and teaching quality at universities: What do we measure? What do we know?**
  Ulrike Schwabe, DZHW - German Centre for Research on Higher Education and Science Studies, Germany; Axel Oberschelp, DZHW Hannover, Germany; Edith Braun, Justus-Liebig-Universitaet Giessen, Germany

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### Session F: 14 | Time: 12:00-13:30 | Location: Seminar Room - S06

#### SINGLE PAPER: ASSESSMENT AND EVALUATION

**Chair**
Katja Lenz, University of Education Freiburg, Germany

- **Implementation of an educational philosophy: A multiple-case study of an evaluation model**
  Shirley Medjiansky, University of Haifa, Israel; Irir Sasson, University of Haifa, Israel

- **Confidence-based marking for SRL in Secondary Teacher Education: students’ voice.**
  Ana Remesal Ortíz, Universitat de Barcelona, Spain; Fatima Vega, Universitat de Barcelona, Spain; Gemma Pérez-Clemente, Universitat de Barcelona, Spain; Mireia Álvarez-Briñquis, Universitat de Barcelona, Spain

- **Intercultural evidence of a Tablet based executive functions test for children between 7 to 10 years**
  Ricardo Rosas-Diaz, CEDEli-UC, Chile; Victoria Espinosa, Pontificia Universidad Católica de Chile, Chile; Marion Garolera, Pontificia Universidad Católica de Chile, Chile

- **Development and validation of the Playgroup Environment Rating Scale (PERS)**
  Vanessa Russo, University Institute of Lisbon (ISCTE - IUL), Portugal; Clara Barata, University of Coimbra, Portugal; Joana Alexandre, University Institute of Lisbon (ISCTE-IUL), Portugal; Catarina Leitão, University of Coimbra, Portugal; Bruno de Sousa, University of Coimbra, Portugal
### SINGLE PAPER: EDUCATIONAL EFFECTIVENESS AND QUANTITATIVE METHODS

**Chair**
Eero Ropo, Tampere University, Finland

**Evidence for the Design of Cluster-Randomized Intervention Studies on Students’ Competencies**
Sophie Stallasch, University of Potsdam, Germany; Oliver Lüdtke, Leibniz Institute for Science and Mathematics Education (IPN), Kiel, Germany; Cordula Ansel, Leibniz Institute for Educational Trajectories (LITBi), Bamberg, Germany; Martin Brunner, University of Potsdam, Germany

The continuing effect of primary school on secondary school achievement.
Melvin Chan, National Institute of Education, Singapore

**Comparing Teaching Practice Items across Countries: Using Network Analysis**
Jessica Fischer, German Institute for International Educational Research (DIPF), Germany; Jia He, TiBuDIPF, China; Eckhard Klieme, German Institute for International Educational Research (DIPF), Germany

**Comparing Teacher self-efficacy in Anglo-Saxon, Nordic and East- & South-East Asian countries**
Sina Fackler, LITBi, Germany

### SINGLE PAPER: MOTIVATION AND EMOTION

**Chair**
Ingeborg Krange, Department of Teacher Education, Norway

**I’d rather work alone. Insight into students’ recovery from teamwork and independent work.**
Sigrid Wimmer, University of Graz, Austria; Manuela Paechter, University of Graz, Austria; Ilona Papousek, University of Graz, Austria; Helmut Karl Lackner, Medical University of Graz, Austria

**University Instructors’ Achievement Goals and Subjective Well-being**
Raven Rinas, Augsburg University, Germany; Markus Drasel, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany

**Industry-school projects as an aim to foster secondary school students’ interest in STEM careers**
Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Nicolas Robin, Fachdidaktik Naturwissenschaften, Switzerland; Christina De Toffol, University of Teacher Education St.Gallen, Switzerland

**Collective efficacy, proxy efficacy, friendship-acquaintance groupings, and group performance**
Jose Hanham, Western Sydney University, Australia; John McCormick, University of Wollongong, Australia

### SINGLE PAPER: ONLINE MEASURES OF LEARNING PROCESSES

**Chair**
Tobias Halbheer, Swiss Federal Institute of Technology Zurich / ETH Zurich, Switzerland

**Measuring cognitive load during online complex learning**
Charlotte Larmuseau, KU Leuven, Belgium; Pieter Vanneste, KU Leuven, Belgium; Piet Desmet, KU Leuven KULAK, Belgium; Fien Depaepe, KU Leuven, Belgium

**How Experts Change Their (Viewing) Behavior When Modeling a Task to Novices**
Selina Nadine Emhardt, Welten Institute - Open University of the Netherlands, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Ellen Kri, Utrecht University, Netherlands; Saskia Brand Gruwel, Open University of the Netherlands, Netherlands; Christian Drum, Department of Business Studies, Åachen University of Applied Sciences, Germany, Germany; Tamara Van Gog, Utrecht University, Netherlands

**Self-report vs. actual strategy use**
Daniel Schropp, Ulm University, Germany; Sija Susann Taxis, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**Using sequence analysis to gain insight into students’ behavior while solving complex problems**
Beate Eichmann, 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; Samuel Greiff, University of Luxembourg, Luxembourg; Liene Brandhuber, Goethe-Universität Frankfurt, Germany; Johannes Naumann, University of Wuppertal, Germany
### Session F: 18  
**Time:** 12:00-13:30  
**Location:** Seminar Room - S12

**SINGLE PAPER: EDUCATIONAL TECHNOLOGY IN PRIMARY EDUCATION**

**Chair**  
Colin Jevons, Monash Business School, Australia

- **Learning via embodied learning: Investigating the impact of a digital Vs a non-digital intervention**  
  Yiannis Georgiou, Cyprus University of Technology, Cyprus; Andri Ioannou, Cyprus University of Technology, Cyprus; Panayiota Kosma, Cyprus University of Technology, Cyprus

- **Children's self-efficacy beliefs impact the efficiency of game-based learning**  
  Misa Ronimus, Nilo Mäki Institute, Finland; Ritva Ketonen, University of Helsinki, Finland

- **Single vs. multi-touch interfaces for collaborative learning with tablets**  
  Arm Weinberger, Saarland University, Germany; Lara Johanna Schmitt, Saarland University, Germany; Dimitra Tsoultsi, Saarland University, Germany

- **App clusters: Patterns of combined app use and their relation to learning**  
  Sarah Howard, University of Wollongong, Australia; Karl Maton, University of Sydney, Australia

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### Session F: 19  
**Time:** 12:00-13:30  
**Location:** Seminar Room - S04

**SINGLE PAPER: WRITING AND LITERACY**

**Chair**  
Taiga Brahm, University of Tübingen, Germany

- **Partnering with practitioners to raise achievement: Methodological challenges for robust research**  
  Judy M. Parr, University of Auckland, New Zealand; Rebecca Jesson, University of Auckland, New Zealand

- **Mediating Effects of Writing Achievement Goals on Self-Efficacy and Affect in Secondary School**  
  Bukey Aksoyurt, Çankaya University, Turkey; Meryem Yılmaz Soylu, Independent researcher, Turkey

- **Understanding Writing-to-Learn – Approaches and Educational Implications**  
  Markus Linnefmann, University of Koblenz-Landau, Germany

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### Session F: 20  
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

**SINGLE PAPER: MIXED-METHOD RESEARCH IN HIGHER EDUCATION**

**Chair**  
Mei-Shiu Chiu, National Chengchi University, Taiwan

- **Just boring or even enjoyable? Students’ achievement emotions in higher education courses**  
  Barbara Jacob, Friedrich-Alexander University Nuremberg, Germany; Florian Hofmann, Institute for Educational Science, University of Erlangen-Nuremberg, Germany; Melanie Stephan, University of Erlangen-Nuremberg, Germany; Katharina Fuchs, Institute for Educational Science, University of Erlangen-Nuremberg, Germany; Stefan Markus, University of Wuppertal, Germany; Michaela Glaesser-Zikuda, University of Erlangen-Nuremberg, Germany

- **Dental Medical Students’ Competencies for Identifying Anomalies in X-rays: When Do They Develop?**  
  Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany; Thérèse Eder, Leibniz-Institut für Wissensmedien (IWM), Germany; Juliane Richter, Leibniz-Institut für Wissensmedien, Germany; Fabian Höttig, Tübingen University Hospital Center for Dentistry, Oral Medicine, and Maxillofacial Surgery, Germany; Constanze Keutel, Tübingen University Hospital Center for Dentistry, Oral Medicine, and Maxillofacial Surgery, Germany

- **International degree students’ perceptions on how the university could enhance their study wellbeing**  
  Vísi Virtanen, University of Helsinki, Finland; Sara Rönkkönen, Aalto University, Finland; Mikko Inkinen, Aalto University, Finland; Minna Nevala, Aalto University, Finland; Merita Petälä, Aalto University, Finland

- **Psychological flexibility and organised studying to lower stress and improve well-being of students**  
  Saku Määttä, University of Turku, Finland; Henna Askainen, University of Helsinki, Finland; Nina Katajukuori, University of Helsinki, Finland
### SIG INVITED SYMPOSIUM: SIG 5: WHO BENEFITS MOST? DIFFERENTIAL EFFECTS OF EARLY CHILDHOOD EDUCATION AND CARE ON CHILD OUTCOMES

**Chair**
Lars Burghardt, University of Bamberg, Germany

**Organiser**
Lars Burghardt, University of Bamberg, Germany

**Discussant**
Wilfried Smidt, University of Innsbruck, Austria

**Topics**
- Universal ECEC as a protective mean for children from disadvantaged families in Norway?
  - Thomas Moser, Universitetet i Sarast-Norge, Norway; Henrik Daae Zachrission, Department of Special Needs Education, Norway
- Compensation or Matthew-Effect? Relations of Child Care, Family and Child Development
  - Anja Linberg, German Youth Institute, Germany; Lars Burghardt, University of Bamberg, Germany; Yvonne Anders, Freie Universität Berlin, Germany; Hans Guenther Rossbach, University of Bamberg, Germany
- Lasting preschool quality effects and the moderating role of potential risk factors
  - Simone Lehrl, University of Bamberg, Germany; Hans Guenther Rossbach, University of Bamberg, Germany; Sabine Weinert, University of Bamberg, Germany
- The Longitudinal Effect of the Quality of Early Teacher-Child Interactions on Child Outcomes
  - Marja-Kristiina Leikkanen, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä, Finland; Elja Pakarinen, University of Jyväskylä, Finland

### SIG INVITED SYMPOSIUM: SIG 11: INNOVATIVE RESEARCH ON DIGITAL TOOLS AND THEIR USE IN TEACHING AND TEACHER EDUCATION

**Chairs**
Annelies Kreis, Zurich University of Teacher Education, Switzerland; Inger Marie Dalehette, University of Agder, Norway

**Discussant**
Alicia Alonzo, Michigan State University, United States

**Topics**
- Possibilities, Challenges and Restrictions of Augmented Reality in Teacher Education
  - Corinne Wyss, Zurich University of Teacher Education, Switzerland; Wolfgang Bühler, Zurich University of Teacher Education, Switzerland
- Supporting Formative Peer-Feedback on Learning-Strategy Use by a Digital Tool
  - Anika Bürgemeister, University of Leipzig, Germany; Inga Glogger-Frey, University of Freiburg, Germany; Henrik Saalbach, University of Leipzig, Germany
- Connecting Theory and Practice in Teacher Education by Means of Observation Software
  - Aleksandra Lazareva, University of Agder, Norway; Peter Mathisen, University of Agder, Norway; Karl Midsund Nordbø, University of Agder, Norway
- Rethinking the Role of Brokers - Dutch Educational Policy in the Twittersphere
  - Martin Rehm, Pädagogische Hochschule Weingarten, Germany; Frank Cornelissen, University of Amsterdam, Netherlands; Alan Daly, University of California, San Diego, United States; Jonathan Supovitz, University of Pennsylvania, United States

### SIG INVITED SYMPOSIUM: SIG 12: WRITING RESEARCH FROM DIFFERENT PERSPECTIVES

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

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

**Discussant**
Eva Lindgren, Umeå University, Sweden

**Topics**
- The relationship between executive functions and writing in elementary-school children
  - Tanesa Limpo, University of Porto, Portugal; Marisa Filipe, University of Porto, Portugal; Sofia Magalhães, University of Porto, Portugal; Carolina Cordeiro, University of Porto, Portugal; Andreia Veloso, University of Porto, Portugal; Andreia Nunes, University of Porto, Portugal; Thierry Oline, CNRS & Université de Poitiers, France; São Luís Castro, University of Porto, Portugal
- Where do writers pause in orthographically awkward words?
  - Guido Nottbusch, University of Potsdam, Germany
- Effectivity of Writing Interventions: for theory and practice
  - Gert Rijlaarsdam, University of Amsterdam, Netherlands; Liselore van Ockenburg, University of Amsterdam, Netherlands; Anouk ten Peze, University of Amsterdam / Kennemer Lyceum Overveen, Netherlands; Tanja Janssen, Universiteit van Amsterdam, Netherlands; Daphne van Weijen, University of Amsterdam, Netherlands
- Writing with Writers
  - Debra Myhill, University of Exeter, United Kingdom
### SYMPOSIUM: CHARACTERISTICS AND COMORBIDITY OF MATHEMATICAL LEARNING DIFFICULTIES

**Chair**  
Airi Hakkarainen, University of Eastern Finland, Finland

**Organiser**  
Airi Hakkarainen, University of Eastern Finland, Finland

**Discussant**  
Anname Desoete, Ghent University / Artevelde University College, Belgium

**Presentation titles:**

- Individual Variation in Mathematics Performance: Behavioral and Cognitive Profiles  
  Marije Huismans, Radboud University, Netherlands; Tijs Kleemans, Behavioural Science Institute (BSI), Radboud University, Netherlands; Evelyn Kroosbergen, Behavioural Science Institute (BSI), Radboud University, Netherlands

- Subtypes of mathematical learning difficulties in adolescent students  
  Johan Korhonen, Åbo Akademi University, Finland; Pekka Räsänen, Niilo Mäki Institute, Finland

- Comorbidity of reading and mathematics learning difficulties: The working memory deficit profiles  
  Sha Tao, Beijing Normal University, China

- Cognitive characteristics of children with mathematical learning disabilities: A meta-analysis  
  Ilona Friez-van den Bos, University of Twente, Netherlands; Tijs Kleemans, Behavioural Science Institute (BSI), Radboud University, Netherlands; Evelyn Kroosbergen, Behavioural Science Institute (BSI), Radboud University, Netherlands

### SYMPOSIUM: PROMOTING REFLECTION AT THE WORKPLACE: HOW TO SUPPORT TOMORROW’S PROFESSIONALS

**Chair**  
Dominik Petko, University of Zurich, Switzerland

**Organiser**  
Karen Könings, Maastricht University, Netherlands

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

**Presentation titles:**

- How peers, supervisors and patients support reflection of medical residents, but also hinder it  
  Karen Könings, Maastricht University, Netherlands; Serge Morang, Maastricht University, FHM, Dept. of Educational Research and Development, Netherlands; Eline Vanassche, University of East London, Cass School of Education and Communities, United Kingdom; Frank W. J. M. Smeenk, Maastricht University, Netherlands; Laurens P. S. Stassen, Maastricht University, Netherlands

- In-Service Teacher Video Coaching: from Design to Impact – A Systematic Review  
  Sara van der Linden, University of Twente, Netherlands; Jan van der Meij, University of Twente, Netherlands; Susan McKenney, University of Twente, Netherlands

- Reflection with Mobile Technologies: Case studies on using the Metapholio App in Teacher Education  
  Dominik Petko, University of Zurich, Switzerland; Laura Müller, Schwyz University of Teacher Education, Switzerland; Regina Schmid, Schwyz University of Teacher Education, Switzerland; Michael Hielscher, Pädagogische Hochschule Schwyz, Switzerland

- Modelling and Supporting Teachers’ Technology-Integration with a Self-Monitoring Reflection Tool  
  Iris Badtisch, Leibniz-Institut für Wissensmedien (IWM) | Knowledge Media Research Center, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Stilmar, University of Tübingen, Germany; Katharina Scheter, Leibniz-Institut für Wissensmedien, Germany

### SYMPOSIUM: TEACHERS’ AND PARENTS’ SOCIAL ROLE FOR STUDENTS’ WELL-BEING AND EMOTIONS IN SCHOOL

**Chairs**  
Tina Hascher, University of Bern, Switzerland; Dave Putwain, Liverpool John Moores University, United Kingdom

**Discussant**  
Simone Volet, Murdoch University, Australia

**Presentation titles:**

- Teachers may be more important for student emotions in class than we thought  
  Tim Mainhard, Utrecht University, Netherlands; V. Sophie Oudman, Utrecht University, Department of Education, Netherlands; Lisette Hornstra, Utrecht University, Netherlands; Roel J. Bosker, Rijksuniversiteit Groningen, Dept of Education and GICON, Netherlands; Thomas Goetz, University of Konstanz, Germany

- Does warning less engaged students about likely failure make them any more engaged?  
  Dave Putwain, Liverpool John Moores University, United Kingdom

- The role of teacher justice and error culture for alienation from teachers  
  Tina Hascher, University of Bern, Switzerland; Julia Moraj, University of Bern, Switzerland

- The Impact of the Home Learning Context on Students’ Well-being, Motivation, and Emotion  
  Barbara Otto, University of Landau, Germany; Stephanie Reuter, University of Koblenz-Landau, Department of Developmental and Educational Psychology, Germany
# SYMPOSIUM: UNDERSTANDING TEACHERS' CHANGE TRAJECTORIES AND PERSPECTIVES IN TEACHER PROFESSIONAL DEVELOPMENT

**Chair**  
Ann-Kathrin Schindler, Technische Universität München, Germany

**Discussant**  
Maaike Enderdijk, University of Twente, Netherlands

<table>
<thead>
<tr>
<th>Session G: 7</th>
<th>Time: 13:45-15:15</th>
<th>Location: Lecture Hall - H04 - Knorr-Bremse Hörsaal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-perspective case study on changing beliefs and teacher practice during a training programme</td>
<td>Matthias Zimmermann, University of Fribourg, Switzerland; Miriam Moser, University of Fribourg, Switzerland; Anke Wischgoll, University of Fribourg, Switzerland; Kurt Reussler, University of Zurich, Switzerland; Christine Pauli, University of Fribourg, Switzerland</td>
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<tr>
<td>Understanding teachers’ learning zones and change trajectories in teacher professional development</td>
<td>Ann-Kathrin Schindler, Technische Universität München, Germany; Tina Seidel, Technische Universität München, Germany; Ricardo Böhme, Technical University of Munich, Germany; Marlene Wei, Technical University of Munich, Germany; Maximilian Kroger, Technical University of Munich (TUM), Germany; Martina Allos, Technische Universität München (TUM), Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany</td>
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<tr>
<td>Teachers’ learning trajectory in the Lesson Study context</td>
<td>Jan Vermunt, Eindhoven University of Technology, Netherlands; Maria Vrlik, University of Cyprus, Cyprus; Paul Warwick, University of Cambridge, United Kingdom; Paul Dudley, University of Cambridge, United Kingdom</td>
<td></td>
</tr>
<tr>
<td>Examining teachers’ perspectives on learning to facilitate argumentation</td>
<td>Alina Reznitskaya, Montclair State University, United States; Ian A.G. Wilkinson, University of Auckland, New Zealand</td>
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</table>

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# SYMPOSIUM: PURSUING CAREERS BEYOND ACADEMIA: MOTIVATIONS, CHALLENGES, AND TRAJECTORIES

**Chair**  
Isabelle Skakni, Lancaster University and University of Applied Sciences and Arts Western Switzerland, United Kingdom

**Discussant**  
Lynn McAlpine, University of Oxford / McGill University, Canada

<table>
<thead>
<tr>
<th>Session G: 8</th>
<th>Time: 13:45-15:15</th>
<th>Location: Lecture Hall - H10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving on: HASS PhD graduates negotiating motivations, aspirations and employment outcomes</td>
<td>Isabelle Skakni, Lancaster University and University of Applied Sciences and Arts Western Switzerland, United Kingdom; Cally Guerin, University of Adelaide, Australia</td>
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<tr>
<td>PhD holders’ transitions towards unconventional professional contexts</td>
<td>Andrea Galimberti, University of Milano Bicocca Italy, Italy</td>
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<tr>
<td>Non-academic careers for PhDs in the Netherlands</td>
<td>Inge Van der weijden, Leiden University, Netherlands; Christine Toelken, VU University Amsterdam, Netherlands</td>
<td></td>
</tr>
<tr>
<td>PhD holders entering non-academic sectors: A culture shock</td>
<td>Isabelle Skakni, Lancaster University and University of Applied Sciences and Arts Western Switzerland, United Kingdom; Kelsey Inouye, University of Oxford, United Kingdom; Lynn McAlpine, University of Oxford / McGill University, Canada</td>
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</tbody>
</table>

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# POSTER PRESENTATION: INSTRUCTIONAL DESIGN

**Chair**  
Sindu George, Monash University, Australia

<table>
<thead>
<tr>
<th>Session G: 9</th>
<th>Time: 13:45-15:15</th>
<th>Location: Seminar Room - S02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaze display interpretation: Can a teacher read a learner’s mind?</td>
<td>Ellen Kok, Utrecht University, Netherlands; Margot van Vermeskerken, Erasmus Medical Center, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Ignace Hooge, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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<tr>
<td>Using EEG and eye-tracking as process measures to study the effects of pictorial seductive details</td>
<td>Christian Schringer, Leibniz-Institut für Wissensmedien, Germany</td>
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<tr>
<td>Does perceived task appropriateness of the task for the model affect learning from video examples?</td>
<td>Tim van Marien, Utrecht University, Netherlands; Vincent Hoogerheide, Utrecht University, Netherlands; Larissa den Boer, Utrecht University, Netherlands; Margot van Vermeskerken, Erasmus Medical Center, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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<tr>
<td>Effects of an Instructional Approach on enhancing Pre-service Teachers’ Diagnostic Competence</td>
<td>Venance Timothy, Ludwig-Maximilians-Universität (LMU), Tanzania, United Republic of; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany; Raimund Gweidt, Ludwig-Maximilians-Universität-München, Germany; Matthias Stadler, Ludwig-Maximilians-Universität-München, Germany; James Stotts, Boston College, United States</td>
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<tr>
<td>Uncovering experts’ knowledge on improvisational expertise: The Radio Jazz Research Case.</td>
<td>Iwan Woopen, Open University of the Netherlands, Netherlands</td>
<td></td>
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</tbody>
</table>
### Session G: 10  
**Time: 13:45-15:15**  
**Location: Seminar Room - S03**

<table>
<thead>
<tr>
<th>Title</th>
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</tr>
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<tbody>
<tr>
<td><strong>POSTER PRESENTATION: TECHNOLOGY-ENHANCED LEARNING</strong></td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>Candice Guy-Gaytán, University of Nevada, Reno, United States</td>
</tr>
<tr>
<td>Effects of guidance on learning and motivation in a remote laboratory</td>
<td>Anja Haußleiter, Magdeburg-Stendal University of Applied Sciences, Germany; Sebastian Zug, Otto-von-Guericke-University Magdeburg, Germany</td>
</tr>
<tr>
<td>Convergence in co-design: Development and Effects of a Graphical Educational Modelling Language.</td>
<td>Amin Weinberger, Saarland University, Germany; Allison Kolling, Universität des Saarlandes, Germany</td>
</tr>
<tr>
<td>How do personalized visualizations influence students self-regulated learning?</td>
<td>Inge Molenaar, Radboud University Nijmegen, Netherlands; Anne Horvers, Behavioural Science Institute, Radboud University Nijmegen, Netherlands; Ryan Baker, University of Pennsylvania, United States</td>
</tr>
<tr>
<td>Exploring Classroom Dynamics in a University Setting: A Multilevel Modelling Approach</td>
<td>Fred H. F. Chan, The University of Hong Kong, Hong Kong; Allan H. K. Yuen, The University of Hong Kong, Hong Kong; Qiuye Li, The University of Hong Kong, Hong Kong; Edmund Y. Lam, The University of Hong Kong, Hong Kong; Vincent W. L. Tam, The University of Hong Kong, Hong Kong</td>
</tr>
<tr>
<td>Automatic generation of dynamic areas of interest in eye tracking: The case of software engineering</td>
<td>Rebecca Reuter, OTH Regensburg, Germany; Tobias Langer, FAU Erlangen-Nürnberg, Germany; Florian Hauser, Regensburg University of Applied Sciences, Germany; Daniel Mukoltbauer, Regensburg University of Applied Sciences, Germany; Andreas Gegenfurtner, University of Passau, Germany; Jürgen Mottok, Regensburg University of Applied Sciences, Germany</td>
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<tr>
<td>Montessori and learning in the digital age – literature and innovative materials</td>
<td>Katrin Peierl, Rudolf Steiner Schule Winterthur, Switzerland; Saskia Wedel, Alanus Hochschule, Germany</td>
</tr>
</tbody>
</table>

### Session G: 11  
**Time: 13:45-15:15**  
**Location: Seminar Room - S09**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POSTER PRESENTATION: EXPERIMENTAL STUDIES</strong></td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>Laura Kerslake, University of Cambridge, United Kingdom</td>
</tr>
<tr>
<td>The effect of font size on children’s reading time, comprehension and meta-comprehension</td>
<td>Vered Halamish, Bar-Ilan University, Israel; Yamit Balash, Bar-Ilan University, Israel</td>
</tr>
<tr>
<td>Take Lead of your Future: Female Pupils in Secondary Education and Impact of an Empowerment Program</td>
<td>Lonneke de Meijer, Erasmus University Rotterdam, Netherlands; Gabriela Koppenol-Gonzalez Marin, Erasmus University Rotterdam, Netherlands; Sabine Severiens, Erasmus University Rotterdam, Netherlands</td>
</tr>
<tr>
<td>Does Reading Medium Really Matter?</td>
<td>Shiyu Liu, Osean University of China, China</td>
</tr>
<tr>
<td>Effect of Simultaneous/Sequential Documents Presentation on Interaction Strategies and Comprehension</td>
<td>Caroline Leroy, Leibniz Institut für Wissensmedien, Germany; Yvonne Kammerer, Knowledge Media Research Center, Germany; Uwe Oestermeier, Leibniz-Institut für Wissensmedien (IWM)</td>
</tr>
<tr>
<td>Measuring metacognitive competences in text comprehension at secondary school</td>
<td>Catharina Tilken, University of Würzburg, Germany; Nicole von der Linden, University of Wuerzburg, Germany; Sandra Schmiedler, University of Würzburg, Germany; Wolfgang Schneider, University of Würzburg, Germany; Tobias Richter, University of Würzburg, Germany</td>
</tr>
<tr>
<td>The role of strategy knowledge in Fifth graders’ reading: Evidence from a guided interview protocol.</td>
<td>Julie Ayroles, University of Poitiers, France; Jean-Francois Rouet, University of Poitiers, France; Mónica Macedo-Rouet, University of Paris 8, France; Christine Ros, University of Poitiers, France; Françoise Goulié, University of Poitiers, France; Anna Potocki, University of Poitiers, France</td>
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</tbody>
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**POSTER PRESENTATION: EDUCATIONAL TECHNOLOGY**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Tove Gerholm, Stockholm University, Sweden</th>
</tr>
</thead>
</table>
|       | **Tracking geometry learning in the AR environment**  
Fang-Ying Yang, National Taiwan Normal University, Taiwan; Chia-Hui Cheng, National Taiwan Normal University, Taiwan;  
Kausal Kumar Bhagat, Indian Institute of Technology, Kharagpur, India; Wei-Kai Liu, National Taiwan Normal University, Taiwan; Meng-Jung Tsai, National Taiwan Normal University, Taiwan |
|       | **Teachers’ Diagnostic Support System: Dealing with Individual Differences in Vocational Schools**  
Tobias Kaerner, University of Konstanz, Germany; Julia Isabella Warwas, University of Goettingen, Germany; Stephan Schumann, University of Constance, Germany |
|       | **Academic Emotions in Virtual Reality Learning: Do Presence and Prior Knowledge Really Work?**  
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico; Bianca Fox, University of Wolverhampton, United Kingdom |
|       | **The Effects of Virtual Reality Learning on Task Value and Learning Strategy**  
Juming Jiang, Doshisha University, Japan; Ryo Ishii, Doshisha University, Japan; Ayumi Tanaka, Doshisha University, Japan |
|       | **Can we augment an expert? Enhancing professional training with sensors and augmented reality**  
Bibig Limbu, Open University of the Netherlands, Netherlands; Hatska Maria Jarodzka, Open University of the Netherlands, Netherlands; Roland Klemke, Open University of the Netherlands, Netherlands; Marcus Specht, Open University of the Netherlands, Netherlands |
|       | **Effect of Expert Annotations on Apprentices Gaze Patterns and Verbalisations**  
Alessia Eletta Coppi, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Catharine Gertel, École Polytechnique Fédérale de Lausanne, Switzerland; Pierre Dillamourg, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland |

**POSTER PRESENTATION: SCIENCE EDUCATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Hedwig Gasteiger, Osnabrück University, Germany</th>
</tr>
</thead>
</table>
|       | **Reflecting about science and one’s own knowledge limits through explaining scientific issues**  
Nina Vaupotić, University of Münster, Germany; Dorothee Kleinhusen, University of Münster, Germany; Regina Jucks, WWU Münster, Germany |
|       | **Meta-analysis of Learning from Hypermedia: Surprising Effects on Knowledge, Inferences, and Transfer**  
Jennifer Cromley, University of Illinois at Urbana-Champaign, United States; LuEttaMae Lawrence, University of Illinois at Urbana-Champaign, United States |
|       | **Development of students’ epistemic beliefs profiles across secondary school**  
Andrea Bernholt, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Nele Kampa, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Maria Lindhors, Umeå University, Sweden; Peter Edelsbrunner, ETH Zurich, Switzerland |
|       | **Fixed and faded reflection with feedback model: Which is the most effective for improving HOTs?**  
Mert Dian Insani, KU Leuven Belgium, Universitas Negeri Malang Indonesia, Indonesia; Marion Crauwels, KU LEUVEN, Belgium; Nathalie Charlier, KU LEUVEN, Belgium; Patrick Vandijck, KU LEUVEN, Belgium |
|       | **Interplay of individual confrontation and collaborative success on learning science conceptions**  
Sarah Hundermark, Leibniz University of Hannover, Germany; Julian Heeg, Leibniz University of Hannover, Germany; Sascha Somahne, Leibniz Universität Hannover, Germany |
|       | **Promoting Scientific Creative Thinking Using Two Models of Self-Regulated Learning**  
Avigail Cohen, Bar-Ilan University, Israel; Tova Michalsky, Bar-Ilan University, Israel |
### POSTER PRESENTATION: STUDENT LEARNING

<table>
<thead>
<tr>
<th>Chair</th>
<th>Paul Girns, The University of Sydney, Australia</th>
</tr>
</thead>
</table>
|        | **Does ICT Matter for Student Learning Activities in Mathematics Instruction?**  
        | Xian Cheng, University of Tübingen, Germany; Tim Füterer, University of Tübingen, Germany; Kathleen Stürmer, University of Tübingen, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany |
|        | **How eye read and learn: A social network approach**  
        | Leen Czysse, University of Antwerp, Belgium; Roos Van Gasse, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium; Vincent Dorche, University of Antwerp, Belgium |
|        | **Student perception of learning through a pedagogical scenario in a university class in education**  
        | Celine Girardet, University of Geneva, Switzerland; Lucie Motter Lopez, University of Geneva, Switzerland; Andrés Gomez, University of Geneva, Switzerland |
|        | **The relationship between students’ approaches to learning, self-efficacy and study-related burnout**  
        | Jokke Hlaa, University of Helsinki, Finland; Nina Katajavouri, University of Helsinki, Finland; Henri Ashkainen, University of Helsinki, Finland; Ilona Söderkv, University of Helsinki, Finland; Tiile Hailkari, University of Helsinki, Finland |
|        | **Effects of a stress-management intervention on students in higher education**  
        | Natalie Peters, TU Dresden, Germany; Baerbel Fuerstenau, TU Dresden, Germany |
|        | **Studying personal learning environments: an instrumentation and its potential for learner autonomy**  
        | Joris Felder, University of Fribourg, Switzerland |

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### POSTER PRESENTATION: COGNITIVE DEVELOPMENT

<table>
<thead>
<tr>
<th>Chair</th>
<th>Julia Eberle, Ruhr-Universität Bochum, Germany</th>
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</table>
|        | **The Effect of Response Styles – A Binational Study**  
        | Nete Kampa, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Gavin Fulmer, College of Education, University of Iowa, United States; Carin Abel-Herrmann, American Association for the Advancement of Science (AAAS), Washington DC, United States; Cory Forbes, College of Arts and Science, University of Nebraska-Lincoln, United States |
|        | **The Cognitive Diagnosis Analysis of Performance in Mathematical Literacy Assessment**  
        | Su-Wei Lin, National University of Tainan, Taiwan; Chia-Huang Chen, National Taichung University of Education, Taiwan; Ching-Shu Chen, Tainan University of Technology, Taiwan; Yun Hsia Pai, National Tsing Hua University, Taiwan |
|        | **Children’s Executive Function Development in a Classroom Context: Does Children’s Agency Matter?**  
        | Janina Eberhart, University of Cambridge, United Kingdom; Hayley Gains, University of Cambridge, UK, United Kingdom; Sara Baker, Faculty of Education, United Kingdom |
|        | **Does poverty harm? Effects of parental income on early vocabulary development**  
        | Claudia Kanawth, Otto-Friedrich-University of Bamberg, Germany; Marja Attig, Leibniz Institute for Educational Trajectories (LIfB), Germany; Jutta von Maurice, Leibniz Institute for Educational Trajectories (LIfB), Germany; Sabine Weinert, University of Bamberg, Germany |
|        | **Technology based assessment of phonological awareness for kindergarteners**  
        | Renata Kiss, MTA-SZTE Research Group on the Development of Competencies, Hungary; Dóra Mokri, University of Szeged Faculty of Science and Informatics, Hungary |
|        | **A Framework for the Statistical Modeling of Conceptual Change in Science**  
        | Peter Edelbrunner, ETH Zurich, Switzerland |
### Session G: 16 | Time: 13:45-15:15 | Location: Seminar Room - S01

**POSTER PRESENTATION: TEACHING AND INSTRUCTION**

| Chair | Student heterogeneity in vocational schools from the perspective of teachers  
Julian Klaus, Otto-Friedrich-University of Bamberg, Germany |
|-------|------------------------------------------------------------------|
|       | The challenge of valuing diversity: individual feedback situations in inclusive settings  
Amelie-Hirsch, University of Education Freiburg, Germany; Saskia Opaliniski, University of Potsdam, Germany |
|       | Are teachers ready for effective cooperation at university museum: projects at Lomonosov MSU  
Marina Pikulenko, Lomonosov Moscow State University, Russian Federation; Lyudmila Popova, Lomonosov Moscow State University, Russian Federation |
|       | Using Technology to Teach Writing: Planning of a Systematic Review and Meta-analysis  
Andrea Nunes, University of Porto, Portugal; Teresa Limpio, University of Porto, Portugal; Sá Luís Castro, University of Porto, Portugal |
|       | Pre-service Primary School Teachers’ Preparation for Team-Teaching in Inclusive Schools  
Fabian Hoya, Paderborn University, Germany; Marwin Felix Lüer, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Theresa Mester, Paderborn University, Germany; Alexander Kirsch, Paderborn University, Germany; Eva Blumberg, University of Paderborn, Germany; Susanne Schwab, University of Vienna, Austria; Frank Hellmich, Paderborn University, Germany |
|       | Vocational education teachers’ perceptions of pedagogical practices applying collaborative learning  
Anni Silvola, University of Oulu, Finland; Pia Naykki, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland |

### Session G: 17 | Time: 13:45-15:15 | Location: Seminar Room - S04

**POSTER PRESENTATION: TEACHING AND INSTRUCTION**

| Chair | Pupils’ fixed mindsets: Influences of teachers’ fixed-ability practices and beliefs  
Pia Krejkes, University of Cambridge, United Kingdom; Ros McLellan, Cambridge University, United Kingdom |
|-------|-------------------------------------------------------------------------------|
|       | Coherence in teacher education – A conceptual analysis and clarification of a comprehensive term  
Uta Wagener-Praed, University of Oldenburg, Germany; Juliane Schlesier, University of Oldenburg, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany |
|       | Teaching and Learning in Freedom-Based Learning Environments: A Systematic Review  
Dennis Hauk, Friedrich-Schiller-University of Jena, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany |
|       | Design a professional program for preservice kindergarten teachers learning how to teach mathematics  
Ching-Shu Chen, Tainan University of Technology, Taiwan; Su-Wei Lin, National University of Tainan, Taiwan; Chia-Huang Chen, National Taichung University of Education, Taiwan; Yun-Hea Pai, National Tsing Hua University, Taiwan |
|       | Teacher educators’ conceptions of modeling: a phenomenographic study  
Helena Montenegro, Pontificia Universidad Católica de Chile, Chile |
|       | How students make sense about what they read: An analysis of Portuguese textbooks  
Carolina Cordeiro, University of Porto, Portugal |
<table>
<thead>
<tr>
<th>Session G: 18</th>
<th>Time: 13:45-15:15</th>
<th>Location: Seminar Room - S13</th>
</tr>
</thead>
</table>

**POSTER PRESENTATION: STUDENT LEARNING AND RESEARCHER EDUCATION**

**Chair**  
Lidwijn van Katwijk, NHL-Stenden / University of Groningen, Netherlands

- **What should we learn at school? An analysis of student learning interests in disadvantaged contexts**  
  Daniel Araneda, Pontificia Universidad Católica de Chile, Chile

- **When microgenetics meets enactivism: knowledge transformation among apprentice psychotherapists**  
  Gilles Dieumegard, Université de Montpellier, France

- **The effectiveness of grade retention: A systematic review**  
  Joana Pipa, ISPA - Instituto Universitário / CIE-ISPA (Research Center in Education), Portugal; Mieke Goos, UCiL, Belgium; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal

- **Researching with enthusiasm? A study on achievement emotions, predictors and effects on achievement**  
  Julia S. Meuleners, LMU Munich, Germany; Julia Ebeler, Ruhr-Universität Bochum, Germany; Birgit J. Neuhaus, LMU Munich, Germany

- **The Effect of Low Academic Performance on Students’ Well-Being**  
  Linda Salih, University of Pristina, Kosovo

- **Students’ questions about science texts: the influence of the title**  
  Piedade Vaz-Rebelo, University of Coimbra, Portugal; Maria Morgado, High School of Tomar, Portugal; Catarina Costa, University of Coimbra, Portugal; Carlos Rebelo, University of Coimbra, Portugal; Graça Bidarra, University of Coimbra, Portugal; Carlos Barreiro, University of Coimbra, Portugal

<table>
<thead>
<tr>
<th>Session G: 19</th>
<th>Time: 13:45-15:15</th>
<th>Location: Seminar Room - S11</th>
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</table>

**POSTER PRESENTATION: QUALITATIVE METHODS**

**Chair**  
Sarah-Larissa Hecker, Universität Bielefeld, Germany

- **Conceptualizing teaching expertise in higher education: A systematic review of frameworks**  
  Esther van Dijk, Universiteit Utrecht / Hogeschool Utrecht, Netherlands

- **Implementation of dialogic teaching with comparison of the primary and secondary schools**  
  Jitka Pischke, Palacky University in Olomouc, Czech Republic; Jitka NÁBEĽKOVÁ, Palacky University, Czech Republic; Danping Peng, Faculty of Education, Palacky University, Czech Republic

- **Teachers' educational goals in everyday teaching practices**  
  Kevin Zweers, Leiden University, Netherlands

- **Current developments towards inclusive secondary schools – are teachers at risk?**  
  Eva-Maria Bennemann, Technical University of Munich, Germany

- **School counselors’ perspective on and professional approach towards cultural diversity in Germany**  
  Josef Strasser, University of Koblenz-Landau, Germany

- **Teachers’ professional conversations about how to approach the programming content of the curriculum**  
  Peter Vinnervik, Umea University, Sweden
**Session G: 20  Time: 13:45-15:15  Location: Seminar Room - S12**

**POSTER PRESENTATION: TEACHING AND PROFESSIONAL DEVELOPMENT**

**Chair**  
Jaap Schuijtema, University of Amsterdam, Netherlands

**Vocational exploration and working conditions in internships from the perspective of young migrants**  
Hannes Reinke, Otto-Friedrich-Universität Bamberg, Germany

**Challenging young adults’ intention-behavior-gap on sustainable consumption**  
Mona Ott, Ludwig-Maximilians-Universität, Germany; Susanne Ritter von Marx, Ludwig-Maximilians-Universität (LMU), Germany; Christine Kreuzer, Ludwig-Maximilians-Universität (LMU), Germany; Susanne Weber, Ludwig-Maximilians-Universität, Germany

**21st century skills, multiple literacies and development of RE teacher education**  
Martin Ubani, University of Eastern Finland, Finland; Kaisa Viinikka, University of Eastern Finland, Finland

**Effects of Tonal Competencies on the Development of Subskills of Musical Performance**  
Zydcjan Wolfs, Open University of the Netherlands, Netherlands

**Role of technology in fostering SRL strategies of finance professionals during uncertainty**  
Vasudha Chaudhari, Open University, United Kingdom; Leona Jacob, University of Regensburg, Germany; Alison Littlejohn, Open University, United Kingdom; Regina Mulder, University of Regensburg, Germany

**Relationship between surface structures and error occurrence in the classroom**  
Patricia Köpter, Goethe University Frankfurt, Germany

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**Session G: 21  Time: 13:45-15:15  Location: Seminar Room - S15**

**POSTER PRESENTATION: PRE-SERVICE TEACHER EDUCATION AND TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**  
Oddny Judith Solheim, The Norwegian Reading Centre, Norway

**Teachers’ integrative pedagogical knowledge: Theoretical formulations and empirical findings**  
Mikko Niemelä, University of Helsinki, Finland

**Europeanisation in teacher education: Case studies of Austria, Greece and Hungary**  
Vasilios Symeonidis, University of Innsbruck, Austria

**Comprehensive analyses for single-case phase designs**  
René Tanious, KU Leuven, Belgium; Tamal Kumar De, KU Leuven, Belgium; Patrick Orghena, KU Leuven, Belgium

**School Inclusion and Teacher Health**  
Milena Peperkorn, Institut für Erziehungswissenschaft, Germany; Katharina Müller, Institut für Erziehungswissenschaft, Germany

**Beliefs about a teacher’s professional role: Changes during University Teacher Training**  
Daniel Mann, Otto-Friedrich-Universität Bamberg, Germany; Donata Mehler, Otto-Friedrich-Universität of Bamberg, Germany; Jennifer Paetsch, University of Bamberg, Germany; Barbara Drechsel, University of Bamberg, Germany; Cordula Arteit, Leibniz Institute for Educational Trajectories, Germany

**A Review of Educational Psychology Misconceptions**  
Bobby Hoffman, University of Central Florida, United States; Morgan McAfee, Self-employed Educational Consultant, United States
POSTER PRESENTATION: PRIMARY EDUCATION

Chair
Guy Durden, University College London, United Kingdom

How carry condition and problem size affect the solving of word problems
Verena Dresen, UMIT, Health & Life Sciences University, Austria; Silvia Pinter, Institute of Psychology, UMIT, Health & Life Sciences University, Austria; Korbinian Moeller, Leibniz-Institut für Wissensmedien, Germany

Rational number tasks in elementary school mathematics textbooks: A danger of misconceptions
Parvanee Babari, Pädagogische Hochschule Schwyz, Switzerland; Lennart Schalk, PH Schwyz, Switzerland

The nature of knowing and students in need of special education
Maria Lindros, Umeå University, Sweden; Helena Roos, Linneus university, Sweden; Anette Bagger, Umeå University, Sweden

What kind of self-regulated learning supports exist for primary and secondary school levels
Marka Koivuniemi, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland

Exploring Epistemic Climates of Elementary School Students on Six Continents
Florian Fauchet, www.ThinkingHabits.com, United States; Regina Rotstein, University of Toledo, United States; Kristen Porter, Mercy College, United States; Andres Acher, Martin Luther University Halle-Wittenberg, Germany; Valerie Frédo, Université Toulouse - Jean Jaurés, France; Yue Gu, University of Toledo, United States; Andrea Mohnme, School system Luebeck, Germany; Elizabeth Curtis, Queensland University of Technology, Australia; Jo Lunn Brownlee, Queensland University of Technology, Australia

Concreteness fading with Montessori materials to teach mathematical equivalence
Rosanna Cottone, University of Roma Tre, Italy; Giuseppe Bove, Roma Tre University, Italy; Paola Perucchi, University Roma Tre, Italy

Session H: 1

Invited Session: Rethinking Tomorrow’s Education in South Africa

Chair
Gert van der Westhuizen, University of Johannesburg, South Africa

Discussant
Michael Samuel, University of KwaZulu-Natal, South Africa

The African university in the neoliberal era
Amasa Ndlovu, University of Johannesburg, South Africa

Moving beyond the rhetoric of decolonisation: From education for all to education for relevance
Labby Ramdhani, University of KwaZulu-Natal, South Africa

Decolonisation, cognitive justice and teacher education
Gert van der Westhuizen, University of Johannesburg, South Africa

Change and continuity in doctoral supervision: A case study of a South African University
Michael Samuel, University of KwaZulu Natal, South Africa

Session H: 2

Invited Session: EFG: Bridging Cognitive Load and Self-Regulated Learning: From Metacognition to Mental Effort and Back

Chair
Anique de Bruin, Maastricht University, Netherlands

Organisers
Alexander Renkel, University of Freiburg, Germany; Anique de Bruin, Maastricht University, Netherlands

Discussant
Rakelit Ackerman, Technion - Israel Institute of Technology, Israel

The relation between subjective mental effort measures and judgments of learning: a meta-analysis
Marine Baars, Erasmus University Rotterdam, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Fred Paas, Erasmus University Rotterdam University of Wollongong, Netherlands

Effects of promoting self-regulated learning on mental effort and mental efficiency
Ferdinand Stebner, Ruhr University Bochum, Germany; Corinna Schuster, Ruhr University Bochum, Germany; Melanie Trypka, Ruhr-University Bochum, Germany; Detlev Leutner, University of Duisburg-Essen, Germany; Joachim Wirth, Ruhr University Bochum, Germany

Using Gaze Displays to Foster Self-Monitoring
Tamara Van Gog, Utrecht University, Netherlands; Christine Postema, University of Tubingen, Netherlands; Julius Meier, Utrecht University, Netherlands; Anne Schueler, Leibniz-Institut für Wissensmedien, Germany; Diedrich Neherster, Lund University, Sweden; Katharina Schelter, Leibniz-Institut für Wissensmedien, Germany

Self-Regulated Learning by Writing Learning Protocols: Do Learners’ Goal Orientations Matter?
Jasmin Mowing, Ruhr University Bochum, Germany; Julian Roelle, Ruhr University Bochum, Germany
### Session H: 3
**Time:** 15:30-17:00  
**Location:** Lecture Hall - H10

**SYMPOSIUM: ALTERNATIVES TO SELF-REPORT MEASURES IN RESEARCH ON LEARNING AND TEACHING IN HIGHER EDUCATION**

**Chairs**  
Anna Parpala, University of Helsinki, Finland; Telle Halikari, University of Helsinki, Finland

**Organiser**  
Lisa Postareff, University of Turku, Finland

**Discussant**  
Daniel Dinsmore, University of North Florida, United States

- Can eye movements inform us on the role of task interest and prior knowledge in learning from texts?  
  - Margot Chaulac, University of Antwerp, Belgium; Leen Catryse, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium

- Integrating an open-access test in student learning survey: conceptual and methodological challenges  
  - Sonia Ille, University of Cambridge, United Kingdom; Jan Vermunt, Eindhoven University of Technology, Netherlands; Anna Vignoles, University of Cambridge, UK, United Kingdom

- New formats of assessing communication skills in higher education  
  - Edith Braun, Justus-Liebig-Universität Giessen, Germany; Isabel Hofmeister, University of Kassel, Germany; Ulrike Schwabe, D2IH - German Centre for Research on Higher Education and Science Studies, Germany

- Combining self-report data and physiological data in examining academic emotions  
  - Lisa Postareff, University of Turku, Finland; Petri Nokelainen, Tampere University, Finland; Laura Pykkä, University of Tampere, Finland; Julius Ylänne, University of Turku, Finland; Anna Parpala, University of Helsinki, Finland

### Session H: 4
**Time:** 15:30-17:00  
**Location:** Lecture Hall - H08

**SYMPOSIUM: CONCEPTUAL AND METHODOLOGICAL CHALLENGES FOR VALID INFERENCES ON EDUCATIONAL EFFECTIVENESS**

**Chair**  
Alexander Naumann, DIPF | Leibniz-Institute for Research and Information in Education, Germany

**Organisers**  
Stephanie Musow, University of Teacher Education St.Gallen, Switzerland; Alexander Naumann, DIPF | Leibniz-Institute for Research and Information in Education, Germany

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

- Instructional Sensitivity of Test Items: The Challenge of Incorporating Instructional Measures  
  - Stephanie Musow, University of Teacher Education St.Gallen, Switzerland; Alexander Naumann, DIPF | Leibniz-Institute for Research and Information in Education, Germany; Jan Hochweber, University of Teacher Education St. Gallen, Switzerland; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany

- Subject-specificity of Students' Teaching Quality Perceptions  
  - Ann-Kathrin Jaekel, University of Tubingen, Germany; Richard Goelner, University of Tuebingen, Germany; Wolfgang Wagner, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany

- Testing the Generalization to the Domain Inference  
  - Maria Araceli Ruiz-Primo, Stanford University, United States; Min Li, University of Washington, United States; Jim Minstrell, Facet Innovations, United States

- Dimensionality of Achievement Measures: The Role of Group-Level Item Covariance Structures  
  - Alexander Naumann, DIPF | Leibniz-Institute for Research and Information in Education, Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany

### Session H: 5
**Time:** 15:30-17:00  
**Location:** Seminar Room - S01

**SYMPOSIUM: STUDENT INVOLVEMENT IN THE CO-CREATION OF EDUCATION: BENEFITS, CHALLENGES AND EXAMPLES FROM PRACTICE**

**Chair**  
Karen Körnings, Maastricht University, Netherlands

**Organiser**  
Karen Körnings, Maastricht University, Netherlands

**Discussant**  
Jeroen Bron, National institute for curriculum development, SLO, Netherlands

- Conceptualisations and Benefits of Co-Creation of the Curriculum in Higher Education  
  - Tanya Lubicz-Nawrocha, University of Edinburgh, United Kingdom

- Students' perceptions regarding student-staff partnerships for improving education  
  - Samantha Martens, Maastricht University, Netherlands; Annemarie Spruijt, Utrecht University, Netherlands; Ineke Wolfhagen, Maastricht University, Netherlands; Jill Whittingham, Maastricht University, Netherlands; Diana Dolmans, Maastricht University, Netherlands

- Student Voice – the Bridge to Learning: Hungarian experiences  
  - Anna Imre, Eszterházy Károly University, Hungary

- Co-creation in education: challenges and approaches  
  - Karen Körnings, Maastricht University, Netherlands; Serge Mordang, Maastricht University, FHML, Dept. of Educational Research and Development, Netherlands; Frank Smeenk, Maastricht University, Netherlands; Laurents Stassen, Maastricht University, Netherlands
### SYMPOSIUM: THE DEVELOPMENT OF MULTIPlicative REASONING: EARLY FOUNDATIONS AND THE ROLE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Xenia Vamvakoussi, University of Ioannina, Greece</th>
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<tbody>
<tr>
<td>Organisers</td>
<td>Xenia Vamvakoussi, University of Ioannina, Greece; Wim Van Dooren, KU Leuven, Belgium</td>
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<td>Discussant</td>
<td>Konstantinos Christou, University of Western Macedonia, Greece</td>
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**Quantification in the Greek kindergarten curriculum: Additive Field vs. Multiplicative Field**
Xenia Vamvakoussi, University of Ioannina, Greece; Lina Vrakas, University of Ioannina, Greece; Maria Kaktirimidou, x, Greece

**Early development of proportional reasoning: a cross-sectional study in ages 5 to 9**
Wim Van Dooren, KU Leuven, Belgium; Eilen Vanluydt, KU LEUVEN, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**Unraveling children’s preference for additive or multiplicative relations: a reaction times study**
Tine Degranda, KU Leuven, Belgium; Leven Verschaffel, KU Leuven, Belgium; Wim Van Dooren, KU Leuven, Belgium

**Intensive quantities and rational numbers**
Terezinha Nunes, University of Oxford, United Kingdom; Peter Bryant, Oxford University, United Kingdom; Deborah Evans, Oxford University, United Kingdom; Despina Desli, Oxford University, United Kingdom; Daniel Bell, Oxford University, United Kingdom

### SYMPOSIUM: DISETANGLING CHILDREN’S SCIENTIFIC REASONING SKILLS: WHAT DO THEY KNOW AND HOW DO THEY LEARN?

<table>
<thead>
<tr>
<th>Chair</th>
<th>Erika Schlatter, Radboud University, Netherlands</th>
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<td>Discussant</td>
<td>Eleni Kyza, Cyprus University of Technology, Cyprus</td>
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**Scientific reasoning in primary classrooms: In search of children’s need for support.**
Erika Schlatter, Radboud University, Netherlands; Ard Lazonder, Radboud University, Netherlands; Inge Mokkenaar, Radboud University Nijmegen, Netherlands

**Preschoolers recognize and justify controlled experiments**
April Moeller, Ludwig Maximilians-Universität München, Germany; Beate Soda, Ludwig-Maximilians-Universität (LMU), Germany

**Effects of explicit instruction on the acquisition of students’ science skills in primary education**
Patricia Kruit, Amsterdam University of Applied Sciences, Netherlands; Ron Oostdam, University of Amsterdam, Netherlands; Ed van den Berg, Vrije Universiteit Amsterdam, Netherlands; Jaap Schultema, University of Amsterdam, Netherlands

**Assessment and training of experimentation skills in primary school children**
Sonja Peteranderl, ETH Zurich, Switzerland; Anne Deignany, University of Leipzig, Germany; Elisbeth Stern, ETH Zurich, Switzerland; Ralph Schumacher, ETH Zurich, Switzerland

### SYMPOSIUM: EMOTIONAL REGULATION IN COLLABORATIVE LEARNING ENVIRONMENTS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Nikki Lobczowski, University of North Carolina at Chapel Hill, United States</th>
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<td>Discussant</td>
<td>Susanne Lajoie, McGill University, Canada</td>
</tr>
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**Socioemotional Regulation Strategies used in a Project-Based Learning Environment**
Nikki Lobczowski, University of North Carolina at Chapel Hill, United States; Kayloy Lyons, Monash University, Australia; Jeff Greene, University of North Carolina, United States; Jacqueline E. McLaughlin, University of North Carolina at Chapel Hill, United States

**Solo and Group Strategies for Regulating Positive and Negative Emotions During Online Collaboration**
Sarah Greco, University of Victoria, Canada; Allyson Hadwin, University of Victoria, Canada; Elizabeth Webster, University of Victoria, Canada

**How does group level emotion regulation in collaborative learning change the way group members feel?**
Kristina Kurki, University of Oulu, Finland; Hanna Jarventoja, University of Oulu, Finland; Tiina Törmänen, University of Oulu, Finland

**The Interrelation between Shared Emotion and Regulation for Group Intellectual Progress**
Toni Rogat, Purdue University, United States; Britte Cheng, SRI International, United States; Temitope Adeoye, Purdue University, United States; Andrea Gomol, Indiana University, United States; Anne Traynor, Purdue University, United States; Patrik Lundh, SRI International, United States; Cindy Hmelo-Silver, Indiana University, United States
### SYMPOSIUM: BEYOND JUDGMENT ACCURACY: UNDERSTANDING TEACHERS' COGNITIVE PROCESSES IN DIAGNOSTIC JUDGMENTS

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<thead>
<tr>
<th>Chair</th>
<th>Tableaux denoted: Use of specific and un specific knowledge in judging task difficulties</th>
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<tr>
<td>Katharina Lobl, University of Education Freiburg, Germany</td>
<td>Timo Leuders, University of Education Freiburg, Germany; Andreas Ostermann, University of Education Freiburg, Germany; Katharina Lobl, University of Education Freiburg, Germany</td>
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<td>Discussant</td>
<td>Processing surface and deep features when judging task difficulty: Effects of PCK and time pressure</td>
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<td>Lieven Verschaffel, KU Leuven, Belgium</td>
<td>Andreas Rieu, PH Freiburg, Germany; Katharina Lobl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Stephanie Herppich, DLR Project Management Agency, Germany</td>
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<td>Using Social Network Analysis to analyse Judgement Process Data from a Simulated Classroom</td>
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<td>Matthias Mückhoff, Otto-Friedrich-Universität Bamberg, Germany; Tobias Rausch, University of Bamberg, Germany; Cordula Arent, Leibniz Institute for Educational Trajectories, Germany</td>
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<td>Teachers' cue-utilization affects their monitoring accuracy of students' reading comprehension</td>
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<td>Janneke van de Pol, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Keith Thiede, Boise State University, United States</td>
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### ROUNDTABLE: HIGHER EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Classroom observation of teacher-focused teaching: The student perspective</th>
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<tbody>
<tr>
<td>Josephine Moate, University of Jyväskylä, Finland</td>
<td>Christine Johannes, University of Erfurt, Germany</td>
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<td>Lecturers' achievement goals as predictors for the processing and use of student feedback</td>
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<td>Julia Hein, University of Mannheim, Germany; Martin Daumiller, University of Augsburg, Germany; Rainer Rinas, University of Augsburg, Germany; Stefan Janke, University of Mannheim, Germany; Markus Dresel, University of Augsburg, Germany; Oliver Dickhaut, University of Mannheim, Germany</td>
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<td>Psychological flexibility and its relation to learning processes</td>
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<td>Henni Asikainen, University of Helsinki, Finland; Nina Katajainen, University of Helsinki, Finland</td>
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### ROUNDTABLE: MOTIVATION AND EMOTION IN STUDENT LEARNING

<table>
<thead>
<tr>
<th>Chair</th>
<th>Exploring inhibiting and facilitating factors for academic achievement of gifted students</th>
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<tr>
<td>Bobby Hoffman, University of Central Florida, United States</td>
<td>Katrijn Bartner, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; Karine Verschueren, KU Leuven, Belgium</td>
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<td>Strengthened from the beginning – How to handle the impact of written exams on primary school students</td>
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<td>Olga Rapoport, Universität Koblenz-Landau, Germany; Sarah Kahl, University of Koblenz and Landau, Germany; Eva Neidhardt, Universität Koblenz-Landau, Campus Koblenz, Germany</td>
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<td>Students brooding over exams. Measuring post-event processing in test anxiety with new methods</td>
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<td>Sarah Kahl, University of Koblenz and Landau, Germany; Olga Rapoport, Universität Koblenz-Landau, Germany; Eva Neidhardt, Universität Koblenz-Landau, Campus Koblenz, Germany</td>
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### ROUNDTABLE: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**  
Iwan Wopereis, Open University of the Netherlands, Netherlands

**Proximity and Learning in Inter-organizational Collaboration for Inclusive Educational Settings**  
Jantien Gerdes, Vrije Universiteit Amsterdam, Netherlands

**Design principles for a professional development program on promoting students’ reading motivation**  
Iris Vansteelandt, AP University College/Ghent University, Belgium; Suzanne Mol, Leiden University, Netherlands; Hilde Van Keer, Ghent University, Belgium

**Themes for Advancing Research and Practice on Teacher Education for Using Games for Learning**  
Mamta Shah, Drexel University, United States; Aroulis Foster, Drexel University, United States

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### ROUNDTABLE: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION

**Chair**  
Mandy Hommel, TU Dresden, Germany

**Much.Matter.in.Motion: Learning Science through Constructing Computational Models of Complex Systems**  
Janan Saba, University of Haifa, Israel

**The effect of speech technology on literacy development**  
Marianne Engen Møre, University of Agder, Norway

**Digital games in the context of financial literacy education: An instructional content analysis**  
Julia Schultheis, University of Mannheim, Germany; Carmela Aprea, University of Mannheim, Germany

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### ROUNDTABLE: LEARNING ANALYTICS AND METACOGNITION

**Chair**  
Inken Gast, Maastricht University, Netherlands

**Mining Instructors’ Self-Regulated Learning in the Context of Using a Learning Analytics Dashboard**  
Lingyun Huang, McGill University, Canada; Juan Zheng, McGill University, Canada; Yu Xin Chen, Indiana University, United States; Cindy Hamelo-Silver, Indiana University, United States; Susanne Lapoie, McGill University, Canada

**Metacognitive development and associations to executive function and motivation in problem-solving**  
Loren Marulis, Connecticut College, United States; Lindsey Nelson, Indiana University, United States

**Investigating and improving students’ feedback literacy using trace data for writing assignments**  
Giza Schumacher, University of Mannheim, Germany; Joanna Tai, Deakin University, Australia; David Boud, University of Technology Sydney/ Deakin University, Australia; Dirk Ijzenthal, University of Mannheim, Germany

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### ROUNDTABLE: HIGHER EDUCATION

**Chair**  
Kerstin Helker, RWTH Aachen University, Germany

**Expectations and Assessment Standards of Community Partners in Service-Learning Projects**  
Maren Schlégler, Frankfurt University of Applied Sciences, Germany; Kemal Tursun, Frankfurt University of Applied Sciences, Germany; Susanne Koch, Frankfurt University of Applied Sciences, Germany; Sebastian Reis, Frankfurt University of Applied Sciences, Germany; Lukas Pfast, Frankfurt University of Applied Sciences, Germany

**Challenges involved in a latent variable analysis within a study of LGBTQ+ students’ resilience**  
Charlotte Allen, University of Cambridge, United Kingdom

**Pharmacy students’ prior knowledge and epistemic cognition at the beginning of university studies**  
Ilona Södervik, University of Helsinki, Finland; Nina Katajaviiri, University of Helsinki, Finland; Leena Hanski, University of Helsinki, Finland
### Session H: 16
**Time:** 15:30-17:00  
**Location:** Seminar Room - S02

**ROUNDTABLE: TEACHING AND TEACHER EDUCATION**

**Chair:** Ayelet Becher, Ben-Gurion University of the Negev, Israel

**Rethinking the Continuum of Teacher Concerns**
Jori Beck, Old Dominion University, United States; William Muth, Virginia Commonwealth University, United States; Kurt Sternhagen, Virginia Commonwealth University, United States; Christina Santoyo, Young Harris College, United States

**Professional development in language promotion for primary school teachers: challenges and chances**
Rosa Hettmannspurger, Goethe-University Frankfurt, Germany; Christine Sontag, Humboldt-Universität zu Berlin, Germany; Susanne Mannel, Goethe University Frankfurt am Main, Germany; Ilonca Hardy, Goethe-Universität Frankfurt, Germany

**Pre-service teachers’ perception of classroom technology integration: a longitudinal study**
Haoyue Zhang, University of Houston, United States; Sara McNeil, University of Houston, United States; Susie Gronseth, University of Houston, United States; Bulent Dogan, University of Houston, United States; Erwin Hanboke, University of Houston, United States; George Zhao, University of Houston, United States; Lydia Ugwu, University of Houston, United States

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### Session H: 17
**Time:** 15:30-17:00  
**Location:** Seminar Room - S13

**ROUNDTABLE: LEARNING AND SOCIAL INTERACTION**

**Chair:** Tanya Paez, University of Cambridge, United Kingdom

**Collective learning through Theater of the Oppressed in a Brazilian prison**
Laure Kloetzer, Institute of Psychology & Education, Switzerland; Cristiane Leao de Castro, Institute of psychology and education, University of Neuchâtel, Switzerland

**What did they say to you, and how?**
Michiel van Diggelen, Open University of the Netherlands, Netherlands; Maarten Versteeg, Eindhoven University of Technology, Netherlands; Johanna Kint, Eindhoven University of Technology, Netherlands; Sonia M. Gomez Puente, Eindhoven University of Technology, Netherlands; Daisy O'Neill, Eindhoven University of Technology, Netherlands; Bernice d'Argu, Eindhoven University of Technology, Netherlands

**High-school students and consistency: an argumentative approach.**
Elsabetta Montanari, Ca' Foscari University of Venice, Italy

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### Session H: 18
**Time:** 15:30-17:00  
**Location:** Seminar Room - S04

**ROUNDTABLE: ASSESSING COGNITIVELY ACTIVATING INTERACTION STRATEGIES IN PRESCHOOL**

**Chair:** Kit Double, University of Oxford, United Kingdom

**Assessing cognitively activating interaction strategies in preschool**
Michael Lichtblau, Leibniz University Hannover, Germany; Cathleen Bethke, Leibniz University Hannover, Germany; Stefani Lind, Leibniz Universität, Germany; Antje Rothe, Institute for Special Needs, Germany; Heike Wadapohl, Leibniz University Hannover, Germany

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### Session H: 19
**Time:** 15:30-17:00  
**Location:** Seminar Room - S10

**ROUNDTABLE: MIXED-METHOD RESEARCH**

**Chair:** Margje W.J. van de Wiel, Maastricht University, Netherlands

**Global education in teacher training - pre-service teachers’ knowledge and beliefs**
Sarah Jane Brunkhorst, University of Oldenburg, Germany; Annegret Jansen, University of Oldenburg, Germany; Ulrike-Marie Krause, University of Oldenburg, Germany

**„GeLern“: Modelling, measuring and fostering of professional competencies of pre-service teachers**
Xiaokang Sun, Leibniz University Hannover, Germany; Sarah Hundertmark, Leibniz University Hannover, Germany; Alexander Kauert, University Koblenz-Landau, Germany; Bettina Lindmeir, Leibniz University Hannover, Germany; Christian Lindmeir, University Koblenz-Landau, Germany; Andreas Nehring, Leibniz Universität Hannover, Germany; Sandra Nitz, Universität Koblenz-Landau, Campus Landau, Germany; Vanessa Schad, University of Koblenz-Landau, Germany; Robin Schilidknecht, University of Koblenz-Landau, Germany

**What Little Red Riding can teach us about reading science**
Monica Gonzalez Marquez, RWTH Aachen University, Germany; Andrea Philipp, RWTH Aachen University, Germany
## ROUNDTABLE: EXPERIMENTAL STUDIES AND COMPREHENSION OF TEXT AND GRAPHICS

**Chair**
Michael Goller, University of Bamberg, Germany

**Oral Language Intervention in Schools Serving Language-Minority Learners: A Randomized Trial**
Mia Cecilie Heller, University of Oslo, Norway; Arne Lervåg, Department of Education, Norway; Vibeke Graver, University of Oslo, Norway

**How do seductive details affect mathematical modelling performance?**
Claudia Leopold, University of Fribourg, Switzerland; Anja Hugo, Center for Teacher Education, Switzerland; Stanislaw Schukajlow, University of Münster, Germany

**Is Video the new Text when Searching the Web for Learning Purposes?**
Georg Pardi, Leibniz-Institut für Wissensmedien, Germany; Yvonne Kammerer, Knowledge Media Research Center, Germany; Peter Gerjets, Leibniz-Institut für Wissensmedien (IWM), Germany

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## ROUNDTABLE: HIGHER AND DOCTORAL EDUCATION

**Chair**
Vanessa Russo, University Institute of Lisbon (ISCTE - IUL), Portugal

**Interventions to increase completion rates in higher (online) education**
Laurie Delnoij, Open University, Netherlands; Kim Dirix, Open University, Netherlands; Jose Janssen, Open University of the Netherlands, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands

**Exploring the end stage in doctoral examination: Process, response and outcome**
Allyson Holbrook, The University of Newcastle, Australia; Kerry Dally, SORTI, The University of Newcastle, Australia; Terence Lovat, University of Newcastle, Australia; Janene Budd, University of Newcastle, Australia

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## ROUNDTABLE: QUALITATIVE METHODS AND STUDENT LEARNING

**Chair**
Erica de Vries, Université Grenoble Alpes, France

**Leadership as facilitator to implement inclusive education: Qualitative Comparative Analysis**
Aster Van Mieghem, University of Antwerp, Belgium; Karine Verschueren, KU Leuven, Belgium; Elke Struyf, University of Antwerp, Belgium

**What is this thing called philosophy of educational science? A qualitative content analysis.**
Leif Christian Lahn, University of Oslo, Norway

**Learning Patterns and Social-Emotional Learning of Balkan Students in Secondary Education**
Shqiponjë Ahmed, Autonomous University of Barcelona, Spain; Jose Reinaldo Martinez-Fernandez, Universitat Autònoma de Barcelona, Spain

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## ROUNDTABLE: PRE-SERVICE TEACHER EDUCATION

**Chair**
Detlef Uhrhane, University of Passau, Germany

**The ability for transfer of knowledge of content and students**
Miriam Hahn, University of Education Freiburg, Germany; Katrin Lohrmann, PH Freiburg, Germany; Franziska Birke, Institute for vocational training and economic education, Germany

**What is (needed to achieve) ‘evidence-based teaching’?**
Friederike Hendriks, University of Münster, Germany; Jana Groß Ophoff, Tübingen School of Education, Germany; Eva Seltfried, Heidelberg University, Germany; Katharina Kiemer, Universität Augsburg, Germany; Cordelia Menz, Heidelberg University, Germany

**Fostering pre-service economics teachers’ reflection on their attitudes towards the discipline**
Tobias Jenert, Paderborn University, Germany; Taiga Brahm, University of Tübingen, Germany
WEDNESDAY
14 AUGUST 2019
### Session I: 1

**Time:** 08:30-10:00  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

**SIG INVITED SYMPOSIUM: SIG 24: NEGOTIATING TOWARDS SUCCESS: A DEVELOPMENTAL PERSPECTIVE ON RESEARCH WRITING ‘KNOW-HOW’**

| Chair                  | Managing criticism: Making the most of critical feedback  
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<tbody>
<tr>
<td>Lynn McAlpine, University of Oxford / McGill University, Canada</td>
<td>Kelsey Inouye, University of Oxford, United Kingdom</td>
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| Discussant             | Success? Getting a grant but also a tenure-track job  
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<td>Montserrat Castañó, Ramon Llull University, Spain</td>
<td>Lynn McAlpine, University of Oxford / McGill University, Canada</td>
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</table>

| Discussant             | Failure as feedback: building towards grant funding success  
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<td>Larissa Yousofova, McGill University, Canada</td>
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| Discussant             | The development of the adaptive STEM writer  
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<td>Lynn McAlpine, University of Oxford / McGill University, Canada</td>
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### Session I: 2

**Time:** 08:30-10:00  
**Location:** Lecture Hall - H11

**INVITED SESSION: EFG: PORTABLE BRAIN TECHNOLOGIES IN RESEARCH ON LEARNING AND INSTRUCTION**

| Chair                        | Brain-to-Brain Synchrony in the Classroom  
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<tbody>
<tr>
<td>Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands</td>
<td>Ido Davideuco, New York University, United States</td>
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| Organisers                  | Measuring Attentional Brain Processes in the Classroom  
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<tbody>
<tr>
<td>Ido Davideuco, New York University, United States; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands</td>
<td>Jennie Grammer, UCLA, United States</td>
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| Discussant                  | Can an experience of brain control with EEG neurofeedback help to develop growth mindsets?  
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<tbody>
<tr>
<td>Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands</td>
<td>Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands</td>
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</table>

| Discussant                  | Studying cognitive processes beyond the lab using wireless electroencephalography  
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<td>Martin Bleicher, University of Oldenburg, Germany</td>
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### Session I: 3

**Time:** 08:30-10:00  
**Location:** Lecture Hall - H07

**SYMPOSIUM: CONCEPTUALIZING AND RESEARCHING TIME IN LEARNING AND EDUCATION**

| Chair                     | The role of technology in education understood as a journey into time  
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<tr>
<td>Giuseppe Ritella, University of Helsinki, Finland</td>
<td>Rupert Wegerif, University of Cambridge, United Kingdom</td>
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| Organisers                | Creating learning opportunities and identities through multiple time-spaces in class conversations  
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<tr>
<td>Giuseppe Ritella, University of Helsinki, Finland; Antti Rajala, University of Helsinki, Finland; Rupert Wegerif, University of Cambridge, United Kingdom</td>
<td>Kenneth Silseth, University of Oslo, Norway; Hans Christian Amseth, University of Oslo, Norway</td>
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| Discussant                | Teachers’ agentic orientations to educational continuity and change: A temporal framework  
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<tr>
<td>Peter David Renshaw, The University of Queensland, Australia</td>
<td>Antti Rajala, University of Helsinki, Finland; Kristina Kumpulainen, University of Helsinki, Finland; Aru Kajamaa, University of Helsinki, Finland</td>
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| Discussant                | Examining the sequential organization of knowledge creation: a diachronic analysis  
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<tr>
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<td>Giuseppe Ritella, University of Helsinki, Finland</td>
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WEDNESDAY, 14 AUGUST 2019
SYMPOSIUM: UNDERSTANDING THE COMPLEXITIES OF SELF-REGULATED LEARNING USING MULTIMODAL DATA STREAMS

**Chairs**
Roger Azvedo, University of Central Florida, United States; Maria Bannert, Technical University of Munich (TUM), Germany

**Discussant**
Dragan Gasevic, Monash University, Australia

- **Studying Self-Regulatory Processes using Multimodal Trace Data during Human-Machine Interactions**
  Roger Azvedo, University of Central Florida, United States; Michelle Taub, University of Central Florida, United States; Elizabeth Cloude, University of Central Florida, United States; Megan Price, University of Central Florida, United States

- **Temporal process analysis to better understand different prompt utilization**
  Katharina Engelmann, Technical University of Munich (TUM), Germany; Maria Bannert, Technical University of Munich (TUM), Germany

- **What can Multimodal Data tell about Monitoring and Task Difficulty during a Collaborative Exam?**
  Jonna Malmberg, University of Oulu, Finland; Eetu Haataja, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Tapio Seppälä, University of Oulu, Finland

- **How social challenges influence dyads' socially-shared regulation of learning in hypermedia**
  Erdem Oner, University of Oulu, Finland; Cindy Paans, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Eliane Segers, Radboud University Nijmegen / University of Twente, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands

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SYMPOSIUM: THE IMPORTANCE OF LINGUISTIC AND COGNITIVE INFORMATION-PROCESSING SKILLS FOR MATHEMATICAL LEARNING

**Chair**
Nurt Viesel-Nordmeyer, Technische Universität Dortmund, Germany

**Organiser**
Nurt Viesel-Nordmeyer, Technische Universität Dortmund, Germany

**Discussant**
Evelyn Kroesbergen, Radboud University, Netherlands

- **The role of language and working memory in children’s mathematics skills**
  Andrea Diaz Barriga Yanes, The University of Sheffield, Mexico; Daniel J Carroll, University of Sheffield, United Kingdom; Danielle Matthews, University of Sheffield, United Kingdom

- **The role of language and working memory for mathematical development in children between age 4 to 10**
  Nurt Viesel-Nordmeyer, Technische Universität Dortmund, Germany; Ute Ritterfeld, Technische Universität Dortmund (TU), Germany; Carina Lüke, Pädagogische Hochschule Heidelberg, Germany; Wilfried Bos, Technische Universität Dortmund, Germany

- **The effect of language on rational number comparison**
  Iro Xenidou-Dervou, Loughborough University, United Kingdom; Camilla Gilmore, Loughborough University, United Kingdom; Elizabeth May Jones, Loughborough University, United Kingdom

- **Academic and Brain Functional Connectivity Effects After Training Schoolchildren in Working Memory**
  Noelia Sanchez-Perez, University of Zaragoza, Spain; Alberto Ingrigi, Istituto Italiano di Tecnologia, Robotics Brain and Cognitive Sciences Unit, Center for Human Technologies, Italy; Alejandro Castilo, Department of Basic Psychology and Methodology, Faculty of Psychology, University of Murcia, Spain; Guillermo Campoy, Department of Basic Psychology and Methodology, Faculty of Psychology, University of Murcia, Spain; Carmen Gonzalez-Salinas, Department of Developmental Psychology and Education, Faculty of Psychology, University of Murcia, Spain; Luis J. Fuentes, Department of Basic Psychology and Methodology, Faculty of Psychology, University of Murcia, Spain

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SYMPOSIUM: TEACHERS’ ATTEMPTS TO INSTRUCT METACOGNITIVE AND SELF-REGULATED LEARNING

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

**Discussant**
Nancy Perry, University of British Columbia, Canada

- **Teacher-student metacognitive discourse and outcomes: Evidence from a video-based training study**
  Bracha Kramarski, Bar-Ilan University, Israel; Anat Shilo, Bar-Ilan University, Israel

- **Fostering transfer of metacognitive learning strategies by direct and indirect training**
  Corrina Schuster, Ruhr University Bochum, Germany; Ferdinand Stebner, Ruhr-University Bochum, Germany; Malte Jansen, Humboldt University Berlin, Germany; Joachim Wirth, Ruhr-University Bochum, Germany; Detlev Leutner, University of Duisburg-Essen, Germany

- **Relations between teachers’ instructions and children’s monitoring and regulation of learning**
  Mariette van Loon, University of Bern, Switzerland; Natalie Bayard-Guggisberg, University of Bern, Switzerland; Martina Steiner, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

- **Do teachers adapt their promotion of SRL to their class? Development of a vignette test**
  Charlotte Dignath, Goethe-University Frankfurt, Germany; Zemira Mavresch, Bar-Ilan University, Israel
## SYMPOSIUM: STRATEGY FLEXIBILITY AND ADAPTIVITY IN PRIMARY SCHOOL ARITHMETIC: STUDENT AND INSTRUCTIONAL FACTORS

### Chair
Joke Torbeyns, KU Leuven, Belgium

### Discussant
Marian Hickendorff, Leiden University, Netherlands

**10-12-year-olds’ flexible use of subtraction by addition in the number domain up to 1000**
Joke Torbeyns, KU Leuven, Belgium; Gwen Verguts, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

**Effects of Textbooks on Primary School Children’s Adaptive Use of Strategies in Arithmetic**
Ase Heine, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Henning Sievert, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Ann-Katrin van den Ham, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Inga Niedermeyer, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Distinguishing adaptivity in rational number knowledge**
Jake McMullen, University of Turku, Finland; Enro Lehtinen, University of Turku, Finland; Minna M Hannula-Sormunen, University of Turku, Finland; Robert Siegler, Carnegie Mellon University, United States

**Profiles of fourth and fifth graders’ understanding and making use of multiplicative relations**
Andreas Schulz, Zurich University of Teacher Education, Switzerland

## ICT DEMONSTRATION: TOOLBOXTEACHEREDUCATION - TEACHING AND LEARNING IN THE DIGITAL AGE

### Chair
Jaakko Hippiö, University of Helsinki, Finland

**ToolboxTeacherEducation - Teaching and Learning in the Digital Age**
Dagmar Frick, Technical University of Munich, Germany; Jana-Kristin von Waechter, Technische Universität München (TUM), Germany; Doris Lawalter, Technical University of Munich (TUM), Germany; Julia Bernhard, Technische Universität München (TUM), Germany; Bernhard Werner, Technische Universität München (TUM), Germany; Kerstin Huber, Technischen Universität München (TUM), Germany; Jürgen Richter-Gebert, Technical University of Munich, Germany; Silke Schiltlauer, Technische Universität München (TUM), Germany

## ICT DEMONSTRATION: METAPHILIO: A MOBILE APP FOR COLLABORATIVE NOTE TAKING AND REFLECTION IN TEACHER EDUCATION

### Chair
Jeannine Turner, Florida State University, United States

**Metaphilio: A Mobile App for Collaborative Note Taking and Reflection in Teacher Education**
Dominik Petko, University of Zurich, Switzerland; Regina Schmid, Schwyz University of Teacher Education, Switzerland; Laura Müller, Schwyz University of Teacher Education, Switzerland; Michael Helscher, Pädagogische Hochschule Schwyz, Switzerland

## ICT DEMONSTRATION: DEVELOPMENT AND EVALUATION OF A HISTOLOGICAL E-LEARNING SOFTWARE FOR MEDICAL STUDENTS

### Chair
Sabrina Bonanati, Paderborn University, Germany

**Development and evaluation of a histological e-learning software for medical students**
Christina Drees, Goethe-University Frankfurt, Germany; Estifanos Ghebremedhin, Goethe-University Frankfurt, Institute of Anatomy 1, Germany; Fanid Ayoub, independent, Germany; Miriam Hansen, Goethe-Universität Frankfurt, Germany

## ICT DEMONSTRATION: THE PLAK-IN: A FLEXIBLE TOOL FOR DIGITAL TEACHER EDUCATION AND QUANTITATIVE RESEARCH

### Chair
Philipp Holden, RWTH Aachen University, Germany

**The PLAK-In: A flexible tool for digital teacher education and quantitative research**
Sandra Dietrich, University of Leipzig, Germany; Andreas Jansco, University of Vienna, Austria; Christopher Helm, University of Vienna, Austria; Patrick Poczur, University of Vienna, Austria; Anna Förster, University of Leipzig, Germany; Kristin Stein, Technical University of Dresden, Germany; Dorothee Salomo, University of Leipzig, Germany
<table>
<thead>
<tr>
<th>Session I: 12</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S07</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: THE POTENTIAL OF INTEGRATED READING AND WRITING LESSONS: FINDINGS FROM RESTLESS</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Laura Kerstl, University of Cambridge, United Kingdom</td>
<td>The potential of integrated reading and writing lessons: findings from RESTLESS</td>
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<td>Johannes Wild, Universität Regensburg, Germany; Anita Schürch, University of Regensburg, Germany; Christina Knott, University of Regensburg, Germany</td>
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<th>Session I: 13</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S02</th>
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<tr>
<td><strong>ICT DEMONSTRATION: TEACHING AND TESTING WITH DATA GRAPHS USING R-SHINY</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Peter Edelsbrunner, ETH Zurich, Switzerland</td>
<td>Teaching and testing with data graphs using R-Shiny</td>
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<td>Fang Zhao, University of Hagen, Unknown; Robert Gaschler, FernUniversität in Hagen, Germany; Veit Kubik, Martin-Luther-Universität Halle-Wittenberg, Germany</td>
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<th>Session I: 14</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S15</th>
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<tr>
<td><strong>ICT DEMONSTRATION: ONE BY ONE: TWO SHINY WEB APPLICATIONS FOR THE DESIGN AND ANALYSIS OF SINGLE-CASE EXPERIMENTS</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Stefan Markus, University of Wuppertal, Germany</td>
<td>One by One: Two Shiny Web Applications for the Design and Analysis of Single-Case Experiments</td>
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<td>Lies Deelder, KU Leuven, Belgium; Tamal Kumar De, KU Leuven, Belgium; Wim Van den Noortgate, KU LEUVEN, Belgium; Patrick Onghena, KU Leuven, Belgium</td>
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**ANNOTATIONS:**
PARTICIPANTS ARE REQUESTED TO BRING THEIR OWN LAPTOP WHEN ATTENDING THIS SESSION.

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<th>Session I: 15</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S14</th>
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<tr>
<td><strong>ICT DEMONSTRATION: MINDSTEPS: AN ADAPTIVE COMPUTER-BASED TOOL FOR FORMATIVE STUDENT ASSESSMENT</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Marwin Felix Löper, Paderborn University, Germany</td>
<td>MINDSTEPS: An Adaptive Computer-Based Tool for Formative Student Assessment</td>
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<td>Nina König, University of Zurich, Switzerland; Martin J. Tomasik, University of Zurich, Switzerland; Stéphanie Berger, University of Zurich, Switzerland; Lukas Giesinger, University of Zurich, Switzerland; Laura A. Heblinger, University of Zurich, Switzerland; Urs Moser, University of Zurich, Switzerland</td>
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<th>Session I: 16</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S13</th>
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<tr>
<td><strong>ICT DEMONSTRATION: COHVIZ-E: A TOOL TO PROVIDE NOVICE WRITERS WITH INSTRUCTIONAL FEEDBACK ON THE COHESION OF THEIR TEXT</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Cyril Brom, Charles University, Czech Republic</td>
<td>CohViz-E: A tool to provide novice writers with instructional feedback on the cohesion of their text</td>
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<td></td>
<td>Christian Burkhart, University of Freiburg, Germany; Andreas Lachner, University of Tübingen, Germany; Matthias Nückles, University of Freiburg, Germany</td>
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**ANNOTATIONS:**
PARTICIPANTS ARE REQUESTED TO BRING THEIR OWN LAPTOP WHEN ATTENDING THIS SESSION WITH THE LATEST VERSION OF GOOGLE CHROME INSTALLED.

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<thead>
<tr>
<th>Session I: 17</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S06</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: ENRICHMENT OF EXECUTIVE FUNCTIONS FOR SMALL CHILDREN WITH SIETTE IN TECHCAT PROJECT</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Andrea Ximena Castano, National University of Education, Ecuador</td>
<td>Enrichment of executive functions for small children with SIETTE in TECHCAT project</td>
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<td>Magros Fernandez Molina, University of Malaga, Spain; Monica Trelles, ETSInformatica, Spain; Ricardo Conejo, ETSInformatica, Spain; Beatriz Barno, ETSInformatica, Spain</td>
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<tr>
<td>Session I: 18</td>
<td>Time: 08:30-10:00</td>
<td>Location: Seminar Room - S09</td>
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<tr>
<td><strong>ICT DEMONSTRATION: AUGMENTATION OF PRACTICE WITH EXPERT PERFORMANCE DATA: PRESENTING A CALLIGRAPHY USE CASE</strong></td>
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<tr>
<td><strong>Chair</strong> Liv Ingrid Askie Håberg, Volda University College, Norway</td>
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<tr>
<td>Augmentation of practice with expert performance data: Presenting a calligraphy use case</td>
<td>Błez Limbu, Open University of the Netherlands, Netherlands; Roland Klemke, Open University of the Netherlands, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Marcus Specht, Open University of the Netherlands, Netherlands</td>
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<tr>
<th>Session I: 19</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S10</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: COMPUTER-BASED SCIENCE ASSESSMENTS FOR CROSSCUTTING CONCEPTS</strong></td>
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<tr>
<td><strong>Chair</strong> Tine Nielsen, University of Copenhagen, Denmark</td>
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<tr>
<td>Computer-Based Science Assessments for Crosscutting Concepts</td>
<td>Abeera Rahmat, Indiana University-Bloomington, United States; Amalika Salah, Indiana University-Bloomington, United States; Lei Liu, Educational Testing Service, United States; Cindy Hmel-Silver, Indiana University, United States; Gary Weiser, Columbia University; Teachers College, United States; Karyn Housh, Indiana University-Bloomington, United States; Dante Cisterna-Alburquerque, Educational Testing Service, United States</td>
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<tr>
<th>Session I: 20</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S03</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: LEARNING ABOUT AND WITH A SOCIAL ROBOT: INMOOV OPEN-ACCESS ROBOT AS A LEARNING PLATFORM</strong></td>
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<tr>
<td><strong>Chair</strong> Eva Lindgren, Umeå University, Sweden</td>
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<tr>
<td>Learning about and with a social robot: InMoov open-access robot as a learning platform</td>
<td>Cäuj Nicaș Sandström, University of Helsinki, Finland; Olli Ohha, Finland; Anna Nevgi, University of Helsinki, Finland; Kaisu Mäkilä, University of Tampere, Finland</td>
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**Annotations:**
THIS WORKSHOP HAS BEEN CANCELLED.

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<tr>
<th>Session I: 21</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S05</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: FACILITATING STUDENT PEER REVIEW USING SCREENCAST TECHNOLOGY</strong></td>
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<tr>
<td><strong>Chair</strong> Courtney Pollack, Massachusetts Institute of Technology, United States</td>
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<tr>
<td>Facilitating Student Peer Review Using Screencast Technology</td>
<td>Christopher Anson, North Carolina State University, United States</td>
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**Annotations:**
PARTICIPANTS ARE REQUESTED TO BRING THEIR OWN LAPTOP WHEN ATTENDING THIS SESSION AND FOLLOW THE 2 STEPS BELOW:
1. BEFORE THE SESSION, PLEASE REGISTER FOR VOICE THREAD AT VOICE THREAD.COM THIS ONLY REQUIRES A USERNAME AND PASSWORD—NO DOWNLOAD. PLEASE BRING THE USERNAME AND PASSWORD (OR COMMIT THEM TO MEMORY).
2. PLEASE HAVE ACCESS TO YOUR COMPUTER TO A DOCUMENT WRITTEN BY A STUDENT

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<tr>
<th>Session J: 1</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S06</th>
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<tbody>
<tr>
<td><strong>SIG INVITED SYMPOSIUM: SIG 13: INTERVENTION STUDIES IN CIVIC EDUCATION BASED ON THE VAKE-APPROACH</strong></td>
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<tr>
<td><strong>Chair</strong> Eveline Gutzwiler-Helfenfinger, University of Fribourg, Switzerland</td>
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<tr>
<td>Promoting Integration of Female Muslim Refugees through VaKE in Civic Education</td>
<td>Jean-Luc Patry, University of Salzburg, Austria; Natascha Diekmann, University of Salzburg, Austria; Sieglinde Weyringer, University of Salzburg, Austria; Alfred Weinberger, Pädagogische Hochschule der Diözese Linz, Austria</td>
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<tr>
<td>Organiser Alfred Weinberger, Pädagogische Hochschule der Diözese Linz, Austria</td>
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<tr>
<td>Exploring civic educational practices through the VaKE-method at the CASNAV center in France</td>
<td>Frederique Brossard Berhaug, NLA University College, Norway; Marco Brighenti, CASNAV Esconne, France; Ingvil Brögger Budal, NLA University College, Norway</td>
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<tr>
<td>Discussant Hermann J. Abs, University of Duisburg-Essen, Germany</td>
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<tr>
<td>Critical Thinking in Civic Education: An intervention with VaKE in Higher Education</td>
<td>Dimitris Pnevmatikos, University of Western Macedonia, Greece; Panagiota Christodoulou, University of Western Macedonia, Greece; Triantafyllia Georgiadou, University of Western Macedonia, Greece</td>
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<tr>
<td>The use of moral dilemmas in order to promote civic responsibility in teacher education</td>
<td>Roxana Reichman, Gordon Academic College, Israel</td>
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</tbody>
</table>
**Session J: 2**

**Time:** 10:15-11:45  
**Location:** Seminar Room - S04

**SYMPOSIUM: BELIEFS ABOUT EDUCATIONAL PSYCHOLOGY: STATUS QUO AND PREVENTING MISCONCEPTIONS AND SCIENCE DENIAL**

| Chair          | Change of knowledge and epistemological beliefs about educational psychology in preservice teachers  
<table>
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<tbody>
<tr>
<td>Eva Seifried, Heidelberg University, Germany</td>
<td>Joerg Zumbach, University of Salzburg, Austria; Ines Deibi, University of Salzburg, Austria; Viola Maria Geiger, Universität Salzburg, Austria; Daniela Martinek, University of Salzburg, Austria</td>
</tr>
</tbody>
</table>
| Discussant    | Measuring misconceptions in (teacher) education: The Questionable Beliefs in Education Scale  
| Tobias Richter, University of Würzburg, Germany | Jana Asberger, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany |  
|               | Prevalence and reduction of educational psychological misconceptions among preservice teachers  
|               | Cordelia Menz, Heidelberg University, Germany; Birgit Spinath, Heidelberg University, Germany; Eva Seifried, Heidelberg University, Germany |  
|               | Fostering resilience against science denial: Inoculation against incoherence  
|               | Eva Seifried, Heidelberg University, Germany; Stephan Lewandowsky, University of Bristol, United Kingdom |  

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**Session J: 3**

**Time:** 10:15-11:45  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

**SYMPOSIUM: SUPPORTING SPONTANEOUS MATHEMATICAL ACTIVITIES: CONTEXT AND INTERVENTIONS**

| Chair          | Increasing Math Talk During Play in a Children’s Museum: The Role of Parent and Child Factors  
<table>
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<tbody>
<tr>
<td>Minna M Hannula-Somunen, University of Turku, Finland</td>
<td>Melissa Libersat, University of Pittsburgh, United States; Emily Graham, University of Pittsburgh, United States; Koleen McDrisk, Columbia University, United States</td>
</tr>
</tbody>
</table>
| Organisers     | Understanding mathematical reasoning at preschool level through epistemological moves  
| Jake McMullen, University of Turku, Finland; Minna M Hannula-Somunen, University of Turku, Finland | Tomi Kärki, University of Turku, Finland; Lovisa Sumpter, Stockholm University, Sweden; Maria Hedefalk, Uppsala University, Sweden |  
| Discussant    | Enhancing students’ spontaneous focusing on multiplicative relations  
| Markku Hannula, University of Helsinki, Finland | Saku Määtä, University of Turku, Finland; Minna M Hannula-Somunen, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland; Jake McMullen, University of Turku, Finland |  
|               | Stimulation of SFON and cardinality and counting skills at day care  
|               | Minna M Hannula-Somunen, University of Turku, Finland; Cristina Nanu, University of Turku, Finland; Milja Heinonen, University of Turku, Finland; Anne Sonarutto, University of Turku, Finland; Ilona Södervik, University of Helsinki, Finland; Aino Mattinen, University of Turku, Finland |  

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**Session J: 4**

**Time:** 10:15-11:45  
**Location:** Lecture Hall - H08

**SYMPOSIUM: HOMEWORK: THE ROLES OF STUDENTS, PARENTS, AND TEACHERS ON ITS EFFECTIVENESS**

| Chair          | Homework Time and Homework Time Management Relationship: A Person-Centered Approach  
<table>
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<tbody>
<tr>
<td>Eriko Ota, University of Tokyo, Japan</td>
<td>Trinidad Garcia, University of Oviedo, Spain; José Carlos Núñez, University of Oviedo, Spain; Pedro Rosario, University of Minho, Portugal; Natalia Suárez Fernández, University of Oviedo, Spain; Carmen Díez, University of Oviedo, Spain</td>
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</tbody>
</table>
| Discussant    | Homework: Variables Predicting Academic Achievement in Secondary Students  
| Hanna Dumont, DIPF | Bibiana Regueiro, University of A Coruña, Spain; Antonio Valle, Universidad de La Coruña, Spain; Susana Rodríguez, Universidad de La Coruña, Spain; Isabel Piñeiro, Universidad de La Coruña, Spain; Iris Estévez, Universidad de La Coruña, Spain |  
|               | Math Homework in Middle School: Parental Help and Children’s Academic Outcomes  
|               | Eve Kikas, Tallinn University, Estonia; Gintautas Sitinskas, University of Jyväskylä, Finland |  
|               | Promoting Elementary School Students’ Self-Regulated Learning through Homework  
|               | Eriko Ota, University of Tokyo, Japan; Tetsumi Hamamoto, Public Elementary School, Japan |  

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### Session J: 5

**SYNOPSIS: FAMILY-SCHOOL PARTNERSHIPS: THE CONDITIONS AND BENEFITS FOR THE TEACHERS, STUDENTS AND PARENTS**

| Chair          | Sittipan Yotyodying, FernUniversität in Hagen, Germany |
| Organisers     | Sittipan Yotyodying, FernUniversität in Hagen, Germany; Charlott Rubach, University of Potsdam, Germany |
| Discussant     | Markus P. Neuanschneider, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland |

#### Teachers’ prosocialness and well-being: Mediated by teacher engagement in family-school partnerships

- Sittipan Yotyodying, FernUniversität in Hagen, Germany
- Swantje Detmers, FernUniversität in Hagen, Germany
- Kathrin Jonkann, FernUniversität in Hagen, Germany

#### Interplay among family-school partnerships, support from parents and teachers and student motivation

- Denise Köchli, Schulpädagogik Universität Potsdam, Germany
- Charlott Rubach, University of Potsdam, Germany
- Rebecca Lazarides, University of Potsdam, Germany

#### Real and ideal teacher-family partnership practices in childcare

- Vera Coelho, Porto University, FPCE, Portugal
- Silvia de Barros, Politécnico do Porto, Portugal
- Joana Cadima, University of Porto, Portugal
- Manuela Pessanha, Polytechnic Institute of Porto, Portugal
- Carla Peixoto, Polytechnic Institute of Porto, Portugal
- Ana Isabel Mota e Costa Pinto, University of Porto - Portugal

#### Do family-school partnerships contribute to student outcomes? Mediated by homework involvement

- Swantje Detmers, FernUniversität in Hagen, Germany
- Sittipan Yotyodying, FernUniversität in Hagen, Germany
- Kathrin Jonkann, FernUniversität in Hagen, Germany

### Session J: 6

**SYNOPSIS: THE ROLE OF HAPTIC INFORMATION IN MULTIMODAL LEARNING ENVIRONMENTS**

| Chairs          | Jennifer Mueller, Leibniz-Institut für Wissensmedien, Germany; Magdalena Novak, Leibniz-Institut für Wissensmedien, Germany |
| Organisers      | Jennifer Mueller, Leibniz-Institut für Wissensmedien, Germany; Magdalena Novak, Leibniz-Institut für Wissensmedien, Germany |
| Discussant      | Paul Girms, The University of Sydney, Australia |

#### Teaching Musical Concepts With Tangibles Can Improve Fraction Understanding in Fourth Graders

- Jennifer Mueller, Leibniz-Institut für Wissensmedien, Germany
- Uwe Oestermeier, Leibniz-Institut für Wissensmedien (IWM), Germany
- Jessika Golle, University of Tuebingen, Germany
- Ulrich Trautwein, University of Tuebingen, Germany
- Peter Gerjets, Leibniz-Institut für Wissensmedien (IWM), Germany

#### The Impact of the Presence/Absence of Haptic Feedback on Kindergarten Students’ Science Learning

- Tacos Hovardas, University of Cyprus, Cyprus
- Marios Pappasvridis, University of Cyprus, Cyprus
- Zacharias Zacharia, University of Cyprus, Cyprus
- Efthelia Panteli, University of Cyprus, Cyprus
- Yiorgos Pavlou, University of Cyprus, Cyprus

#### Multisensory Technologies for Embodied and Enactive Learning

- Guillaume Volpe, University of Genova, Italy
- Erica Voita, University of Genova (Italy), Italy
- Monica Gori, Italian Institute of Technology, Italy

#### The Influence of Haptic Exploration of Objects on Knowledge Acquisition, Emotion, and Motivation

- Magdalena Novak, Leibniz-Institut für Wissensmedien, Germany
- Stephan Schwan, Leibniz-Institut für Wissensmedien, Germany

### Session J: 7

**SYNOPSIS: A SITUATED PERSPECTIVE ON TEACHERS’ MATH PROFESSIONAL KNOWLEDGE: ASSESSMENT, DEVELOPMENT, AND IMPACT**

| Chair          | Fien Depaepe, KU Leuven, Belgium |
| Discussant     | Marjoelijn Dobber, Vrije Universiteit Amsterdam, Netherlands |

#### Mathematical pedagogical content knowledge of kindergarten teachers – How to measure it?

- Jula Brunz, University of Paderborn, Germany
- Hedwig Gasteiger, Osnabrück University, Germany
- Christiane Benz, Pädagogische Hochschule Karlsruhe, Germany
- Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland
- Priska Sprenger, Pädagogische Hochschule Karlsruhe, Germany

#### Characterizing preserve kindergarten teachers’ math PCK using a scenario-based questionnaire

- Joke Torbay, KU Leuven, Belgium
- Sandy Verbruggen, KU Leuven, Belgium
- Fien Depaepe, KU Leuven, Belgium

#### Fostering teachers’ competencies for math reasoning in early mathematics education

- Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland
- Jonas Lampart, Pädagogische Hochschule Thurgau, Switzerland

#### Classification of mathematical tasks to study subject-specific aspects of instructional quality

- Natalie Ross, University of Hamburg, Germany
- Gabriele Kaiser, University of Hamburg, Germany
- Johannes König, University of Cologne, Germany
- Sigrid Blömeke, University of Oslo, Norway
### SYMPOSIUM: ERROR FRIENDLY LEARNING CONTEXTS: MAKING IT SAFER TO MAKE MISTAKES

**Chairs**
Elizabeth R Peterson, University of Auckland, New Zealand; Maria Tulis, University of Salzburg, Austria

**Organisers**
Elizabeth R Peterson, University of Auckland, New Zealand; Maria Tulis, University of Salzburg, Austria; Gabriele Steuer, University of Bielefeld, Germany

**Discussant**
Dragan Tmic, ETH Zurich, Switzerland

**Session J: 8**  
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H05

- How to increase the “failure friendliness” of maker activities  
  - Adam Matelles, Indiana University, United States; Amber Simpson, SUNY Binghamton, United States; Alice Anderson, Minneapolis Institute of Art, United States; Eui Suk Sung, Indiana University, United States

- Preparing students for high consequence failures, safely: A case study with zombies  
  - Jill MacKay, University of Edinburgh, United Kingdom; Alex Corbeyshy, The Roslin Institute, United Kingdom; Hamish Macleod, University of Edinburgh, United Kingdom; Kate Stein, The University of Edinburgh, United Kingdom; Jessie Patersen, University of Edinburgh, United Kingdom; Susan Rhind, University of Edinburgh, United Kingdom

- Assessing the error climate in three different school subjects  
  - Gabriele Steuer, University of Bielefeld, Germany; Maria Tulis, University of Salzburg, Austria; Markus Dresel, University of Augsburg, Germany

- Translation, adaptation and validation of the perceived error climate questionnaire into Italian  
  - Maria Cristina Matteucci, University of Bologna, Italy; Annalisa Soncini, University of Bologna, Italy

### SYMPOSIUM: PHYSICAL ACTIVITY AND LEARNING EXPERIENCES

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

**Discussant**
Claudia Roebers, University of Bern, Switzerland

**Session J: 9**  
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H10

- A cluster RCT examining effects of aerobic and cognitive physical activity on academic performance  
  - Anne de Bruin, University of Groningen, Netherlands; Danny Kostons, University of Groningen, Netherlands; Irene van der Fels, University Medical Centre Groningen, University of Groningen, Netherlands; Jaap Oosterlaan, Vrije Universiteit Amsterdam, Netherlands; Chris Visscher, University Medical Centre Groningen, University of Groningen, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands; Roel J. Bosker, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands

- The mediating role of self-concept between physical activity and mathematical achievement  
  - Laura Claude Dapp, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

- The Impact of Physical Education Lesson Intensity and Complexity on Subsequent Learning Behaviour  
  - Christina Heemskerk, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom; Steve Strand, University of Oxford, United Kingdom

- Physical activity of Young People with Cerebral Palsy  
  - Shelly Coe, Oxford Brookes University, United Kingdom; J Collett, Oxford Brookes University, United Kingdom; Y Ng, Oxford Brookes University, United Kingdom; Foeni Mavrommatis, Oxford Brookes University, United Kingdom; Patrick Easer, Oxford Brookes University, United Kingdom; Tim Theologis, Nuffield Orthopaedic Centre, United Kingdom; Julia Hyde, Oxford Health NHS Trust, United Kingdom; S Radley, Oxford Brookes University, United Kingdom; R Habertalla, Oxford Brookes University, United Kingdom; W Wade, Ace Centre, Manchester, United Kingdom; D Pindus, Northeastern University, United Kingdom; helen dawes, Oxford Brookes University, United Kingdom

### SYMPOSIUM: EMOTIONAL-MOTIVATIONAL FACTORS OF STEM LEARNING GAMES

**Chair**
Steve Niebel, Chemnitz University of Technology, Germany

**Organisers**
Cyril Brom, Charles University, Czech Republic; Michael Körkele-Rust, University of Teacher Education, Switzerland

**Discussant**
Alexander Renki, University of Freiburg, Germany

**Session J: 10**  
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H11

- Emotional arousal in game-based learning  
  - Manuel Ninas, Leibniz-Institut für Wissensmedien, Germany; Simon Greipl, Leibniz-Institut für Wissensmedien, Germany; Kristian Kiil, Tampere University, Finland; Antero Lindstedt, Tampere University of Technology, Finland; Elise Klein, Leibniz-Institut für Wissensmedien, Germany; Hans-Otto Karnath, University of Tübingen, Germany; Korbinian Moeller, Leibniz-Institut für Wissensmedien, Germany

- Decorative animations in a learning game for grade 3-4 children: An eye-tracker study  
  - Onofri Javora, Charles University, Czech Republic; Teresa Hannemann, Charles University, Czech Republic; Tereza Starkova, Charles University, Czech Republic; Filip Diehltenko, Czech Academy of Sciences, Czech Republic; Cyril Brom, Charles University, Prague

- Play to grow: About feedback and persistence in game-based learning for mathematics  
  - Judith ter Vrugt, University of Twente, Netherlands; Anita Luttikholt, University of Twente, Netherlands

- Game-based and playful learning pedagogy in basic education  
  - Marjaara Kangas, University of Lapland, Finland; Heikki Raukamo, University of Lapland, Finland
### Session J:11  |  Time: 10:15-11:45  |  Location: Seminar Room - S13

**POSTER PRESENTATION: HIGHER EDUCATION**

**Chair**  
Tarja-Riitta Hurma, University of Turku, Finland

**University lecturers' emotions: experience and display of enjoyment, anxiety and anger in class.**  
Katharina Thies, Ostwestfalen-Lippe University of Applied Sciences, Germany; Robert Kordts-Freudinger, University of St. Gallen, Switzerland

**Professional Fragmentation of Novice Academic Identity in the Current HE Conditions**  
Jiří Kropáč, Palacký University - Faculty of Education, Czech Republic; Stefan Chudy, Palacky University, Czech Republic; Iva Korínská, Palacky University, Faculty of Education, Czech Republic

**Teaching Analysis Poll in higher education: From course feedback to multi-level quality development.**  
Luci Gommers, University of St.Gallen, Switzerland; Bernadette Dilger, University of St.Gallen, Switzerland; Robert Kordts-Freudinger, University of St. Gallen, Switzerland; Christian Schneider, University of St. Gallen, Switzerland

**Preparing Chilean teachers’ educators for an inclusive pedagogy through a training program**  
Constanza Herrera-Seda, Universidad de Santiago de Chile, Chile; Carolina García, Universidad de Santiago de Chile, Chile

**Implementing summative self-assessment to higher education**  
Henna Askainen, University of Helsinki, Finland; Sara Lindholm, University of Helsinki, Finland

**My pathway was bumpy: Senses of self and collective efficacy about higher education**  
Reed Curtis, Stockholm University, Sweden

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### Session J:12  |  Time: 10:15-11:45  |  Location: Seminar Room - S03

**ROUNDTABLE: HIGHER EDUCATION**

**Chair**  
Jaakko Hippi, University of Helsinki, Finland

**Integrating process data in the derivation of student test scores in evaluating online information**  
Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Beate Eichmann, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Frank Goldhammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

**Fostering Industrial Design students’ professional identity**  
Michiel van Diggelen, Open University of the Netherlands, Netherlands; Sonia Gomez Puente, Eindhoven University of Technology, Netherlands; Izabela Boloz, Eindhoven University of Technology, Netherlands

**Performing Arts as Pedagogical Mediation in Higher Education**  
Laure Kiepetz, Institute of Psychology & Education, Switzerland; Simon Hennein, EPFL-Microcity, Switzerland; Ramiro Tau, Institute of psychology and education, University of Neuchâtel, Switzerland

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### Session J:13  |  Time: 10:15-11:45  |  Location: Seminar Room - S01

**ROUNDTABLE: QUALITATIVE METHODS**

**Chair**  
Kim Dirks, Open University, Netherlands

**“Understanding About the Kid is Very Important”: Equity in Data Literacy for Teaching**  
Jon Beck, Old Dominion University, United States; Christina Santoyo, Young Harris College, United States

**Book sharing with young dual language learners in preschool**  
Svitlana Kuchenenko, University of Oslo, Norway; Veslemøy Rydland, University of Oslo, Norway; Vibeka Graver, University of Oslo, Norway

**First Job and the Unequal Distribution of Early-Childhood Educators: Evidence for the case of Chile**  
Verónica Cabezas, Pontificia Universidad Católica de Chile, Chile; Constanza Gomez, Pontificia Universidad Católica de Chile, Chile; María Jesús Sanchez, Pontificia Universidad Católica de Chile, Chile
### POSTER PRESENTATION: HIGHER EDUCATION

#### Chair
Ida Kuklansky, Ruppin Academic Center, Israel

- **Graduates' generic competences and approaches to learning in relation to thesis grade and study pace**
  - Tarja Tuononen, University of Helsinki, Finland; Anna Parpala, University of Helsinki, Finland

- **Less Dropout in Teacher Education Programs Using Aptitude Tests for Student Selection?**
  - Sebastian Franz, Leibniz Institute for Educational Trajectories (LIT), Germany; Jennifer Paetsch, University of Bamberg, Germany

- **An intervention on critical thinking through argumentation: findings and implications**
  - Jamila Bukkova-Moan, Nordic Institute for Studies in Innovation, Research and Education, Norway; Leila Ferguson, Kristiania University College, Norway

- **The Relevance of Digital Media Self-Efficacy and Media Usage for Achievement in Higher Education**
  - Marina Pumplow, University of Tübingen, Germany; Taiga Brahms, University of Tübingen, Germany

- **Academic staffs experiences of inclusive teaching in online education**
  - Ida Naai-Akbar, KTH Royal Institute of Technology, Sweden; Linda Barman, The Royal Institute of Technology (KTH), Sweden; Maria Wurfarnder, The Royal Institute of Technology (KTH), Sweden; Cormac Mc Grath, Stockholm University, Sweden

- **Outcomes of Higher Education. A Literature Review**
  - Kristina Walz, Justus-Liebig-Universität Giessen, Germany; Julia Carolin Brachem, Universität Vechta, Germany; Edith Braun, Justus-Liebig-Universität Giessen, Germany

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### POSTER PRESENTATION: EARLY CHILDHOOD EDUCATION

#### Chair
Jennifer Schwarze, RWTH Aachen University, Germany

- **Young children’s strategy generalization of geometry reasoning: a microgenetic analysis**
  - Mei-Chien, National Chia-yi University, Taiwan

- **The processing of symbolic and non-symbolic magnitudes at the end of childhood education.**
  - Carlos Mera, University of Cadiz, Spain; Manuel Aguilar-Villagran, University of Cadiz, Spain; Estibaliz Aragón, University of Cadiz, Spain; Belen Román, University of Cadiz, Spain; Jose I. Navarro-Guzman, University of Cadiz, Spain

- **Professionalization of dialogue in play guidance within preschool**
  - Eline van Rossum, Vrije Universiteit Amsterdam, Netherlands; Chiel van der Veen, VU University Amsterdam, Netherlands; Marjolein Dobber, Vrije Universiteit Amsterdam, Netherlands; Classien de Schipper, Vrije Universiteit Amsterdam, Netherlands; Maaike Rajmakers, Vrije Universiteit Amsterdam, Netherlands

- **The first two years in school: the impact of inattentive, hyperactive and impulsive children**
  - Tiago Bartholo, Federal University of Rio de Janeiro, Brazil; Mariane Campelo Kosinski, Federal University of Rio de Janeiro, Brazil; Karina Santos, Federal University of Rio de Janeiro, Brazil

- **Motivation, academic achievement and family practices: A cross-sectional investigation in 1st grade**
  - Raquel De Soto, University of Salamanca, Spain; Marta Ramos, Salamanca University, Spain; Álvaro Jáchez, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain

- **Can online tests adequately replace paper-and-pencil versions?**
  - Markus Szoszyns, Humboldt Universität zu Berlin, Germany
<table>
<thead>
<tr>
<th>Session J: 16</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S02</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROUNDTABLE: LIFELONG LEARNING</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Camilla Østerberg Rump, University of Copenhagen, Denmark</td>
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<td><strong>The Contribution of Mental Simulation to the Development of Intuition</strong></td>
<td>Bianca Steffen, University of Paderborn, Germany; Michael Goller, University of Bamberg, Germany; Christian Hartels, University of Paderborn, Germany</td>
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<td><strong>The role of goal-setting in formal learning scenarios - lessons learned from an experiment</strong></td>
<td>Gábor Kismihók, Leibniz Information Centre for Science and Technology, Germany; Stefan Mol, University of Amsterdam, Netherlands; Vladimir Kobayashi, University of Amsterdam, Netherlands; Catherine Zhao, The University of Sydney, Australia</td>
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<td><strong>Effects of internships on self-perceived competencies and didactic skills of prospective RE teachers</strong></td>
<td>Carina Canuso, University of Paderborn, Germany; Christian Hartels, University of Paderborn, Germany; Jan Woppowa, University of Paderborn, Germany</td>
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<thead>
<tr>
<th>Session J: 17</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S05</th>
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</thead>
<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: LEARNING GROWTH ESTIMATOR</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Venance Timothy, Ludwig Maximilians-Universität (LMU), Tanzania, United Republic of</td>
<td><strong>Learning Growth Estimator</strong></td>
</tr>
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</table>

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<thead>
<tr>
<th>Session J: 18</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S07</th>
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<tbody>
<tr>
<td><strong>WORKSHOP: SOLVING THE EMPLOYABILITY DILEMMA IN HIGHER EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Victoria Johansson, Lund University, Sweden</td>
<td><strong>Solving the employability dilemma in higher education</strong></td>
</tr>
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<thead>
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<th>Session J: 19</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S12</th>
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<tbody>
<tr>
<td><strong>ICT DEMONSTRATION: MAKING THE INTANGIBLE TANGIBLE: A TOOL FOR ENGINEERING CONNECTED CLASSROOM ENVIRONMENTS.</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Kathryn Bartimol-Autlick, The University of Sydney, Australia</td>
<td><strong>Making the intangible tangible: a tool for engineering connected classroom environments.</strong></td>
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**Annotations:**
This ICT Demonstration has been cancelled.
### POSTER PRESENTATION: SECONDARY EDUCATION

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<tr>
<th>Chair</th>
<th>University of California, United States</th>
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<tbody>
<tr>
<td></td>
<td>Rhetorical competence and rhetorical devices in text comprehension in Secondary Education</td>
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<tr>
<td></td>
<td>Maria García Serrano, University of Salamanca, Spain; J. Ricardo García Pérez, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain</td>
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<td>When Instructional Software is Integrated: A Study of GeoGebra in High School Mathematics Teaching</td>
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<td>Shiyu Liu, Ocean University of China, China; Jingyu Qiu, Ocean University of China, China</td>
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<td>Which factors influence students' learning activities in religious education?</td>
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<td>Alexander Unser, TU Dortmund University, Germany</td>
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<td>How do classroom goal structures shape secondary school students' achievement goals?</td>
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<td>Marjon Folkers-Bruinisma, University of Groningen, Netherlands; Esther Caminus, University of Agder, Norway; Elis van Rooij, University of Groningen, Netherlands</td>
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<td>Reading Comprehension of Immigrant Mothers' Children in Mathematical Word Problems</td>
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<td>Yun Hsia Pao, National Tsing Hua University, Taiwan; Su Wei Lin, National University of Tainan, Taiwan; Chia-Huang Chen, National Taichung University of Education, Taiwan; Cheng-Shu Chien, Taiwan University of Technology, Taiwan</td>
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<td>Relations between contribution to school and community, self-regulation, achievement and depression</td>
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<td>Marina Hirstein, University of Bergen, Norway; Ana Kurtovic, University of J. J. Strossmayer Osijek, Faculty of Humanities and Social Sciences, Croatia; Gabrijela Vidošič, Faculty of Humanities and Social Sciences Osijek, Croatia</td>
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### POSTER PRESENTATION: HIGHER EDUCATION

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<tr>
<th>Chair</th>
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<tr>
<td></td>
<td>When prompts do not support learning outcome &amp; learning analytics fail to provide useful information</td>
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<td>Clara Schumacher, University of Mannheim, Germany; Dirk Ilenthaler, University of Mannheim, Germany</td>
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<td>Can strategy instructions support the self-regulated use of retrieval practice in higher education?</td>
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<td>Marloes Broeren, Avans Hogeschool / Avans University of Applied Sciences, Netherlands; Peter Verkooijen, Erasmus University Rotterdam, Netherlands; Anita Heijltjes, Avans University of Applied Sciences, Netherlands; Guus Smeets, Erasmus University Rotterdam, Netherlands; Lidia Arends, Erasmus University Rotterdam, Netherlands</td>
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<td>Learning patterns, academic stress and performance in undergraduates</td>
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<td>Antonio Vega Martínez, Universidad Autónoma de Barcelona, Spain; Jose Reinaldo Martínez-Fernandez, Universitat Autònoma de Barcelona, Spain; Jordi Coduràs, Universitat de Lleida, Spain; Jordi García-Orell, Autonomous University of Barcelona, Spain</td>
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<td>Experiences on self-regulation among students in a flipped classroom learning environment</td>
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<td>Sanna Välsänen, University of Eastern Finland, Finland; Ann Affman, University of Eastern Finland, Finland; Laura Hirsto, University of Helsinki/ University of Eastern Finland, Finland</td>
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<td>Ace Your Self-study: Using A Mobile Device App to Support Self-regulated Learning</td>
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<td>Martine Baars, Erasmus University Rotterdam, Netherlands; Kevin Kamermans, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands</td>
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<td>Oral Fluency Improvement through Discourse Marker Practice in a Japanese University EFL Class</td>
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<td>Brian Wojtowicz, Kwansei Gakuin University, Japan</td>
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**Session K: 1**

**Time: 12:00-13:30**

**Location: Lecture Hall - H05**

**SYMPOSIUM: “SHOULD I STAY OR SHOULD I GO?” – ADAPTATION AND DROP-OUT IN HIGHER EDUCATION**

**Chair**
Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal

**Organisers**
Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Eleftheria Goura, Aristotle University of Thessaloniki, Greece

**Discussant**
Stuart Karabenick, University of Michigan, United States

**University students at risk for dropping out: Their motivational and emotional profile**
Eleftheria Goura, Aristotle University of Thessaloniki, Greece; Dimitrios Stamoliasis, Aristotle University of Thessaloniki, Greece; Constantine Alivazis, Aristotle University of Thessaloniki, Greece; Konstantina Falanga, Aristotle University of Thessaloniki, Greece

**“Am I Happy at the University?” – Factors contributing to adaptation to Higher Education**
Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Leandro Almeida, University of Minho, Institute of Education, Braga, Portugal; Maria do Ceu Taveira, University of Minho, Portugal; José Castro Silva, ISPA - Instituto Universitário, Portugal; Maria João Gouveia, ISPA – Instituto Universitário, APPsiCi, Lisboa, Portugal

**Predicting study satisfaction and drop out intentions in higher education: the case of Serbia**
Ksenija Krstic, University of Belgrade, Serbia; Ivana Stepanovic Ilić, University of Belgrade, Serbia; Marina Videnovic, University of Belgrade, Serbia; Olga Todorovic Todorovic, University of Belgrade, Serbia

**“May I Help you?” – The project SUNStAR: Supporting University Students at Risk of Dropping-Out**
Philipp Nolden, RWTH Aachen University, Germany; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Marold Wosnitza, RWTH Aachen University, Germany; Eleftheria Goura, Aristotle University of Thessaloniki, Greece

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**Session K: 2**

**Time: 12:00-13:30**

**Location: Lecture Hall - H10**

**SYMPOSIUM: MATHEMATICAL GIFTEDNESS AND EXPERTISE**

**Chairs**
Roland H. Grabner, University of Graz, Austria; Bert De Smedt, KU Leuven, Belgium

**Organisers**
Roland H. Grabner, University of Graz, Austria; Bert De Smedt, KU Leuven, Belgium

**Discussant**
Jake McMullen, University of Turku, Finland

**The domain-specific and domain-general cognitive correlates of high achievement in mathematics**
Merel Bakker, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium

**Top 5% math students worldwide: A meta-analysis of gender differences in achievement and motivation**
Franzis Preckel, University of Trier, Germany; Lena Keller, University of Potsdam, Germany; Jacqueslynne Eccles, University of California, Irvine, United States; Martin Brunner, University of Potsdam, Germany

**Predicting academic achievements of high ability STEM students**
Mohay Benkowitz, ETH Zurich - Research on Learning and Instruction, Switzerland; Elisabeth Stern, ETH Zurich, Switzerland

**Creativity and expertise in mathematics - an egg or a chicken?**
Roza Leikin, University of Haifa, Israel

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**Session K: 3**

**Time: 12:00-13:30**

**Location: Lecture Hall - H07**

**SYMPOSIUM: CODING AND ANALYSING TEACHER FEEDBACK QUALITY IN CLASSROOM SITUATIONS**

**Chair**
Robbert Smit, University of Teacher Education St.Gallen, Switzerland

**Discussant**
Maria Araceli Ruiz-Primo, Stanford University, United States

**Using video technology to examine teacher-student perceptions of oral feedback interactions**
Lenore Adie, Australian Catholic University, Australia; Fabienne van der Kleij, Australian Catholic University, Australia; Joy Cumming, Australian Catholic University, Australia

**Classroom interaction in elementary school: The role of feedback**
Vera Monteiro, Instituto Superior Psicologia Aplicada, Portugal; Lourdes Mata, Instituto Universitário / CIE - ISPA (Research Center in Education), Lisbon, Portugal; Natale Nobrega Santos, ISPA - Instituto Superior de Psicologia Aplicada, Portugal; Cristina Sanches, ISPA - Instituto Superior de Psicologia Aplicada, Portugal; Marta Gomes, ISPA - Instituto Superior de Psicologia Aplicada, Portugal

**Formative feedback on primary students’ mathematical reasoning**
Andrea Balian, SFF Helsingborg, Sweden; Anders Jonsson, Kristiansand University, Sweden

**Video analysis of formative feedback for mathematical reasoning**
Patricia Bachmann, University of Teacher Education St.Gallen, Switzerland; Robbert Smit, University of Teacher Education St.Gallen, Switzerland
### SYMPOSIUM: INTERACTION IN ECEC: FINDINGS FROM GROUP-ORIENTED V INDIVIDUALIZED PERSPECTIVES WITH (IN)CLASS

**Chair**
Cathleen Bethke, Leibniz University Hannover, Germany

**Organiser**
Heike Wadepohl, Leibniz University Hannover, Germany

**Discussant**
Antje von Suchodoletz, New York University Abu Dhabi, United Arab Emirates

- The association between teacher stress and quality of teacher-child interactions: Moderating factors
  - Viola Penttinen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Antje von Suchodoletz, New York University Abu Dhabi, United Arab Emirates; Marja-Kristiina Lunkkanen, University of Jyväskylä, Finland

- The impact of play settings’ areas on the quality of teacher-child-interactions
  - Cathleen Bethke, Leibniz University Hannover, Germany; Heike Wadepohl, Leibniz University Hanover, Germany

- Examining the factor structure of the Individualized Classroom Assessment Scoring System (inCLASS)
  - Eva Maria Embacher, Leopold-Franzens-Universität Innsbruck, Austria; Wilfried Smidt, University of Innsbruck, Austria

- Individual children’s interactions and their relation to home learning environment...
  - Magdalena Riedmeier, University Koblenz-Landau, Germany; Katharina Kluczniok, Otto-Friedrich-University of Bamberg, Germany, Thilo Schmidt, Universität Koblenz-Landau, Germany

### SYMPOSIUM: HISTORY TEXTBOOKS: CONSTRAINTS AND AFFORDANCES FOR HISTORICAL THINKING AND MULTIPERSPECTIVITY

**Chair**
Carla Van Boxtel, University of Amsterdam, Netherlands

**Organiser**
Carla Van Boxtel, University of Amsterdam, Netherlands

**Discussant**
Tsafrir Goldberg, University of Haifa, Israel

- Narrative, metaphor and multiperspectivity in the history classroom. A case study
  - Marc Kropman, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

- Students’ critical analysis of history textbook narratives about universal suffrage
  - Annemieke Houwen, University of Amsterdam, Netherlands; Paul Holthuis, Rijksuniversiteit Groningen, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

- History textbooks and the construction of national identity in Syria
  - Shaima Muhammad, University of Innsbruck, Austria

- Implementing the paradigm shift to historical thinking in Austria. The crucial role of textbooks
  - Roland Bernhard, University of Salzburg, Austria

### SYMPOSIUM: THEY BELIEVE HAPPILY EVER AFTER: PRE-SERVICE TEACHERS’ BELIEFS AND RECEPTION OF EDUCATIONAL RESEARCH

**Chair**
Johannes Bauer, University of Erfurt, Germany

**Organisers**
Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

**Discussant**
Gavin Brown, University of Auckland, New Zealand

- Are pre-service teachers aware of their educational psychology misconceptions?
  - Stephanie Pieschl, Technische University of Darmstadt, Germany; Janene Budd, University of Newcastle, Australia; Jennifer Archer, The University of Newcastle, Australia

- Questioning educational research: When evidence challenges pre-service teachers’ prior beliefs
  - Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany; Bernadette Goltz, University of Erfurt, Germany; Timan Betsch, University of Erfurt, Germany

- Pre-service teachers’ epistemic trust in educational scientists: A ‘smart but evil’ stereotype?
  - Tom Rosman, Leibniz Institute for Psychology Information, Germany; Samuel Merk, University of Tübingen, Germany

- The instrumental quality of information sources for teaching: Pre-service teachers’ beliefs
  - Katharina Kiemer, Universität Augsburg, Germany; Ana Gatserelia, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany
### SYMPOSIUM: LEARNING BY MAKING COMPARATIVE JUDGEMENTS? IT'S ALL ABOUT THE MENTAL EFFORT!

<table>
<thead>
<tr>
<th>Chair</th>
<th>Learning by making multiple comparative judgements: a longitudinal analysis of mental effort</th>
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<tbody>
<tr>
<td></td>
<td>Tine van Daal, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; Sven De Maeyer, University of Antwerp, Belgium</td>
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<th>Organiser</th>
<th>Unpacking teachers’ assessment practices in STEM education across countries</th>
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<td></td>
<td>Eva Hartel, KTH Royal Institute of Technology, Sweden; Greg Strimel, Purdue University, United States; Scott Bartholomew, Purdue University, United States; Emily Yoshikawa-Ruesch, Purdue University, United States</td>
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<th>Discussant</th>
<th>Learning by comparison: Effects of comparative judgment on feedback and performance in writing</th>
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<td>Renske Bouwer, Vrije Universiteit Amsterdam, Netherlands; Marije Lesterruis, University of Antwerp, Belgium; Pieterjan Bonne, Artevelde University College Ghent, Belgium; Sven De Maeyer, University of Antwerp, Belgium</td>
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<tr>
<th>The feasibility of CJ for assessing medical students’ self-reflections</th>
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<td>Marije Lesterruis, University of Antwerp, Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium; Benedicta De Winter, University of Antwerp, Belgium; Maarten Geossens, University of Antwerp, Belgium; Sven De Maeyer, University of Antwerp, Belgium; Nele Michels, University of Antwerp, Belgium</td>
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### SYMPOSIUM: CRITICAL THINKING IN HIGHER EDUCATION: EDUCATIONAL GUIDELINES AND INSTRUCTIONAL INTERVENTIONS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Critical Thinking in Higher Education</th>
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<tbody>
<tr>
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<td>Ailie Ahern, University College Dublin, Ireland; Claran McNally, University College Dublin, Ireland; John O’Sullivan, University College Dublin, Ireland</td>
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<th>Organisers</th>
<th>Towards an ‘Educational Protocol’ for Stimulating Critical Thinking in Higher Education</th>
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<td>Jan Ellen, KU Leuven, Belgium; Steven Huyghens, KU Leuven (BE), Belgium; Marleen Evers, KU Leuven (BE), Belgium; Lai Jiang, KU Leuven (BE); Belgium; An Verburg, University College Leuven Limburg, Belgium</td>
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<th>Discussant</th>
<th>Training Higher Education Teachers to Identify Biases in Students’ Critical Thinking</th>
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<td>Eva Janssen, Utrecht University, Netherlands; Tim Maenhart, Utrecht University, Netherlands; Anita Heijtjes, Avans University of Applied Sciences, Netherlands; Peter Verkoeijen, Erasmus University Rotterdam, Netherlands; Lara van Peppen, Erasmus University Rotterdam, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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### SYMPOSIUM: NEW PERSPECTIVES ON PLAYFUL LEARNING IN EARLY STEM EDUCATION

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<tr>
<th>Chair</th>
<th>Preschooler’s Concepts and Problem Solving in the Domain of Gears in the Context of Guided Play</th>
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<td>Timo Reuter, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz - Landau, Germany</td>
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<th>Organiser</th>
<th>Preschoolers’ Early Engineering Thinking and Metacognitive Capabilities during Constructional Task</th>
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<td>Tal Shechter, Da-Gan Center, Israel; Ornit Spektor-Levy, Bar-Ilan University, Israel</td>
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<th>Discussant</th>
<th>Scaffolding to support autonomy promotes children’s self-regulated learning</th>
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<td></td>
<td>Audrey Kittredge, Consultant, United States; Krishna Kulkarni, Faculty of Education, University of Cambridge, United Kingdom; Natalie Day, Faculty of Education, University of Cambridge, United Kingdom; Sara Baker, Faculty of Education, United Kingdom</td>
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<tr>
<th>The effect of a guided play session on preschoolers’ knowledge about balance</th>
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<tr>
<td>Anka Maria Weber, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz - Landau, Germany</td>
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## Session K: 10
**Time:** 12:00-13:30  
**Location:** Seminar Room - S05

### SINGLE PAPER: MOTIVATION AND READING COMPREHENSION

**Chair**  
Risë Hakvoort, Göteborg University, Sweden

**The role of gender stereotypes in reading motivation: A study in high-school Chilean Students**  
Ana María Espinoza Catalán, Pontificia Universidad Católica de Chile, Chile; Katherine Strasser Salinas, Pontificia Universidad Católica de Chile, Chile

**The relation between 9th grade students' reading motivation, reading behavior, and comprehension.**  
Kim Van Ammel, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Koen Aesaert, Ghent University, Belgium

**Reading gains and social validity of personalized book reading intervention in secondary school.**  
Suzanne Mol, Leiden University, Netherlands; Christine Espin, Leiden University, United States

**Does comprehensibility influence the readers' intrinsic motivation during reading?**  
Marcus Friedrich, Technical University of Braunschweig, Germany; Elke Heise, Institut für Pädagogische Psychologie, TU Braunschweig, Germany

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## Session K: 11
**Time:** 12:00-13:30  
**Location:** Seminar Room - S13

### SINGLE PAPER: REFLECTION

**Chair**  
Katja Scharenberg, University of Education Freiburg, Germany

**Cultivation of science process skills by promoting effective collaboration and reflection**  
Yuri Uesaka, The University of Tokyo, Japan; Satomi Shibata, University of Tokyo, Japan; Elsuko Tanaka, Nagoya University, Japan

**Professional identities of English literature teachers in South Africa**  
Salome Romyllos, North-West University, South Africa

**Dialogic tensions in pre-service subject teachers' identity negotiations**  
Maaari Arvoa, University of Jyväskylä, Finland; Anneli Sarja, University of Jyväskylä, Finland

**Teachers' occupational attributes and their psychological wellbeing and job satisfaction**  
Hanne Kopperhoek, University of Groningen, Netherlands; Doreen McInerney, The Australian Catholic University, Australia; Hui Wang, McGill University, Montreal, Canada; Alexandre Morin, Concordia University, Montreal, Canada

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## Session K: 12
**Time:** 12:00-13:30  
**Location:** Seminar Room - S12

### SINGLE PAPER: INQUIRY LEARNING IN PRIMARY EDUCATION

**Chair**  
Denis Francesconi, Danish School of Education, Denmark

**New approaches to Philosophy with Children: two methods for developing Community of Inquiry practice**  
Laura Kerslake, University of Cambridge, United Kingdom; Enrico Postiglione, University of Modena & Reggio Emilia, Italy

**Understanding Causal Relationships at Primary School**  
Callate Scheibling, Paris 8 University, France; Elena Pasquinelli, Foundation La main à la pate, France; Emmanuel Sander, University of Geneva, Switzerland

**What happens during Scaling up? Promoting Primary School Children’s Inquiry Learning**  
Julia Schöffel, University of Tübingen, Germany; Jessica Golle, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany

**Intervention on Sixth Graders Online Inquiry Skills in Science**  
Norbert Erdmann, University of Turku, Finland; Mirjamaja Miikka-Erdmann, University of Turku, Finland; Eero Sormunen, University of Tampere, Finland; Marja Vauras, University of Turku, Finland
### Session K: 13
**Time:** 12:00-13:30  **Location:** Seminar Room - S07

**SINGLE PAPER: MIXED-METHOD RESEARCH IN LEARNING TECHNOLOGIES**

**Chair**
Esther Kaufmann, University of Education Zurich / University of Zurich, Switzerland

**The use of the « Lantern » tool to promote self-regulation learning and classroom management**
Sheila Padiglia, HEP-BeJUNE, Switzerland; Stéphanie Bobchat-Heer, HEP-BeJUNE, Switzerland; Céline Misserez-Capersos, HEP-BeJUNE, University of teacher education, Switzerland

**Self-regulated learning skills matter in dashboard sense-making**
Ioana Jivet, Open University of the Netherlands, Netherlands; Maren Scheffel, Open University of the Netherlands, Netherlands; Marcel Schmitz, Zuyt University of Applied Sciences, Netherlands; Marcus Specht, Open University of the Netherlands, Netherlands; Hendrik Drachter, Goethe University Frankfurt, Germany

**Dialect and Standard Language in Kindergarten**
Johanna Quiring, St.Gallen University of Teacher Education, Switzerland; Franziska Vogt, University of Teacher Education St.Gallen, Switzerland; Martina Zumtobel, Pädagogische Hochschule Vorarlberg, Austria; Cordula Löfler, University of Education Weingarten, Germany

**Using Eye-tracking and EEG to investigate the Redundancy Principle in Virtual Reality**
Sarue Bacevicicute, University of Copenhagen, Denmark; Thomas Tørkildsen, University of Copenhagen, Denmark; Guido Makransky, University of Copenhagen, Denmark

### Session K: 14
**Time:** 12:00-13:30  **Location:** Seminar Room - S09

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION**

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

**An investigation of students’ actions in response to written feedback in a science course**
Costas Constantiou, University of Cyprus, Cyprus; Elena Siakkidou, University of Cyprus, Cyprus; Evangelia Ilarakou, University of Cyprus, Cyprus; Olia Tsivitanidou, University of Cyprus, Cyprus

**Validity and Resource Affordances in Examinations: A Theoretical and Methodological Framework**
Tobias Halbherr, Swiss Federal Institute of Technology Zurich / ETH Zurich, Switzerland

**Undergraduates’ and graduates’ critical thinking skills in a performance assessment**
Marie-Theres Nagel, Johannes Gutenberg University Mainz, Germany; Olga Zlatkin-Trotschelskaja, Johannes Gutenberg-Universität Mainz, Germany; Susanne Schmidt, Johannes Gutenberg-Universität Mainz, Germany; Richard Shavelson, Stanford University, United States; Klaus Beck, Johannes Gutenberg-Universität, Germany; Dimitri Molerov, Humboldt-Universität Berlin, Germany; Jana Jurisch, Johannes Gutenberg-Universität Mainz, Germany

**What’s the point: Do annotations on students’ work promote self-regulation?**
Cathrine Derham, University of Surrey, United Kingdom; Kieran Ballo, University of Surrey, United Kingdom; Naomi Winstone, University of Surrey, United Kingdom; Maria Norman, University of Surrey, United Kingdom

### Session K: 15
**Time:** 12:00-13:30  **Location:** Seminar Room - S14

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS**

**Chair**
Julia Hein, University of Mannheim, Germany

**Alternative assessment: Toward Advancing Future Skills [ASSET: Erasmus+ co-funded project]**
Dorit Alt, Kinneret College on the Sea of Galilee, Israel; Nirit Raichel, Kinneret College on the Sea of Galilee, Israel

**Feedback metaphors in online learning environments**
Lasse Jensen, University of Copenhagen, Denmark; Margaret Bearman, Deakin University, Australia; David Boud, University of Technology Sydney/Deakin University, Australia

**A systematic review of methods for the assessment of collaborative learning in higher education**
Hajo Meier, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Rink Hoekstra, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

**The state of the art of interprofessional assessment in undergraduate health and social education.**
Hester Smeets, Zuyt University of Applied Sciences & Maastricht University, Netherlands; Dominique Sloeters, Zuyt University of Applied Sciences, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands; Albine Moser, Zuyt University of Applied Sciences, Netherlands
### SINGLE PAPER: TEACHER EFFECTIVENESS AND TEACHER PROFESSIONAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Chair</th>
<th>Session: 16</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander Eitel, U. Fribourg, Germany</td>
<td>A preliminary typology of teachers with multiple jobs based on professional life stories</td>
<td>Lianne Teder, Tallinn U., Estonia; Rain Mikser, Tallinn U., Institute of Educational Sciences, Estonia</td>
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<td>Investigating the Effectiveness of an Individualized Coaching Approach for Mathematics Teachers</td>
<td>Dione Gross Francis, Indiana U., United States; Ji-Hong, U. of Oklahoma, United States</td>
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<td>Fostering teachers’ competences in the context of digital transformation – evidence from Switzerland</td>
<td>Josef Guggemos, U. St.Gallen, Switzerland; Sabine Seufert, U. of St.Gallen, Switzerland</td>
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<td>Measuring science instruction with a tablet e-portfolio: Reliability with units of different length</td>
<td>Jose Felipe Martinez, U. of California, United States; Matthew Kloser, U. of Notre Dame, France; Jayashri Shrivastav, U. of California, Los Angeles, United States; Brian Stecher, The RAND Corpoation, United States; Amanda Eidelman, The RAND Corporation, United States</td>
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### SINGLE PAPER: EVOLUTIONARY EDUCATIONAL PSYCHOLOGY: CONSIDERING PRIMARY KNOWLEDGE TO FACILITATE LEARNING

<table>
<thead>
<tr>
<th>Chair</th>
<th>Session: 17</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S02</th>
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</thead>
<tbody>
<tr>
<td>Florence Lespiau, U. Toulouse, France</td>
<td>Motivate Learners and Promote Formal Logic Learning through Primary Knowledge</td>
<td>Florence Lespiau, U. of Toulouse, France; André Tricot, U. of Toulouse, France</td>
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<td>Gesturing and Manipulations: Primary Skills that Aid Attaining Secondary STEM Skills</td>
<td>Juan Cristóbal Castro Alonso, Universidad de Chile, Chile; Paul Ayres, U. of New South Wales, Australia; Fred Paas, Erasmus U. Rotterdam/University of Wollongong, Netherlands</td>
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<td>Does Foreign Language Learning Concern Primary or Secondary Knowledge?</td>
<td>André Tricot, U. of Toulouse, France; Stéphanie Roussel, LACES - U. of Bordeaux, France; John Sweller, U. of New South Wales, Australia</td>
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<td>Finger Pointing to Self-manage Cognitive Load in Learning from Split-attention Examples</td>
<td>Shihong Zhang, Erasmus University Rotterdam, Netherlands; Byrn B. de Koning, Erasmus U. Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands</td>
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### SINGLE PAPER: COMPUTER-ASSISTED LEARNING

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<thead>
<tr>
<th>Chair</th>
<th>Session: 18</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S01</th>
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<tbody>
<tr>
<td>Thorsten Scheiner, Australian Catholic U., Australia</td>
<td>Siri and ‘friends’ challenging the research on speaking and writing, conceptual issues and outlooks</td>
<td>Beatrice Arend, U. of Luxembourg, Luxembourg; Pierre Ficmer, Institut of Education and Society (InEs), Luxembourg</td>
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<td>Comparative feedback and reflection as a factor in student-centered learning in vocational education</td>
<td>Elise Ehuis, U. of Twente, Netherlands; Judith ter Vrugte, U. of Twente, Netherlands; Anjo Anjewierden, U. of Twente, Netherlands; Ton de Jong, U. of Twente, Netherlands</td>
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<td>Trade-offs between time-on-task and retrospective action in computer supported inquiry learning</td>
<td>Nikoleta Xenofontos, University of Cyprus, Cyprus; Tasos Howards, University of Cyprus, Cyprus; Zacharias Zacharia, University of Cyprus, Cyprus; Ton de Jong, U. of Twente, Netherlands</td>
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<td>Students’ perceptions &amp; need for relatedness in blended learning: A learning analytics intervention</td>
<td>Elise Ameeloot, Ghent University, Belgium; Tij Rotaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium</td>
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</tbody>
</table>
Session K: 19 | Time: 12:00-13:30 | Location: Seminar Room - S10

SINGLE PAPER: MORAL AND DEMOCRATIC EDUCATION

Chair
Katharina Neuber, University of Duisburg-Essen, Germany

Not Able to Resist the Temptation: The Moral Landscape of Bystanders of Bullying
Eveline Gutzwiller-Helfenfinger, University of Fribourg, Switzerland

Smart morality: Happy victimizing, moral hypocrisy, and moral resilience in a game-theoretic context
Gerhard Minnemaier, Goethe-Universität Frankfurt, Germany; Tim Bonowski, University of Frankfurt, Germany

Educational democratic values in Vietnamese secondary education
T.T. Thanh Le, IKLON-Leiden University Graduate School of Teaching, Netherlands; Dineke Tigelaar, Leiden University, Netherlands; Wilfried Adraro, Leiden University, Netherlands

Learning and development of historical thinking from a historical-cultural perspective
Natalia Alboroz, Pontificia Universidad Católica de Chile, Chile; Christian SEBASTIÁN, Pontificia Universidad Católica de Chile, Chile

Session K: 20 | Time: 12:00-13:30 | Location: Seminar Room - S15

SINGLE PAPER: ONLINE AND COMPUTER-SUPPORTED COLLABORATIVE LEARNING

Chair
Ellen Kok, Utrecht University, Netherlands

Process-oriented and collaborative learning of new software for the workplace
Mandy Hommel, TU Dresden, Germany

Investigating the (im)permeable membrane of virtual sites for learning: critical explorations
Giulia Mesina Dahlberg, University of Gothenburg, Sweden

Combining data mining and traditional statistics: An example from educational technology research
Elisabeth Duursma, University of Wollongong, Australia; Carlos González-Ugalde, Pontificia Universidad Católica de Chile, Chile; Sarah Howard, University of Wollongong, Australia; Jie Yang, University of Wollongong, Australia; Jun Ma, University of Wollongong, Australia

Digitalization in upper secondary schools in Switzerland: Principals’ leadership, beliefs and goals
Michael Ruloff, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Dominik Potko, University of Zurich, Switzerland

Session K: 21 | Time: 12:00-13:30 | Location: Seminar Room - S06

SINGLE PAPER: MODEL-BASED REASONING AND ARGUMENTATION IN SCIENCE EDUCATION

Chair
Jule Krüger, Universität Duisburg-Essen, Germany

Teaching science through curriculum-supported argumentation: Learning through arguing and thinking
Antonia Larrain, Universidad Alberto Hurtado, Chile; Patricia López, Universidad Alberto Hurtado, Chile; Jorge Pinochet, Universidad Alberto Hurtado, Chile; Katherine Strasser, Pontificia Universidad Católica de Chile, Chile; Christine Hoes, University of Cambridge, United Kingdom; Selma Leitao, Universidad Federal de Pernambuco, Brazil; Camila Moran, Universidad Alberto Hurtado, Chile; Alvaro Sanchez, Universidad Alberto Hurtado, Chile; Maximiliano Silva, Universidad Alberto Hurtado, Chile; Constanza Villanconcio, Universidad Alberto Hurtado, Chile; Carla Varela, Universidad Diego Portales, Chile

Towards a definition and measurement of socio-scientific argumentation: A literature review
Olga Ioannidou, Ludwig Maximilian University, Germany; Andreas Heirmanek, Technical University of Munich (TUM), Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany; Tina Seidel, Technische Universität München, Germany

Examining argumentative essays across a curriculum and identifying ruling-out arguments
Hobbas El-Modiным, Rutgers University, United States; Clark Chinn, Rutgers University, United States; Ravil Duncan, Rutgers University, United States; Elizabeth O’Brien, Rutgers University, United States

Students’ Use of Epistemic Criteria Across Model Evaluation Tasks
Na’ama Av-Shalom, Rutgers University Graduate School of Education, United States; Brandon Maclar-Augustin, Rutgers University, United States; Hobbas El-Modiным, Rutgers University, United States; Veronica Caver, Rutgers University Graduate School of Education, United States; Ravil Duncan, Rutgers University, United States; Clark Chinn, Rutgers University, United States
### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS

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<th>Chair</th>
<th>Title</th>
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<tr>
<td>Cyril Brom, Charles University, Czech Republic</td>
<td>Choosing a study for higher education: The identification of decision-making profiles</td>
<td>Lien Demulder, KU Leuven, Belgium; Vincent Donche, University of Antwerp, Belgium; Marlies Lacante, Faculty Psychology and Educational Sciences, Belgium</td>
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<td></td>
<td>Development of an adaptive Flemish reading comprehension test for secondary school students</td>
<td>Blijde Van Dressche, University of Ghent, Belgium; Emmelien Merchie, Ghent University, Belgium; Hilde Hacquebord, University of Groningen, Netherlands; Hilde Van Keer, Ghent University, Belgium; Michiel Hol, Independent Researcher, Netherlands</td>
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<td>A psychometric validation of the three dimensions of the short-form CART (Stanovich et al., 2017).</td>
<td>Marion Tillema, Avans Hogeschool / Avans University of Applied Sciences, Netherlands</td>
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<td>Increasing the Flexibility of Large-Scale Assessments with Fixed Item Parameter Calibration</td>
<td>Christoph Keonig, Goethe University Frankfurt am Main, Germany; Late Khorramdal, Educational Testing Service, United States; Kentaro Yamamoto, Educational Testing Service, United States; Andreas Frey, Goethe University Frankfurt am Main, Germany</td>
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### EARLI KEYNOTE SESSION: AT THE BOUNDARY OF SCHOOL: DIS/CONTINUITIES IN STUDENTS’ IN AND OUT-OF-SCHOOL PARTICIPATIONS

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<tr>
<th>Chair</th>
<th>Title</th>
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<tr>
<td>Ali Leijen, University of Tartu, Estonia</td>
<td>At the boundary of school: Dis/continuities in students’ in and out-of-school participations</td>
<td>Larke Bronkhorst, Utrecht University, Netherlands</td>
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### EARLI KEYNOTE SESSION: RESEARCH ON TEACHING: CONTENT MATTER, PRACTICES, QUALITY AND EFFECTIVENESS

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<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors and Affiliations</th>
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<tr>
<td>Wolfram Rollett, University of Education Freiburg, Germany</td>
<td>Research on Teaching: Content Matter, Practices, Quality and Effectiveness</td>
<td>Edshard Klieme, German Institute for International Educational Research (DIPF), Germany</td>
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### EARLI KEYNOTE SESSION: WHEN PRODUCTIVE FAILURE FAILS

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<th>Chair</th>
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<th>Authors and Affiliations</th>
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<tr>
<td>Eleni Kyza, Cyprus University of Technology, Cyprus</td>
<td>When Productive Failure Fails</td>
<td>Manu Kapur, ETH Zurich, Switzerland</td>
</tr>
</tbody>
</table>
Session L: 1
Time: 15:30-17:00
Location: Lecture Hall - H10

SIG INVITED SYMPOSIUM: SIG 15: ANTECEDENTS AND OUTCOMES OF TEACHING QUALITY IN INCLUSIVE CLASSROOMS

Chair
Elisabeth Moser Opitz, University of Zurich, Switzerland
Discussant
Hannu Savolainen, University of Jyväskylä, Finland

Differentiation in Secondary School – Do teachers’ attitudes and self-efficacy beliefs matter?
Susanne Schwab, University of Vienna, Austria; Lisa Hoffmann, University of Wuppertal, Germany; Umesh Sharma, Monash University, Australia

Differentiation in Inclusive Classrooms - Results of a Video Study
Elisabeth Moser Opitz, University of Zurich, Switzerland; Helena Krähenmann, University of Zurich, Switzerland; Sarah Jandi, University of Teacher Education Zurich, Switzerland; Franziska Felder, University of Zurich, Switzerland; Rachel Serrmer Dessemontet, University of Teacher Education Vaud, Switzerland

What matters for the Learning Gains of Students in Inclusive Classrooms?
Elisabeth Moser Opitz, University of Zurich, Switzerland; Helena Krähenmann, University of Zurich, Switzerland; Sarah Jandi, University of Teacher Education Zurich, Switzerland; Franziska Felder, University of Zurich, Switzerland; Susanne Schneppel, University of Zurich, Switzerland; Rachel Serrmer Dessemontet, University of Teacher Education Vaud, Switzerland

Is there a dark side of co-teaching? Relations of co-teaching and students’ academic achievement
Thorsten Henke, Leibniz University Hannover, Germany; Nadine Spöder, University of Potsdam, Germany; Stefanie Bosse, University of Potsdam, Germany

Session L: 2
Time: 15:30-17:00
Location: Lecture Hall - H04 - Knorr-Bremse Hörsaal

SYMPOSIUM: ANALYZING TRACE DATA AS AN APPROACH FOR THE INVESTIGATION OF CENTRAL PROCESSES OF READING

Chair
Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany
Organisers
Corinna Schror, University of Bamberg, Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany
Discussant
Philip Wonne, Simon Fraser University, Canada

Strategic processing of a reading comprehension test: trace data on the allocation of study time
Ilka Wolter, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Cordula Anett, Leibniz Institute for Educational Trajectories, Germany

Processes of multiple document comprehension and their relationship to test performance
Corinna Schror, University of Bamberg, Germany; Carolin Hahnel, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Nina Mahlow, Leibniz Institute for Educational Trajectories (LIfBi), Germany; Ulf Kroehne, DIPF, Germany; Frank Gotthammer, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Cordula Anett, Leibniz Institute for Educational Trajectories, Germany

Impact of selective and general task instructions in multiple documents reading
Raquel Cerdá, University of Valencia, Spain; Carmen Marín, University of Valencia, Spain

Investigating sixth graders’ selection and use of main ideas from multiple online texts
Carla Kilt, University of Oslo, Norway; Nina Kulberg, University of Jyväskylä, Finland; Ivar Bråten, University of Oslo, Norway; Roberto González-Isaíñez, University of Santiago, Chile; Paavo H. T. Leppänen, University of Jyväskylä, Finland

Session L: 3
Time: 15:30-17:00
Location: Lecture Hall - H11

SYMPOSIUM: RECONSIDER THE CONCEPT OF SOCIAL INTEGRATION IN THE FIRST YEAR OF HIGHER EDUCATION

Chair
Vincent Donche, University of Antwerp, Belgium
Organisers
Vincent Donche, University of Antwerp, Belgium; Jonas Willems, University of Antwerp, Belgium
Discussant
Marjane Frenezy, Université catholique de Louvain (UCL), Belgium

Examining social integration in the first year of higher education: a mixed-method approach
Elke Bosse, University of Hamburg, Germany; Carla Bohndick, University of Hamburg, Germany; Vanessa Jaesch, University of Hamburg, Germany

A network perspective on social integration and achievement in learning communities
Jasperina Brouwer, University of Groningen, Netherlands; Andreas Flache, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands; Adriaan Hofman, University of Groningen, Netherlands; Christian Steglich, University of Groningen, Netherlands

A longitudinal investigation of students’ social requirements in the first year at the university
Mikael De Clercq, Université catholique de Louvain (UCL), Belgium

Important factors of the social integration process of first-year university college students
Jonas Willems, University of Antwerp, Belgium; Liesje Coetjens, Université catholique de Louvain (UCL), Belgium; Vincent Donche, University of Antwerp, Belgium
### SYMPOSIUM: TEACHING TO/ABOUT DIVERSITY: TEACHING AND TEACHER EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
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<tr>
<td>Jo Lunn Brownlee, Queensland University of Technology, Australia</td>
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<tr>
<td>Florian Feucht, <a href="http://www.ThinkingHabits.com">www.ThinkingHabits.com</a>, United States</td>
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<tr>
<th>Session L: 4</th>
<th>Time: 15:30-17:00</th>
<th>Location: Lecture Hall - H07</th>
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<tr>
<td><strong>3R-EC Framework for teacher educator reflexivity about teaching to/about diversity</strong></td>
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<td>Jo Lunn Brownlee, Queensland University of Technology, Australia; Susan Walker, Queensland University of Technology, Australia; Leorrie Rowan, Griffith University, Australia</td>
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<td><strong>Enablers and constraints experienced by teacher educators when teaching to/about diversity</strong></td>
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<td>Mary Ryan, Macquarie University, Australia; Terri Bourke, Queensland University of Technology (QUT), Australia</td>
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<td><strong>Belonging in the classroom: Partnering for Change (P4C)</strong></td>
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<td>Sarah Mauser, Zuyd University of Applied Sciences, Netherlands; Barbara Piskur, Zuyd University of Applied Sciences, Netherlands</td>
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<td><strong>Politics of belonging: processes of inclusion and exclusion in educational settings</strong></td>
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<td>Anita Borge, University of Stavanger, Norway; Eva Marianne Johansson, University of Stavanger, Faculty of Arts and Education, Norway</td>
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### SYMPOSIUM: DEFINING AND MEASURING CURIOSITY IN THE CONTEXT OF LEARNING AND SCIENTIFIC PRACTICES

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<td>Tessa van Schijndel, University of Amsterdam, Netherlands</td>
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<td>Susanne Koerber, University of Education Freiburg, Germany</td>
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<thead>
<tr>
<th>Session L: 5</th>
<th>Time: 15:30-17:00</th>
<th>Location: Lecture Hall - H06 - Amazon Hörsaal</th>
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</thead>
<tbody>
<tr>
<td><strong>A novel approach to the assessment of curiosity</strong></td>
<td></td>
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<tr>
<td>Brenda Jansen, University of Amsterdam, Netherlands; Tycho Dekkers, University of Amsterdam, Netherlands; Tessa van Schijndel, University of Amsterdam, Netherlands</td>
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<tr>
<td><strong>Measuring Preschooler’s Curiosity by a Set of Integrated Scientific Educational Experiences</strong></td>
<td></td>
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<td>Omri Spektor-Levy, Bar-Ilan University, Israel; Yael Kesner Baruch, Levinsky College of Education, Tel Aviv, Israel; Zamira Mavearch, Bar-Ilan University, Israel</td>
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<td><strong>Curiosity and Inquiry-Based Learning</strong></td>
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<td>Tessa van Schijndel, University of Amsterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands; Maartje Rajmakers, University of Amsterdam, Netherlands</td>
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<td><strong>The importance of curiosity in the classroom: Methods of studying curiosity across contexts</strong></td>
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<td>Sharon Zunbrunn, Virginia Commonwealth University, United States; Jamie Jirout, University of Virginia, United States; Virginia Vitiello, University of Virginia, United States</td>
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### SYMPOSIUM: EPISTEMIC CHANGE FROM MULTIPLE PERSPECTIVES

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<th>Chair</th>
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<tr>
<td>Tom Rosman, Leibniz Institute for Psychology Information, Germany; Eric Klipp, Saarland University, Germany</td>
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<td>Ivar Breiten, University of Oslo, Norway</td>
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<tr>
<th>Session L: 6</th>
<th>Time: 15:30-17:00</th>
<th>Location: Lecture Hall - H08</th>
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<tbody>
<tr>
<td><strong>Epistemic Change in the First Year of Studying Psychology in Six European Countries</strong></td>
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<td>Peter Eidebrunner, ETH Zurich, Switzerland; Nina Vaupotić, University of Münster, Germany</td>
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<td><strong>Case studies of (pre-service) teachers’ changing epistemic cognition</strong></td>
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<td>Leila Ferguson, Kristiania University College, Norway</td>
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<td><strong>Does resolving conflicting scientific claims lead to more nuanced views on science?</strong></td>
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<td>Tom Rosman, Leibniz Institute for Psychology Information, Germany; Martin Kerwer, Leibniz-Institute for Psychology Information (ZPID), Germany</td>
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<td><strong>Indirect and direct interventions to foster epistemic change and argumentation</strong></td>
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<td>Eric Klipp, Saarland University, Germany; Robin Stark, Saarland University, Germany</td>
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### SYMPOSIUM: CLASSROOM BEHAVIOR AND ITS RELATION TO STUDENT MOTIVATION AND ENGAGEMENT

**Chair**
Jennifer Symonds, University College Dublin, Ireland

**Organisers**
Maximilian Knogler, Technical University of Munich (TUM), Germany; Ricardo Blöme, Technical University of Munich, Germany

**Discussant**
K. Ann Renninger, Swarthmore College, United States

**What Motivates Students’ Hand-Raising? On the relation between motivation and student behavior**
Ricardo Blöme, Technical University of Munich, Germany; Maximilian Knogler, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

**Collaborative group behavior as indices of students’ group and individual motivation and engagement**
Toni Rogat, Purdue University, United States; Britte Cheng, SRI International, United States; Anne Traynor, Purdue University, United States; Temitope Adeyeye, Purdue University, United States; Andrea Gormoli, Indiana University, United States; Patrik Lundh, SRI International, United States; Cindy Himel-Silver, Indiana University, United States

**Silver linings: Can students be disengaged on the outside but engaged on the inside?**
Jennifer Symonds, University College Dublin, Ireland; James Schreiber, Duquesne University, United States; Benjamin Torsney, University College Dublin, Ireland

**The relation between self-regulation and self-reported versus observed participation during class**
V. Charlotte Comodi, Pädagogische Hochschule St. Gallen, Switzerland; Franziska Vogl, University of Teacher Education St. Gallen, Switzerland; Doris Kunz Heim, PH FHNW, Switzerland

### SYMPOSIUM: THE TESTING EFFECT: COGNITIVE MECHANISMS AND PRACTICAL APPLICATION

**Chair**
Tim Sunna, Open University of the Netherlands, Netherlands

**Organiser**
Gesa van den Broek, Utrecht University, Netherlands

**Discussant**
Peter Vehicseelen, Erasmus University Rotterdam, Netherlands

**The testing effect and individual differences in cognitive proficiency**
Bert Jonsson, Umeå University, Sweden; Carola Wijklund-Hönnqvist, Umeå University, Sweden; Sweden; Tova Stenlund, Umeå University, Sweden; Sweden

**The effect of test format on perceived mental effort**
Leonora Coppens, Utrecht University, Netherlands; Mario de Jonge, University Utrecht, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Liesbeth Kester, Utrecht University, Netherlands

**Moderators of the Testing Effect: Type of Retrieval Practices Interacts with Interrelated Texts**
Tino Endres, University of Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany

**Testing the Testing Effect in Contextualized Learning: Effects of Retrieval during Story Reading**
Gesa van den Broek, Utrecht University, Netherlands; Eva Weissing, Utrecht University, Netherlands; Lieske Hulsse, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

### SYMPOSIUM: MEASURING AND SUPPORTING SELF-REGULATED LEARNING IN DIFFERENT CONTEXTS IN HIGHER EDUCATION

**Chairs**
Jacqueline Wong, Erasmus University Rotterdam, Netherlands; Felicitas Biewer, Maastricht University, Netherlands

**Organisers**
Hans Smoldersen, Antwerp University, Belgium; Michelle Taub, University of Central Florida, United States

**Discussant**
Inge Molenaar, Radboud University Nijmegen, Netherlands

**Investigating the Role of Students’ Preparation on the In-Class Learning Behavior: A SRL Perspective**
Hans Smoldersen, Antwerp University, Belgium; David Gijpsels, University of Antwerp, Belgium; Sven De Maeyer, University of Antwerp, Belgium

**Fostering Students’ Learning Strategies in Higher education – An Explanatory Mixed-Method Study**
Felicitas Biewer, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Pauline Aalten, Maastricht University, Netherlands; Mirjam ode Egbrink, Maastricht University, Netherlands

**Supporting Self-Regulated Learning in a Massive Open Online Course: Do Learners Benefit?**
Jacqueline Wong, Erasmus University Rotterdam, Netherlands; Martine Baars, Erasmus University Rotterdam, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands

**Using Multimodal Data to Detect Self-Regulatory Processes During Learning with a Multimedia-System**
Michelle Taub, University of Central Florida, United States; Robert Sawyer, North Carolina State University, United States; Megan J. Phoo, University of Central Florida, United States; James Laster, North Carolina State University, United States; Roger Azevedo, University of Central Florida, United States
### SINGLE PAPER: EDUCATIONAL EFFECTIVENESS

**Chair**
Jan Van Damme, KU Leuven, Belgium

**Student, teacher and classroom level correlates of sixth' grade students' listening skills**
Héleen Bourdaudhui, Ghent University, Belgium; Koen Aesaert, Ghent University, Belgium; Johan van Braak, Ghent University, Belgium

**The effect of Success for All on pro- and antisocial behavior of young students in elementary school**
Marj Veldman, University of Groningen, Netherlands; Simone Dooland, University of Groningen, Netherlands; Mariette Hingstman, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands; Tom Snijders, University of Groningen, Netherlands; Roel J. Bosek, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands

**Primary students’ participation in extracurricular activities in German all-day schools**
Wolfram Rollett, University of Education Freiburg, Germany; Karin Lossen, IFS / Technical University of Dortmund, Germany; Katja Tillmann, TU Dortmund University, Germany; Heinz Günter Holtappels, TU Dortmund University, Germany

### SINGLE PAPER: CONCEPTUAL CHANGE

**Chair**
Denise Gelber, Pontificia Universidad Católica de Chile, Chile

**How to promote epistemic change? Effects of reading and reflecting on resolvable controversies.**
Martin Kerwer, Leibniz-Institute for Psychology Information (ZPID), Germany; Tom Rosman, Leibniz Institute for Psychology Information, Germany

**Is natural number bias the unique reason of misunderstanding rational number size?**
Juan Manuel González-Forte, Universidad de Alicante, Spain; Ceneda Fernández, Universidad de Alicante, Spain; José Van Hoof, KU Leuven, Belgium; Wim Van Dooren, KU Leuven, Belgium

**Conceptual change challenges in medicine - from biomedical knowledge to clinical reasoning**
Ilona Stålevik, University of Helsinki, Finland; Mirjamaja Mikilä-Erdmann, University of Turku, Finland; Michelle Chen, Arizona State University, United States

**Looking at Conceptual Development and Conceptual Change from a Complex Systems Framework**
Stella Vosniadou, Flinders University, Australia

### SINGLE PAPER: EDUCATIONAL THEORY AND STUDENT LEARNING

**Chair**
Jennifer Schwarze, RWTH Aachen University, Germany

**Implications of Competence-Based Education Approaches to Curriculum Policy-making**
Arend Tahiytsial, Norwegian University of Science and Technology, Norway; Daniel Sundberg, Linnaeus University, Sweden

**Blossoming in schools. On the flourishing of pupils and teachers**
Dorit de Ruyter, University of Humanistic Studies, Netherlands

**Linking Low-Stakes and High-Stakes Assessments over Person Ability Scores**
Martin J. Tomansk, University of Zurich, Switzerland; Laura A. Heblinger, University of Zurich, Switzerland; Stéphanie Berger, University of Zurich, Switzerland; Urs Moser, University of Zurich, Switzerland

**Building students’ collaborative knowledge work competence in upper secondary classrooms**
Minna Lakkula, University of Helsinki, Finland; Liisa Ilomäki, University of Helsinki, Finland; Hanni Muukkonen, University of Oulu, Finland; Auli Toom, University of Helsinki, Finland
### SINGLE PAPER: EDUCATIONAL POLICY

| Chair | Cheating Among International Students: A New Challenge to Universities in the Era of Globalization  
Perry Gao, Harvard University, United States; Arvid Nagel, University of Teacher Education St.Gallen, Switzerland  
Scaling up instructional innovations by collaboration between researchers and instructional leaders  
Anat Zohar, Hebrew University, Israel; Tova Michalsky, Bar-Ilan University, Israel; Yehudit Weinberger, Kibbutzim College of Education, Israel  
A Critical View on Quality of Life Policies in Education Systems  
Denis Francesconi, Danish School of Education, Denmark; Venka Simovska, Danish School of Education, Denmark |

### SINGLE PAPER: LEARNING ANALYTICS

| Chair | Predictive Analytics for Serious Games  
Michael Kickmeier-Rust, University of Teacher Education, Switzerland  
A learner dashboard and digital formative assessment approach for teamwork in Secondary schools  
Elizabeth Koh, National Institute of Education/Nanyang Technological University, Singapore; Singapore; Jennifer Tan, National Institute of Education/Nanyang Technological University, Singapore; Singapore; Yi-Huan Tee, National Institute of Education/Nanyang Technological University, Singapore, Singapore; Shiviya Suresh, National Institute of Education/Nanyang Technological University, Singapore, Singapore |

### SINGLE PAPER: TEACHING AND INSTRUCTIONAL DESIGN

| Chair | Teaching historical agency. Examining changes in students’ perception of agency in past and present  
Marjolein Wike, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Karel Van Nieuwenhuyse, KU Leuven, Belgium  
Latent class analysis in preschool teachers that received and implemented new vocabulary instruction  
Paulina Pizarro, Universidad Diego Portales, Chile  
Promoting Self-Regulated Learning in Primary School: Impact of an Educational Program  
Estrella Fernández Alba, University of Oviedo, Spain; Elián Tueron Herrero, University of Oviedo, Spain; Rebeca Cerezo, University of Oviedo, Spain; Cristina Gómez Santos, University of Oviedo, Spain  
Generative Learning vs. Retrieval Practice: The Cohesion and Elaboration of the Material Matters  
Julian Roelle, Ruhr-University Bochum, Germany; Matthias Nückles, University of Freiburg, Germany |

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**WEDNESDAY, 14 AUGUST 2019**
### SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS

**Chair**
Esther Canniru, University of Agder, Norway

**Boundary Conditions of the Seductive Details Effect: When the Perceived Relevance is Crucial**
Lisa Bender, University of Freiburg, Germany; Alexander Eitel, University of Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany

**Connecting text to pictures on a tablet device – can it support learning?**
Anne Schueker, Leibniz-Institut für Wissensmedien, Germany; Ann-Katrin Wesslein, University of Tübingen, Germany

**Cross-representational signaling fosters text-picture integration: Evidence from eye movements**
Erica de Vries, Université Grenoble Alpes, France; Mireille Betancourt, University of Geneva, Switzerland; Juliette Désirion, University of Geneva, Switzerland

**Adjunct questions with hints to pictures: Improving learning from text and pictures**
Julia Kollmer, University of Freiburg, Germany; Inga Frey, University of Freiburg, Germany; Alexander Eitel, University of Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany

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### SINGLE PAPER: COLLABORATIVE LEARNING

**Chair**
Molly Hammer, University of Tuebingen, Germany

**Group work as an arena for learning in STEM education: Negotiations of epistemic relationships**
Fredrik Rusk, Nord University, Norway; Wenche Renning, Nord University, Norway

**University students’ perceptions of scripted collaborative writing**
Kiira Heinonen, University of Jyvaskyla, Finland; Raaja Hämäläinen, University of Jyvaskyla, Finland

**Physiological synchrony and group performance in collaborative problem solving**
Muhterem Dindar, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Hanna Jarvenjärvi, University of Oulu, Finland

**Where’s the spark for group-level regulation in musical tasks?**
Tarja-Riitta Hurme, University of Turku, Finland; Marjaana Puurtinen, University of Turku, Department of Teacher Education, Finland; Hans Gruber, University of Regensburg, Germany

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### SINGLE PAPER: SECONDARY EDUCATION

**Chair**
Anneli Wölfl, Martin-Luther-Universität Halle-Wittenberg, Germany

**Feeling the strain: Investigating changes in science attitudes and career aspirations from age 10-19**
Julie Moote, University College London, United Kingdom; Louise Archer, Institute of Education, University College London, United Kingdom

**An overview of meta-analyses in STEM education: Analysis of scientific quality and moderating effects**
Andreas Hetmanek, Technical University of Munich (TUM), Germany; Maximilian Krogler, Technical University of Munich (TUM), Germany; Tina Sedel, Technische Universität München, Germany

**Predicting Students’ Drop out Behavior in Economics: When Economic Competencies matter**
Michael Jüttler, University of Konstanz, Germany

**Adaptive literacy instruction to enhance literacy skills and reading motivation in 7th graders.**
Mienke Driop, Radboud University, Nijmegen, Netherlands; Femke Scheltinga, ITTA, University of Amsterdam, Netherlands; Liza van den Bosch, Radboud University, Netherlands; Christel Dood, National Center for Language Education, Netherlands; Nicole Heister-Swart, National Center for Language Education, Netherlands; Eliane Segers, Radboud University Nijmegen / University of Twente, Netherlands
**SINGLE PAPER: DEVELOPING TEACHER EDUCATION FOR THE FUTURE**

**Chair**
Shiyu Liu, Ocean University of China, China

**Voices from the Frontline: What Teacher Educators Know and Believe about Evidence-Based Teaching**
Despoina Georgiou, Ludwig Maximilian University, Germany; Anne Wiesbeck, TUM School of Education, Germany; Tina Seidel, Technische Universität München, Germany

**Pre-Service Teachers’ Use of Learning Progressions: Contribution to Research-Based Teacher Education**
Alícia Alonzo, Michigan State University, United States; Michelle Woolen, Michigan State University, United States

**Looking for potential: How student selection predicts student teachers’ achievement?**
Marko Lähteenmäki, University of Turku, Finland; Mirjamaja Mikkia-Erdmann, University of Turku, Finland; Anna Holmström, University of Turku, Department of Teacher Education, Finland; Anu Warinowski, University of Turku, Finland

**Replication study: Training diagnostic competence using problem-based learning with text-based cases**
Alexander Wedel, TU Berlin, Germany; Christin R. Müller, Independent researcher, Germany; Jan Plötsch, TU Berlin, Germany; Angela Ittel, TU Berlin, Germany

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**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION**

**Chair**
Sanna Väisänen, University of Eastern Finland, Finland

**Mechanisms of effective feedback: a realist synthesis of feedback interventions**
Rola Ajave, Deakin University, Australia; Margaret Bearman, Deakin University, Australia; David Boud, University of Technology Sydney; Deakin University, Australia; Jaclyn Broadbent, Deakin University, Australia; Fiona Kent, Monash University, Australia; Joana Tai, Deakin University, Australia

**The patterns of self-assessment in different phases of the learning process**
Zi Yan, The Education University of Hong Kong, Hong Kong

**How Do Personal Beliefs Affect the Critical Dealing with Information in a Performance Assessment?**
Olga Zlatkin-Trotschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Jana Jurisch, Lehrstuhl für Wirtschaftspädagogik, Johannes Gutenberg-Universität Mainz, Germany; Marie-Theres Nagel, Johannes Gutenberg University Mainz, Germany; Susanne Schmidt, Johannes Gutenberg-Universität Mainz, Germany; Richard Shavelson, Stanford University, United States; Klaus Beck, Johannes Gutenberg Universität, Germany; Dimitri Molotov, Humboldt-University Berlin, Germany

**Course designs that cater for productive feedback: exploring feedback in practice**
Rachelle Estohazy, University of Oslo, Norway; Monika Nerland, University of Oslo, Norway; Crina Dansa, University of Oslo, Norway

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**SINGLE PAPER: CULTURAL DIVERSITY, ATTITUDES AND BELIEFS**

**Chair**
Malba Barahona, Pontificia Universidad Catolica de Valparaíso, Chile

**Primary School Teachers’ Personal Resources and the Quality of Inclusive Learning Processes**
Ganze Goerel, Paderborn University, Germany; Frank Helsmich, Paderborn University, Germany

**Mathematics and science teacher’s voice on argument based teaching and learning**
Ida Kuklansky, Ruppin Academic Center, Israel

**Silences in a climate of voicing: Teachers’ perceptions of silencing sensitive historical issues**
Geertrui M. Savenije, University of Amsterdam, Netherlands; Tsahir Goldberg, University of Haifa, Israel

**Match of Acculturation Orientations of Teachers and Students and Students’ Educational Success**
Andrea Haenni Hoti, University of Teacher Education of Lucerne, Switzerland; Christine Wolfgramm, University of Teacher Education Zurich, Switzerland; Marianne Müller, Institute for Diversity Education, University of Teacher Education, Switzerland; Switzerland; Buhlozer Alois, Institute for Diversity in Education, Switzerland
### SINGLE PAPER: PARENTAL INVOLVEMENT IN LEARNING

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<tr>
<td>Stefan Ufer, Ludwig Maximilians-Universität (LMU), Germany</td>
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<td>Differences between fathers and mothers in shared reading interactions: effects of child gender</td>
<td>Roel van Steensel, Erasmus University Rotterdam, Netherlands; Sanneke de la Rie, Rotterdam University of Applied Sciences, Netherlands; Kim Vlot, Erasmus University Rotterdam, Netherlands; Nicole Lucassen, Erasmus University Rotterdam, Netherlands</td>
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<td>Students’ and parents’ beliefs about failure and control matter: reducing the failure dynamic.</td>
<td>Elizabeth R Peterson, University of Auckland, New Zealand</td>
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<td>Effects of family literacy programs for at-risk children: A meta-analysis</td>
<td>Suzanne Fikrat-Weers, Erasmus University Rotterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands; Wichor Bramer, Erasmus MC, Netherlands; Lidia Arends, Erasmus University Rotterdam, Netherlands</td>
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<tr>
<td>Parent-child book-sharing in immigrant families and children’s first-language development</td>
<td>Veslemøy Rydland, University of Oslo, Norway; Vibeke Grever, University of Oslo, Norway</td>
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### Session M: 1
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

**SYMPOSIUM: STUDYING STUDENT ENGAGEMENT IN AUTHENTIC LEARNING SETTINGS: MEASUREMENT, PREREQUISITES, CONSEQUENCES**

**Chair**  
Sebastian Korinth, Goethe University Frankfurt; Institute of Psychology, Germany

**Organisers**  
Franziska Baier, Goethe-Universität Frankfurt, Germany; Mareike Kunter, Goethe-Universität Frankfurt, Germany

**Discussant**  
Julien Mercier, University of Quebec in Montreal, Canada

**Hand-raising and successful learning. Relations to cognitive engagement and academic achievement.**  
Ricardo Böheim, Technical University of Munich, Germany; Maximilian Knooger, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

**Situational engagement in emotionally supportive classrooms**  
Sanni Pöysä, University of Jyväskylä, Finland; Kati Vasalampi, University of Jyväskylä, Finland; Joona Mustika, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Anna-Maja Poikkeua, University of Jyväskylä, Finland

**Leveraging a wearable electrodermal activity sensor to study engagement in a physics course**  
Héctor Javier Pijana Diaz, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Paul A. Kirschner, Open University of the Netherlands, Netherlands

**Effects of content relevance and student traits on engagement as measured by EEG alpha band activity**  
Franziska Baier, Goethe-Universität Frankfurt, Germany; Sebastian Korinth, Goethe University Frankfurt; Institute of Psychology, Germany; Christian Fiebach, Goethe University Frankfurt, Germany; Mareike Kunter, Goethe-Universität Frankfurt, Germany

### Session M: 2
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

**SYMPOSIUM: THE RELATION BETWEEN TEACHER-STUDENT INTERACTION IN CLASSROOM DISCOURSE AND LEARNING OUTCOMES**

**Chair**  
Ilonca Hardy, Goethe-Universität Frankfurt, Germany

**Organisers**  
Ilonca Hardy, Goethe-Universität Frankfurt, Germany; Jasmin Decristan, University of Wuppertal; IDeA-Research Center, Germany

**Discussant**  
Janneke van de Pol, Utrecht University, Netherlands

**Participation in classroom discussion: conditions and consequences for students’ achievement**  
Franziska Locher, Otto-Friedrich-University of Bamberg, Germany; Bianka Troll, Leuphana Universität Lüneburg, Germany; Jasmin Decristan, University of Wuppertal; IDeA-Research Center, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany; Eva Lena Heide, Goethe-Universität Frankfurt, Germany; Csaba Kunucz, Freie Universität Berlin, Germany; Mareike Kunter, Goethe-Universität Frankfurt, Germany

**Effects of contingent support in primary science classroom discourse**  
Ilonca Hardy, Goethe-Universität Frankfurt, Germany; Susanne Mannel, Goethe University Frankfurt am Main, Germany; Nicola Meschede, University of Muenster, Germany

**How does changed quality of classroom discussions affect students’ participation and motivation?**  
Miriam Moser, University of Fribourg, Switzerland; Matthias Zimmermann, University of Fribourg, Switzerland; Anke Wischgoll, University of Fribourg, Switzerland; Kurt Reusser, University of Zurich, Switzerland; Christine Pauli, University of Fribourg, Switzerland

**Mono- & multilingual students’ participation and teachers’ scaffolding in science classroom discourse**  
Anika Bürgemeister, University of Leipzig, Germany; Jasmin Rashad, University of Leipzig, Germany; Henrik Saabach, University of Leipzig, Germany; Kim Lange-Schubert, University of Leipzig, Germany
### SYMPOSIUM: TASK-ORIENTED READING: CONDITIONS FOR LEARNING FROM TEXTS IN EDUCATIONAL CONTEXTS

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<tr>
<th>Chair</th>
<th>Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands</th>
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<td>Organisers</td>
<td>Mariaka Okkinga, Rotterdam University of Applied Sciences, Netherlands; Jolique Keistra, Radboud University, Netherlands</td>
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<tr>
<td>Discussant</td>
<td>Nadine Spörer, University of Potsdam, Germany</td>
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<tr>
<td>Effects of text availability and question format on readers’ processing and learning</td>
<td>Maria-Angeles Serrano, University of Valencia, Spain; Eduardo Vidal-Abarca, Universidad de Valancia, Spain</td>
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<td>Fostering secondary school students’ text-learning strategy use through a strategy-focused program</td>
<td>Amalie Rogiers, Ghent University, Belgium; Emmeline Merchie, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<td>A Technology-Enhanced Learning Environment for Task-Oriented Reading in Groups</td>
<td>Mariaka Okkinga, Rotterdam University of Applied Sciences, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands</td>
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<td>Reading strategies enactment: the influence of task complexity on task-oriented reading</td>
<td>Jolique Keistra, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Reel van Steensel, Erasmus University Rotterdam, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands</td>
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### SYMPOSIUM: CONTEXTUAL INFLUENCES ON TEACHER MOTIVATIONS, SELF-EFFICACY, AND INSTRUCTIONAL & WELLBEING OUTCOMES

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<th>Chair</th>
<th>Helen Watt, University of Sydney, Australia</th>
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<td>Discussant</td>
<td>Einar Skalvik, Norwegian University of Science and Technology, Norway</td>
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<tr>
<td>Motives to choose a teaching career and burnout development during the first 10 years of service</td>
<td>Burkhard Grievesz, University of Salzburg, Austria; Helen Watt, University of Sydney, Australia; Paul Richardson, Monash University, Australia</td>
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<td>Influences Among Teachers’ Self-Efficacy, Behavior and School Contexts Into Mid-Career</td>
<td>Rebecca Lazardides, University of Potsdam, Germany; Helen Watt, University of Sydney, Australia; Paul Richardson, Monash University, Australia</td>
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<td>Influences on Beginning Teachers’ Motivations, Reported Instruction and Burnout until Mid-Career</td>
<td>Helen Watt, University of Sydney, Australia; Paul Richardson, Monash University, Australia</td>
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<td>For Better and for Worse: School Principal Influences on Teachers’ Achievement Goals and Instruction</td>
<td>Ruth Butler, Hebrew University of Jerusalem, Israel; Limor Shibaz, Psycho-Educational Services, Rehovot, Israel</td>
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### SYMPOSIUM: EXPLORING THE DEVELOPMENT OF SELF-EFFICACY: AN INTERACTIVE, INTERNATIONAL SYMPOSIUM

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<tr>
<th>Chair</th>
<th>Ellen Usher, University of Kentucky, United States</th>
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<tr>
<td>Discussant</td>
<td>Sharon Zumbrunn, Virginia Commonwealth University, United States</td>
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<td>Self-efficacy of early career teachers: Beyond the first year ‘reality shock’</td>
<td>Sindu George, Monash University, Australia; Paul Richardson, Monash University, Australia; Helen Watt, University of Sydney, Australia</td>
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<td>Gender Differences and Roles of Two Competence Beliefs in Predicting Post-College Outcomes</td>
<td>Kristy Robinson, Michigan State University, United States; Anthony Perez, Old Dominion University, United States; Anamaria White-Levatich, Old Dominion University, United States; Lisa Linnenbrink-Garcia, Michigan State University, United States</td>
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<td>Reading Self-Efficacy Development: A Longitudinal Analysis of Self-Efficacy and Its Sources</td>
<td>Eija Rääkkönen, University of Jyväskylä, Finland; Mikko Aro, University of Jyväskylä, Finland; Pirkko Peura, University of Jyväskylä, Finland; Tuula Aro, University of Jyväskylä, Finland; Ellen Usher, University of Kentucky, United States; Helena Viholainen, University of Jyväskylä, Finland; Tuire Koponen, University of Jyväskylä, Finland</td>
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<tr>
<td>Stimulating students’ self-efficacy for writing: Lessons from a two-iteration intervention study</td>
<td>Fien De Smedt, Ghent University, Belgium; Steve Graham, Arizona State University, United States; Hilde Van Keer, Ghent University, Belgium</td>
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### SYMPOSIUM: STATE-OF-THE-ART PROCESS MEASURES OF STUDENT AND TEACHER EMOTIONS IN THE CLASSROOM SETTING

**Chair**  
Monika Donker, Utrecht University, Netherlands

**Discussant**  
Reinhard Pekrun, Ludwig-Maximilians-Universität, Germany

**Control antecedents and achievement effects of test anxiety components: An intra-individual approach**  
Anna-Lena Roos, University of Konstanz, Germany; Thomas Goetz, University of Konstanz, Germany; Maike Krannich, University of Zurich, Switzerland

**What do anxious students look at during real-world mathematics problem-solving?**  
Nora McIntyre, University of York, United Kingdom; Enrique García Moreno-Esteva, University of Helsinki, Finland; Eeva Haataja, University of Helsinki, Finland; Mika Toivanen, University of Helsinki, Finland; Maarit Hannula, University of Helsinki, Finland

**Teachers’ and Learners’ Emotional Experiences in Class: Using Automated Facial Action Coding**  
Anton Marx, Ludwig Maximilians-Universität, Germany; Anne Christiane Franzel, University of Munich, Germany; Reinhard Pekrun, Ludwig Maximilians-Universität, Germany; Corinna Rock, Ludwig Maximilians-Universität (LMU), Germany; Milto Müller, Ludwig-Maximilians-Universität (LMU), Germany

**Teachers’ Physiological Arousal during Teacher-Student Interaction as Predictor of Teacher Emotions**  
Monika Donker, Utrecht University, Netherlands; Tim Mainhard, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

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### SYMPOSIUM: THE EFFECT OF EDUCATIONAL GAMES ON COGNITIVE AND NON-COGNITIVE PREDICTORS OF EARLY MATH ABILITIES

**Chair**  
Delphine Sasanguie, KU Leuven, Belgium

**Organiser**  
Fien Depaes, KU Leuven, Belgium

**Discussant**  
Judith ter Vrugte, University of Twente, Netherlands

**The early development and training of ordering skills, and their relationship with maths abilities.**  
Fien Depaes, KU Leuven, Belgium; Kinga Morsanyi, Queen's University Belfast, United Kingdom; Jort Peters, KU LEUVEN, Belgium; Stefanie Vanbèrcalaere, KU Leuven, Belgium; Patrick O'Connor, Queen's University, Belfast, Belgium; Delphine Sasanguie, KU Leuven, Belgium

**The effect of an adaptive game on cognitive and non-cognitive factors in young children.**  
Stefanie Vanbèrcalaere, KU Leuven, Belgium; Katrion Van den Bergh, KU Leuven KULAK, Belgium; Frederik Commile, KU Leuven KULAK, Belgium; Delphine Sasanguie, KU Leuven, Belgium; Bert Reynvoet, KU Leuven, Belgium; Fien Depaes, KU Leuven, Belgium

**The predictive value of enumeration abilities for mathematical performance.**  
Brenda Jansen, University of Amsterdam, Netherlands

**Understanding dyscalculic children’s response to computer-based training.**  
Christin Schwank, TU Dortmund University, Germany; Jörg Tobias Kuhn, Technical University Dortmund, Germany; Vera Dehmelt, University of Muenster, Germany; Julia Radatz, University of Muenster, Germany; Heinz Holling, University of Muenster, Germany; Christian Dobel, Friedrich Schiller University, Jena, Germany
<table>
<thead>
<tr>
<th>Session M: 8</th>
<th>Time: 08:30-10:00</th>
<th>Location: Lecture Hall - H10</th>
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<tbody>
<tr>
<td><strong>SYMPOSIUM: NEUROCOGNITIVE ORIGINS OF LEARNING DISORDERS</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Michael Artur Skobe, Max Planck Institute for Human Cognitive and Brain Sciences, Germany</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Michael Artur Skobe, Max Planck Institute for Human Cognitive and Brain Sciences, Germany</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Bert De Smedt, KU Leuven, Belgium</td>
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<tr>
<td><strong>The neurobiological predisposition for developing dyslexia</strong></td>
<td>Ulrike Kuhl, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Indra Kraft, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Gesa Schaad, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Liane Döbr, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Jens Brauer, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Nicole Neef, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Ivonne Czepezauer, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Bent Müller, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Arndt Wilke, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Holger Kirsten, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Frank Emmrich, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Johannes Bolzke, Fraunhofer Institute for Cell Therapy and Immunology, Germany; Angela Friederici, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Michael Artur Skobe, Max Planck Institute for Human Cognitive and Brain Sciences, Germany</td>
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<tr>
<td><strong>Traces of dyslexia in the auditory cortex</strong></td>
<td>Michael Artur Skobe, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Pierre-Louis Bazin, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Robert Trampel, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Andreas Schäfer, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Claudia Männel, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Katharina von Kriegstein, Max Planck Institute for Human Cognitive and Brain Sciences, Germany; Angela Friederici, Max Planck Institute for Human Cognitive and Brain Sciences, Germany</td>
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<tr>
<td><strong>Growing up with dyscalculia – how does the numerical brain develop</strong></td>
<td>Ursula McCluskey, University Children's Hospital, Switzerland; Michael von Aster, Clinic for Child and Adolescent Psychiatry, German Red Cross Hospitals, Berlin, Germany; Ruth Tuura O’Gorman, Children’s Hospital Zurich, Switzerland; Karin Kucian, University Children’s Hospital, Switzerland</td>
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<tr>
<td><strong>Cognitive correlates of early reading and early arithmetic in 5-year olds</strong></td>
<td>Kiran Vanbinst, KU Leuven, Belgium; Elsje van Bergen, VU Amsterdam, Netherlands; Pol Ghesquiere, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium</td>
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<th>Session M: 9</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S14</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: ATTITUDES AND BELIEFS IN PRIMARY EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Linde van der Westhuizen, University of Luxembourg, Luxembourg</td>
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<tr>
<td><strong>Personal epistemologies of elementary school students around the world</strong></td>
<td>Florian Feucht, <a href="http://www.Thinkinghabitats.com">www.Thinkinghabitats.com</a>, United States; Regina Rotstein, University of Toledo, United States; Kristen Porter, Mercy College, United States; Andreas Acher, Martin Luther University Halle-Wittenberg, Germany; Valerie Fröde, Université Toulouse - Jean Jaurès, France; Yue Gu, University of Toledo, United States; Andrea Mohme, School System Luebeck, Germany; Elizabeth Curtis, Queensland University of Technology, Australia; Jo Lunn Brownlee, Queensland University of Technology, Australia</td>
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<td><strong>Attitudes to Mathematics in Young English and Chinese Children</strong></td>
<td>Ann Dowker, University of Oxford, United Kingdom; Olivia Cheriton, Magdalen College, Oxford University, United Kingdom; Rachel Horton, St Anne's College, Oxford University, United Kingdom; Winfried Mark, Hong Kong University, Hong Kong</td>
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<td><strong>First grade reader self-concept – interactions with initial self-concept and reading intervention</strong></td>
<td>Bente Walgermo, University of Stavanger, Norway; Jan Fjøsanger, Child and youth studies, Canada; Oddny Judith Solheim, The Norwegian Reading Centre, Norway</td>
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<td><strong>Prerequisites of Primary School Students’ Pro-social Behavior in the Inclusive Classroom</strong></td>
<td>Marwin Felix López, Paderborn University, Germany; Frank Heinrich, Paderborn University, Germany</td>
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<tr>
<th>Session M: 10</th>
<th>Time: 08:30-10:00</th>
<th>Location: Seminar Room - S04</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: MOTIVATION AND EMOTION</strong></td>
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<td><strong>Chair</strong></td>
<td>Ian A.G. Wilkinson, University of Auckland, New Zealand</td>
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<td><strong>Self-Efficacy for Instructional Leadership: Relation with Engagement and Emotional Exhaustion</strong></td>
<td>Cecilia Skavlie, Norwegian University of Science and Technology, Norway</td>
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<tr>
<td><strong>Need Satisfaction and Achievement Goals of University Faculty for Teaching: A Multinational Study</strong></td>
<td>Martin Daumiller, University of Augsburg, Germany; Raven Rinas, Augsburg University, Germany; Markus Dresel, University of Augsburg, Germany</td>
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<td><strong>Processes of Students’ Effort Exertion, Competence Beliefs and Motivation</strong></td>
<td>Lars-Erik Malmborg, University of Oxford, United Kingdom; Andrew Martin, University of New South West, Australia</td>
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<td><strong>Do expectancies and intrinsic value predict each other across learning situations?</strong></td>
<td>Julia Dietrich, Friedrich Schiller University of Jena, Germany; Jaana Viljaranta, University of Eastern Finland, Finland; Asko Tolvanen, University of Jyväskylä, Finland; Julia Moeller, Universität Leipzig, Chad; Baerbel Kröcke, University of Jena, Germany</td>
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### Session M: 11 - Thursday, 15 August 2019 - 08:30-10:00 - Seminar Room - S06

**SINGLE PAPER: MATHEMATICS AND CONCEPTUAL CHANGE**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Paper Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Bram De Wever, Ghent University, Belgium</td>
<td>The role of intuition and inhibition in fraction magnitude comparison</td>
<td>Jo Van Hoof, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Wim De Neys, Université Paris Descartes, Paris, France; Wim Van Dooren, KU Leuven, Belgium</td>
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<td>Response time patterns when comparing fractions and when comparing divisions</td>
<td>David Maximiliano Gomez Ropas, Universidad de O'Higgins, Chile; Pablo Darnell, University of Chile, Chile</td>
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<td>Natural number bias when comparing fraction magnitudes: strategy use and problem features</td>
<td>Vijay Marupudi, UNIVERSITY OF WISCONSIN-MADISON, United States</td>
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<td>How robust are learners’ misconceptions of fractions? An intervention study using refutation</td>
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<td>Jo Van Hoof, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Wim Van Dooren, KU Leuven, Belgium</td>
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### Session M: 12 - Thursday, 15 August 2019 - 08:30-10:00 - Seminar Room - S13

**SINGLE PAPER: COMPUTER-ASSISTED LEARNING AND MATHEMATICS**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Paper Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Tarja-Riitta Hurme, University of Turku, Finland</td>
<td>Teacher’s gestures scaffold learning in collaborative problem solving but are students looking?</td>
<td>Annina Koskinen-Salmia, University of Helsinki, Finland; Eeva Haataja, University of Helsinki, Finland; Mikka Toivanen, University of Helsinki, Finland; Markku Hannula, University of Helsinki, Finland</td>
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<td>Impact of a digital device on mathematics achievement in primary school: a randomized trial.</td>
<td>Maron Laurent, Université Grenoble Alpes, France; Pascal Bressou, Université Grenoble Alpes, France; Pierre Tchounikine, Université Grenoble Alpes, France</td>
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<td>The Powerbar – Effects of a resource-restricting tool while solving spatial tasks on mobile</td>
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<td>devices</td>
<td>Michael Montag, Bauhaus-University of Weimar, Germany; Sven Bertel, Renssela University of Applied Sciences, Germany; Björn B. DeKoning, Erasmus University Rotterdam, Netherlands, Netherlands; Steff Zander, University of Applied Sciences Magdeburg-Stendal, Germany</td>
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<td>Working with a Mathematics Teacher to Teach with Technology: A case in Turkey</td>
<td>Ipek Saralar, University of Nottingham, United Kingdom; Shaaron Ainsworth, University of Nottingham, United Kingdom; Geoff Wake, University of Nottingham, United Kingdom</td>
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### Session M: 13 - Thursday, 15 August 2019 - 08:30-10:00 - Seminar Room - S09

**SINGLE PAPER: TEACHING APPROACHES AND INSTRUCTION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Paper Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Tamal Kumar De, KU Leuven, Belgium</td>
<td>Fostering learning strategies to support self-regulated learning: A Multilevel Analysis</td>
<td>Andrea Vogt, Ulm University, Germany; Tina Seufert, Ulm University, Germany</td>
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<td>Mentoring relationship in internships of teacher education</td>
<td>Miriam Gruenberg, Otto-Friedrich-Universität Bamberg, Germany; Anja Winkler, University of Bern, Switzerland</td>
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<td>Embodiment as a Teaching Practice in High School Level Physics</td>
<td>Yael Kashtan, Levinsky College of Education, Israel; Einat Gil, Levinsky College of Education, Israel; Roni Mualem, Levinsky College of Education, Israel</td>
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<td>Storytelling in taking over a perspective in order to support an identity for the environment</td>
<td>Florian Rietz, University of Teacher Education St.Gallen, Switzerland; Avril Nagel, University of Teacher Education St.Gallen, Switzerland; Nicolas Robin, Fachdidaktik Naturwissenschaften, Switzerland</td>
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</tbody>
</table>
### Session M: 14
**Time:** 08:30-10:00  
**Location:** Seminar Room - S15

#### SINGLE PAPER: TEACHING APPROACHES

| Chair                                                                 | Exploring the effects of teaching reading strategies on student L2 reading skills; a one year study  
<table>
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<tr>
<td>Vera Busse, University of Koblenz and Landau, Germany</td>
<td>Deborah Yap, University of Utrecht, Netherlands; Rick de Graaff, IVLOS, Universiteit Utrecht, Netherlands; Huub van den Bergh, University Utrecht, Netherlands</td>
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<td>Guided play in early years education: From observation to educational intervention</td>
<td>Valeska Grau, Pontificia Universidad Catolica de Chile; Chile; Amaya Lorca de Urate, Pontificia Universidad Catolica de Chile, Chile; Macarena Perez, Pontificia Universidad Catolica de Chile, Chile; Daniela Jadue, Universidad de O’Higgins, Chile; Katherine Strasser, Pontificia Universidad Catolica de Chile, Chile; David Preisa, Pontificia Universidad Catolica de Chile, Chile; Magdalena Muller, Pontificia Universidad Catolica de Chile, Chile</td>
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<td>Teaching democratic values through classroom discussions on controversial issues</td>
<td>Saskia Opalinski, University of Potsdam, Germany; Katja Scharenberg, University of Education Freiburg, Germany</td>
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### Session M: 15
**Time:** 08:30-10:00  
**Location:** Seminar Room - S03

#### SINGLE PAPER: META-ANALYSIS, METHODS AND TOOLS

| Chair                                                                 | Do we overestimate teachers' judgment achievement? A critical systematic overview and re-analysis  
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<tr>
<td>Annabel Watson, University of Exeter, United Kingdom</td>
<td>Esther Kaufmann, University of Education Zurich / University of Zurich, Switzerland</td>
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<tr>
<td>Does Peer Assessment Improve Academic performance? A Meta-analysis of Experimental Studies</td>
<td>Therese N. Hopfenbeck, University of Oxford, United Kingdom; Kit Double, University of Oxford, United Kingdom; Joshua McGarrie, University of Oxford, United Kingdom</td>
</tr>
<tr>
<td>Scaffolding to Develop Diagnostic Competences in Medical and Teacher Education: A Meta-analysis</td>
<td>Olg Chernikova, Ludwig Maximilian University, Germany; Nicole Heitzmann, University Munich &amp; Clinics of University Munich, Germany; Maximilian Christian Fink, Institute for Medical Education, Klinikum der Universität München, Germany; Venance Timothy, Ludwig Maximilians-Universität (LMU), Tanzania, United Republic of; Tina Seidel, Technische Universität München, Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany</td>
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<tr>
<td>Effect of school entry age on student academic outcomes: Evidences from Austria and Switzerland</td>
<td>Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland; Andrea B. Erzinger, University of Berne, Switzerland; Daniel Paausch, Federal Institute for Educational Research, Innovation and Development of the Austrian School System (BIFIE), Austria</td>
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### Session M: 16
**Time:** 08:30-10:00  
**Location:** Seminar Room - S01

#### SINGLE PAPER: CURRENT CHALLENGES IN EDUCATION POLICY FOR ECEC FOR 0 TO 3-YEAR-OLDS

| Chair                                                                 | Early childhood education and care in Portugal: policies and families’ reasons for attendance  
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<tr>
<td>Francesca Suter, University of Zurich, Switzerland</td>
<td>Tágora Freire, University of Porto, Portugal; Manuela Passarinho, Politécnico do Porto, Portugal; Joana Cadima, University of Porto, Portugal; Sílvia de Barros, Politécnico do Porto, Portugal; Carla Poixoto, Polytechnic Institute of Porto, Portugal; Verónica Coelho, Porto University, FPCE, Portugal; Ana Isabel Mota e Costa Pinto, University of Porto - Portugal, Portugal; Donna Bryant, Frank Porter Graham Child Development Institute, United States</td>
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<tr>
<td>Who are the non-users of institutional childcare in Germany?</td>
<td>Kerstin Lippert, German Youth Institute, Germany; Christian Alt, German Youth Institute, Germany; Susanne Kuger, German Youth Institute (DJI), Germany</td>
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<td>Implementation evaluation of the Finnish national core curriculum for ECEC</td>
<td>Marja-Kristina Lerkkanen, University of Jyväskylä, Finland</td>
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<td>Child care fees in Germany</td>
<td>Susanne Kuger, German Youth Institute (DJI), Germany; Franz Neuberger, German Youth Institute, Germany; Christian Alt, German Youth Institute, Germany</td>
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</table>
**Session M: 17**  
**Time: 08:30-10:00**  
**Location: Seminar Room - S02**

**SINGLE PAPER: EARLY CHILDHOOD EDUCATION**

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

**Initial differences in reading acquisition process according to socioeconomic status**  
Victoria Espinoza, Pontificia Universidad Católica de Chile, Chile; Catalina Santa Cruz, Pontificia Universidad Católica de Chile, Chile; Ricardo Rosas, Psychology, Chile

**Self-Regulatory Abilities at Kindergarten as Predictors of 4th Graders Mathematics Achievement**  
Ayse Cobanoglu, University at Buffalo, United States; Fahrettin Hasan Adagideli, Istanbul University-Cerrahpasa, Turkey

**Creating an instrument for measuring pedagogues’ role in basing children’s lifelong learning**  
Nikolet Takacs, University of Szeged, Hungary

**Designing Preschool Physical Learning Environments - The Children’s Voice**  
Netta Perry, Bar-Ilan University, Israel; Esther Ad-Japha, Bar-Ilan University, Israel; Ornit Spektor-Levy, Bar-Ilan University, Israel


**Session M: 18**  
**Time: 08:30-10:00**  
**Location: Seminar Room - S12**

**WORKSHOP: TEACHER AS DESIGNER: AN EVIDENCE-BASED MODEL TO STIMULATE TEACHER DESIGN WORK**

**Chair**  
Time Leaders, University of Education Freiburg, Germany

**Teacher as Designer: An evidence-based model to stimulate teacher design work**  
Lori Locket, University of Technology Sydney, Australia; Shirley Agostinho, University of Wollongong, Australia; Sue Bennett, University of Wollongong, Australia


**Session M: 19**  
**Time: 08:30-10:00**  
**Location: Seminar Room - S16**

**SINGLE PAPER: VOCATIONAL EDUCATION, LEARNING AND PROFESSIONAL DEVELOPMENT**

**Chair**  
Nanette Seago, WestEd, United States

**The Practice of Leadership: Exploring Six Paradoxes of Leadership**  
Angela de Jong, Oberon research institute / Utrecht University, Netherlands; Ditte Lockhorst, Oberon research institute, Netherlands; Renske de Klein, UMC Utrecht, Netherlands; Jan van Tarwijk, Utrecht University, Netherlands; Mirko Noordegraaf, Utrecht University, Netherlands; Ton Klein, Oberon, Netherlands

**Student-run hospital wards: Institutionalised workplace-learning opportunities for nursing students**  
Michael Goller, University of Bamberg, Germany; Bianca Steffen, University of Paderborn, Germany

**Educating for dynamic vocations: how to design responsive vocational education?**  
Loek Nieuwenhuis, HAN University of Applied Sciences, Netherlands; Haske van Vlokhoven, HAN University of Applied Sciences, Netherlands; Armio Hoeye, HAN University of Applied Sciences, Netherlands; Femke Nijland, Open University, Netherlands; Hester Smulders, oco, Netherlands

**Dealing with diverse student groups: Teaching practices of Icelandic VET teachers**  
Elsa Einadottir, University of Iceland


**Session N: 1**  
**Time: 10:15-11:45**  
**Location: Lecture Hall - H07**

**SIG INVITED SYMPOSIUM: SIG 25: HOW CAN PEER REVIEWING BE MADE FAIR FOR ALL THEORETICAL FRAMEWORKS IN EARLI AND BEYOND?**

**Chairs**  
Giuseppe Ritella, University of Helsinki, Finland; Antti Rajala, University of Helsinki, Finland

**Organisers**  
Antti Rajala, University of Helsinki, Finland; Rupert Wegener, University of Cambridge, United Kingdom; Giuseppe Ritella, University of Helsinki, Finland

**Discussant**  
Antti Rajala, University of Helsinki, Finland

**Dialogic problematization of peer reviewing in academic social science journals**  
Ana Marjanovic-Shane, Independent Scholar, United States; Eugene Matsuo, University of Delaware, United States

**Returning to dialogue on a higher level**  
Rupert Wegener, University of Cambridge, United Kingdom

**Dilemmas of peer review and the art of constructive criticism**  
Roger Saljö, University of Gothenburg, Sweden

**The challenge of bridging paradigms through editorial work**  
Gina Damsa, University of Oslo, Norway

**Peer review of technical quality of quantitative and qualitative research.**  
Lars-Erik Malmberg, University of Oxford, United Kingdom
### Session N: 2  
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H05  

**SIG INVITED SYMPOSIUM: SIG 22: EMOTIONAL INFLUENCES ON THE NEURAL MECHANISMS OF LEARNING**

**Chair**  
Sabine Peters, Universiteit Leiden, Netherlands

**Organisers**  
Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands; Sabine Peters, Universiteit Leiden, Netherlands

**Discussant**  
Lydia Krabbendam, Vrije Universiteit Amsterdam, Netherlands

- **Don't worry: Error monitoring of test-anxious students under performance pressure**  
  Frieder Schillinger, Technische Universität Dresden, Germany; Clemens Brunner, University of Graz, Austria; Bert De Smedt, KU Leuven, Belgium; Roland H. Grabner, University of Graz, Austria

- **Physiological mechanisms of the role of ability beliefs in effort, stress and failure attribution**  
  Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands; Smiddy Nieuwenhuis, VU University Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands

- **Decision-making enhances episodic memory via mesolimbic engagement**  
  Vishnu Murty, Temple University, United States

- **How emotion affects the learning-memory processes.**  
  Michiko Sakaki, University of Reading, United Kingdom

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### Session N: 3  
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H08

**SIG INVITED SYMPOSIUM: SIG 10: LEARNING AS MATERIAL FORMATION**

**Chair**  
Nathalie Muller Mirza, Université de Lausanne, Switzerland

**Organiser**  
Asa Makitalo, University of Gothenburg, Sweden

**Discussant**  
Alfredo Jornet Gil, University of Oslo, Norway

- **Designing Learning Experiences: An exploration of learning as material formation in fashion design**  
  Todd Niceonger, Virginia Tech, United States

- **Students’ dialogical reconstruction of experience: a sociomaterial perspective**  
  Elsa Cattaruzza, Institute of Psychology & Education, University of Neuchâtel, Switzerland; Antonio Iannaccone, University of Neuchâtel, Switzerland

- **How moments add up to lives: Flat CHAT assemblage, embodiment, and lifespan becoming**  
  Paul Prior, University of Illinois at Urbana-Champaign, United States

- **Textures of experience in professional practice: Learning from working with material formations**  
  Asa Makitalo, University of Gothenburg, Sweden

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### Session N: 4  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S09

**SINGLE PAPER: QUANTITATIVE METHODS IN EDUCATIONAL PSYCHOLOGY**

**Chair**  
Carmel Mestel, University of Melbourne, Australia

- **Choosing a study program: The role of school subject-specific motivational beliefs**  
  Julia Gorges, Bielefeld University, Germany

- **Academics’ epistemic stances and formative cultures**  
  Kathryn Bartmore-Aufflick, The University of Sydney, Australia; Peter C. Thomson, The University of Sydney, Australia

- **Emotional anticipation of the school-to-work transition: A latent profile analysis.**  
  Micháel Parmentier, Université Catholique de Louvain (UCL), Belgium; Thomas Pirsoul, Université Catholique de Louvain (UCL), Belgium; Frédéric Nils, Université catholique de Louvain (UCL), Belgium

- **Youth Purpose and Interest Development: A Middle School Science Intervention Strategy**  
  Jessica Summers, University of Arizona, United States; Lia Falco, University of Arizona, United States; Ashley Batchelor, University of Arizona, United States
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<th>Session N: 5</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S11</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: METACOGNITION</strong></td>
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<td><strong>Chair</strong></td>
<td>Dirk Tempelaar, Maastricht University, Netherlands</td>
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<td><strong>Mathematics Problem Solving in Primary Education: Self-perceived Performance and process</strong></td>
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<td>Estrella Fernandez Alba, University of Oviedo, Spain; Celestino Rodriguez, University of Oviedo, Spain; Débora Areces, University of Oviedo, Spain; Trinidad García, University of Oviedo, Spain</td>
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<td><strong>Searching for information in a text: the role of text structure, strategies and emotions in children</strong></td>
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<td>Elise Tornare, University of Poitiers, France; Anna Potocki, Université de Poitiers, France; Christine Ros, CeRCA UMR7295 Université de poitiers, France; Julie Ayrolles, University of Poitiers, France; Jean-Francois Rouet, University of Poitiers, France</td>
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<td><strong>Teaching quality as an interprofessional engagement for developing scientific thinking</strong></td>
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<td>Ines Langemeyer, Karlsruhe Institute of Technology, Germany</td>
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<td><strong>Children’s Metacognitive Skills on Math Equivalence Problems</strong></td>
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<td>Lindsey Nelson, Indiana University, United States; Emily Fyle, Indiana University, United States</td>
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<th>Session N: 6</th>
<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S06</th>
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</thead>
<tbody>
<tr>
<td><strong>SINGLE PAPER: MOTIVATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Penelope Watson, University of Auckland, New Zealand</td>
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<td><strong>Cultivating future researchers: motivating students for research as a first step towards success?</strong></td>
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<td>Floria van Blankenstein, Leiden University Medical Center, Netherlands; Belinda Ommering, Leiden University Medical Center, Netherlands; Friedo Dekker, Leiden University Medical Center, Netherlands</td>
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<td><strong>Need-supportive Teaching and Motivation of Gifted and Non-gifted Students in Regular Primary Schools</strong></td>
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<td>Lisette Hornstra, Utrecht University, Netherlands; Anouke Bakx, Fontys University, Radboud University, Netherlands; Sven Mathijsen, CBO Talent Development, Nijmegen, Netherlands; Jaap Denissen, Department of Developmental Psychology, Tilburg University, Netherlands</td>
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<td><strong>Developing Expectancy-Value Motivational Scale in Mathematics: A Comparative Approach</strong></td>
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<td>Jelena Radiscic, University of Oslo, Norway; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Ksenija Krstic, University of Belgrade, Serbia; Kaja Yang Hansen, University of Gothenburg, Sweden; Anu Laine, University of Helsinki, Finland; Rikka Mononen, University of Oslo, Norway; Aleksander Bacal, University of Belgrade, Serbia; Lourdes Mata, Instituto Universitário / CIE - ISPA (Research Center in Education), Lisbon, Portugal</td>
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<td><strong>Interplay Between Achievement Goals and Goal Structures: Effects on Achievement and Motivation</strong></td>
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<td>Anders Hoverberg, Umeå University, Sweden; Mikael Winberg, Umeå University, Sweden</td>
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<th>Time: 10:15-11:45</th>
<th>Location: Seminar Room - S07</th>
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</thead>
<tbody>
<tr>
<td><strong>SINGLE PAPER: QUANTITATIVE METHODS IN TEACHER PROFESSIONAL DEVELOPMENT</strong></td>
<td></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Deborah Yapp, University of Utrecht, Netherlands</td>
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<td><strong>Do Teachers Consider Advice? On the Acceptance of Computerized Expert Models</strong></td>
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<td>Esther Kaufmann, University of Education Zurich / University of Zurich, Switzerland; David V. Budescu, Fordham University, United States</td>
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<td><strong>Changing Today’s Higher Education with Flipped Classroom for the Future: Student Perception</strong></td>
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<td>Erikko Sointu, University of Eastern Finland, Finland; Teemu Valtosen, University of Eastern Finland, Finland; Jenni Kankaanpää, University of Eastern Finland, Finland; Laura Hirsto, University of Helsinki/ University of Eastern Finland, Finland; Kati Määtäla, University of Oulu, Finland</td>
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<td><strong>Results of an Evaluation Study of Vocational Teachers in the Field of Automation Technology</strong></td>
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<td>Pia Schäfer, TU Kaiserslautern, Germany; Felix Walker, Technical University of Kaiserslautern, Germany; Nico Link, TU Kaiserslautern, Germany</td>
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<td><strong>Educational knowledge and mentoring within traditional and alternative teacher training</strong></td>
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<td>Stefanie Morgenroth, University of Duisburg-Essen, Germany; Eva Anderson-Park, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany</td>
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### Session N: 8  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S01

**SINGLE PAPER: EARLY CHILDHOOD EDUCATION**

**Chair**  
Maartje Rajmakers, University of Amsterdam, Netherlands

**Mathematical Skills as a Predictor of Interest in Mathematics in the First Grade**  
Rikka Mononen, University of Oslo, Norway; Anna Tapola, University of Helsinki, Finland; Anita Lopez-Pedersen, University of Oslo, Norway; Hedda Wahl, University of Oslo, Norway

**Parental self-efficacy: its components and how it relates to background characteristics of families**  
Juliane Schünke, Freie Universität Berlin, Germany; Elisa Oppermann, Freie Universität Berlin, Germany; Franziska Cohen, Freie Universität Berlin, Germany; Yvonne Anders, Freie Universität Berlin, Germany

**Tomorrows Gender Education - Challenges for future Gender Perspectives in Early Childhood Education**  
Melanie Kubandt, University of Vechta, Germany

**Predictors of pro-social behaviors in children with disabilities in inclusive preschools**  
Vera Coelho, Porto University, FPCE, Portugal; Joana Cadima, University of Porto, Portugal; Catarina Grande, University of Porto, Portugal; Ana Isabel Mota Costa Pinto, University of Porto · Portugal, Portugal

### Session N: 9  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S13

**SINGLE PAPER: COGNITIVE SKILLS**

**Chair**  
Lan Yang, The Education University of Hong Kong, Hong Kong

**Seeing is not knowing. Detection errors do not explain poor performance in reading dental x-rays.**  
Katharina Scheiter, Leibniz Institut für Wissensmedien, Germany; Thérèse Eder, Leibniz Institut für Wissensmedien (IWM), Germany; Juliane Richter, Leibniz-Institut für Wissensmedien, Germany; Fabian Hueftig, Tübingen University Hospital Center for Dentistry, Oral Medicine, and Maxillofacial Surgery with Dental School, Tübingen, Germany, Germany; Constanze Kufel, Tübingen University Hospital Center for Dentistry, Oral Medicine, and Maxillofacial Surgery with Dental School, Tübingen, Germany, Germany

**Preparing Primary School Students for Acquiring Proportional Reasoning Ability**  
Christian Thurn, ETH Zurich, Switzerland; Daniela Nussbaumer, University of Applied Sciences of Special Needs Education, Switzerland; Ralph Schumacher, ETH Zurich, Switzerland; Elisabeth Stein, ETH Zurich, Switzerland

**Developing performance assessment for research on critical thinking**  
Heidi Hyttinen, University of Helsinki, Finland; Auli Toom, University of Helsinki, Finland

**The challenge of usability testing with a population with Williams syndrome**  
Sophie Bénard · Linh Quang, University of Geneva, France; Sandra Borny, University of Geneva, Switzerland; Kovijka Barinskova, University of Geneva, Switzerland; Julie Heiz, University of Geneva, Switzerland

### Session N: 10  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S03

**SINGLE PAPER: PSYCHOMETRICS, ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION**

**Chair**  
Judy M. Parr, University of Auckland, New Zealand

**Critical Thinking: A Within- and Cross-Cultural Rasch-based Construct Validity Study**  
Tine Nielsen, University of Copenhagen, Denmark; Inmaculada Martínez-García; University of Cádiz, Spain; Enrique Alastor, University of Seville, Spain

**Developing and Validating a Short-form Assessment of Conscientiousness Competencies**  
Patrik Franzen, University of Luxembourg, Luxembourg; Linde van der Westhuizen, University of Luxembourg, Luxembourg; Samuel Greif, University of Luxembourg, Luxembourg; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg; Christoph Niepel, University of Luxembourg, Luxembourg

**Validation of the Student Assessment for Learning Questionnaire (SAFL-Q) in upper primary school**  
Ron Pat El, Open University, Netherland; Dirk Hoek, Open University of the Netherlands, Netherland

**Accounting for DIF in cross-country comparisons: A trade-off between for model fit and invariance**  
Yasmine El Masri, University of Oxford, United Kingdom; David Andrich, University of Western Australia, Australia
**SINGLE PAPER: SPECIAL EDUCATIONAL NEEDS**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Educational Collaboration in Complex Diagnostic Processes</th>
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<tr>
<td>Jing Li, University of Cambridge, United Kingdom</td>
<td>Mathias Meijer, University of Bern, Switzerland</td>
</tr>
</tbody>
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**Accessibility, usability and acceptability of digital textbooks for visually impaired students**
Laetitia Castillain, University of Toulouse, France; Julie Lemané, University of Toulouse, France; Mustapha Mohajid, University of Toulouse, France

**Children’s cognitive development in inclusive education. Longitudinal study of arts interventions**
Mima Törnänen, University of Applied Sciences of Special Needs Education: Zürich; University of Helsinki, Switzerland; Tanja Linnavalli, University of Helsinki, Finland; Marja-Leena Junntunen, University of the Arts Helsinki, Finland; Eeva Arnttila, University of Arts, Helsinki, Finland, Finland; Mari Tervaniemi, University of Helsinki, Finland

“That's what the mother said...” - Parents’ experiences of co-operation with schools
Teija Koskela, University of Turku, Finland

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**SINGLE PAPER: GAME-BASED LEARNING**

<table>
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<tr>
<th>Chair</th>
<th>The RAIDING project: Designing a mobile game to promote arithmetic fluency</th>
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<tr>
<td>Christopher Anson, North Carolina State University, United States</td>
<td>Tim Jay, Sheffield Hallam University, United Kingdom</td>
</tr>
</tbody>
</table>

**An experimental study on gamifying vocabulary learning with a mobile language-learning app**
Muhammed Dindar, University of Oulu, Finland; Lei Ren, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland

**The Effect of Game-based Computational Thinking Workshops on Students' Computational Thinking Skills**
Nur Akkua Çakır, Middle East Technical University, Turkey; Murat Pert Çakır, Middle East Technical University, Turkey; Arianna Gaas, Drexel University, United States; Frank Lee, Drexel University, United States

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**SINGLE PAPER: INSTRUCTIONAL DESIGN**

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<th>Chair</th>
<th>Effects of Example and Problem Solving Sequence Length on Motivation and Learning</th>
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<td>Kerstin Baeuerlein, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland</td>
<td>Míloú van Harsel, Avans University of Applied Sciences / Utrecht University, Netherlands; Vincent Hoogerheide, Utrecht University, Netherlands; Peter Verhoeven, Erasmus University Rotterdam, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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**Learning by tracing on computer screens**
Paul Grens, The University of Sydney, Australia; Fang-Tzu Agnes Hu, The University of Sydney, Australia; Janette Bobis, The University of Sydney, Australia

**Scripting collaborative writing within a multi-shared visual workspace: a quasi-experimental study**
Anneleen Raes, KU Leuven, Belgium; Manbel Montero Perez, KU LEUVEN, ITEC, Belgium

**Developing creative thinking in mathematics and its impact on learning**
Victoria Quentinlu, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Sebastián Rivera, Pontificia Universidad Católica de Chile, Chile; Kevin Steinsapir, Pontificia Universidad Católica de Chile, Chile; Paulina Araya, Pontificia Universidad Católica de Chile, Chile; Benjamín Benavides, Pontificia Universidad Católica de Chile, Chile
## SINGLE PAPER: AT-RISK STUDENTS

**Chair**
Guillermo Solano-Flores, Stanford University, United States

**Struggling with academic career choices: relations with neural correlates of self-concept**
Laura van der Aar, Leiden University, Netherlands; Eveline Crone, Leiden University, Netherlands; Sabine Peters, Universiteit of Leiden, Netherlands

**Students’ perceptions and experiences of LGBTQ+ inclusion within UK secondary schools**
Charlotte Allen, University of Cambridge, United Kingdom

**Subject-specific task value profiles and well-being among students in Germany and Finland**
Heta Tuominen, University of Helsinki, Finland; Hanna Gaspard, University of Tübingen, Germany; Yi Jiang, East China Normal University, China; Markku Niemivirta, University of Oslo, Norway

## SINGLE PAPER: QUALITATIVE METHODS IN HIGHER EDUCATION

**Chair**
Maria Tsapali, University of Cambridge, United Kingdom

**University in the rear view mirror: Psychological needs in alumnis’ pleasant and unpleasant memories**
Stefan Janke, University of Mannheim, Germany; Melanie Alsmeyer, Universität Mannheim, Germany; Miriam Neßner, Universität Mannheim, Germany

**Impact of short-term international experiences on students’ academic engagement: One year later**
Yusuke Sakurai, Ochanomizu University, Japan

**Intended and Realised Interdisciplinarity: Experiences from the University of Copenhagen**
Katrine Lindvig, University of Copenhagen, Denmark

## SINGLE PAPER: TEACHING AND TEACHER EDUCATION

**Chair**
Ann Dowker, University of Oxford, United Kingdom

**Teacher learning in ‘multiblala’ schools: Perspectives to move beyond arbitrariness**
Nikolett Szelei, University of Lisbon, Portugal

**Searching for the missing link in coherence**
Esther Carminus, University of Agder, Norway; Kirsti Klette, University of Oslo, Norway; Karen Hamerness, American Museum of Natural History, United States

**FALKO-Geschichte: A PCK/CK-test of teacher competences in history education**
Jochan Kirchhoff, Universität Erfurt, Germany; Stefan Krauss, University of Regensburg, Germany

**A Critical Stance Towards Pedagogical Content Knowledge**
Thorsten Scheiner, Australian Catholic University, Australia
### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Arli Hakkarainen, University of Eastern Finland, Finland

**Teacher education and teachers’ valuations of theory and practice oriented professional development**
Folke Glastra, Leiden University, Netherlands; Cornelis de Brabander, Leiden University, Netherlands; Kim Stroet, Leiden University, Netherlands

**Teaching Examples and its Impact on Instruction Planning of Pre-Service Physical Education Teachers**
Tim Heemsoth, Universität Hamburg, Germany

**Teachers’ view on formative assessment – impact of experimental teaching with peer-assessment**
Iva Stuchlíková, University of South Bohemia Ceske Budejovice, Czech Republic; Iva Zlabíková, University of South Bohemia Ceske Budejovice, Czech Republic; Alena Hospesova, University of South Bohemia Ceske Budejovice, Czech Republic; Jan Petr, University of South Bohemia Ceske Budejovice, Czech Republic; Lukas Rokos, University of South Bohemia Ceske Budejovice, Czech Republic

**An ideological perspective of School principals’ perceptions as educational leaders**
Roni Reingold, Achva Academic College / Hadassah College of Education, Israel; Karen Dery, Achva Academic College, Israel

### SINGLE PAPER: MATHEMATICS AND MOTIVATION AND EMOTION

**Chair**
Lies Declercq, KU Leuven, Belgium

**The “Perfect” Lens: Effects of Perfectionism on Early Adolescents’ Math Self-Efficacy Development**
Xiao-Yin Chen, University of Kentucky, United States; Caleb Ford, University of Kentucky, United States; Ellen Usher, University of Kentucky, United States; Veronica Scott, University of Kentucky, United States

**Validation of the State- and Trait-Math Anxiety-Model**
Otbach Lars, Universität Duisburg-Essen, Germany; Moritz Herzog, University of Duisburg-Essen, Germany; Annemarie Fritz-Stratmann, University of Duisburg-Essen, Germany

**The Relation Between Working Memory and Inhibitory Control in Math Anxiety: A Meta-Analyses Study**
Patricia Freitas, Multidisciplinary Institute of Health, Brazil

**Profiles in mathematics achievement: Lessons from Japanese secondary schools**
Quint Oga-Baldwin, Waseda University, Japan; Luke Fryer, University of Hong Kong, Hong Kong

### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS

**Chair**
Yusuke Sakurai, Ohnomizu University, Japan

**Presentation of a short writing apprehension measure and its relationship with writing**
Teresa Limp, University of Porto, Portugal

**Biases in the Recognition of High Cognitive Ability by Teachers and Peers**
Jeroen Lavrijten, KU Leuven, Belgium; Karine Verschueren, KU Leuven, Belgium

**Unpacking Feedback Types and Modes: An Analysis of Student-Teachers’ Meaning-Making**
Michel Cabot, University of Oslo, Norway

**Developing evaluative judgements in large classes: Generic skills and Content knowledge**
Vivi Virtanen, University of Helsinki, Finland; Johanna Rämö, University of Helsinki, Finland; Jokke Häst, University of Helsinki, Finland
<table>
<thead>
<tr>
<th>Session</th>
<th>Time: 12:00-13:30</th>
<th>Location: Lecture Hall - H08</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: MOTIVATION</strong></td>
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<td><strong>Chair</strong></td>
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<td><strong>Growing Perceptions of Control reduce Dropout Risk and enhance Achievement - A Longitudinal Study</strong></td>
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<td><strong>Pre-Service Teacher Self-Efficacy in the Context of Practicum of Teaching</strong></td>
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<td><strong>Beyond the entity-incremental dichotomy: Different constructions of meaning systems</strong></td>
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<td><strong>Association of self-efficacy and achievement goals in university lecturers teaching</strong></td>
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<th>Session</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S11</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: QUALITATIVE METHODS IN RESEARCHER EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
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<td><strong>Design Characteristics of Play Areas and Children's Play Preferences</strong></td>
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<td><strong>Scaffolding a collaborative learning process in research ethics among novice researchers</strong></td>
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<td><strong>Doctoral students’ experiences of the ethics of supervision</strong></td>
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<td><strong>Research integrity as a core transversal academic career competence: Identifying expert learning</strong></td>
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<th>Session</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S09</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: INSTRUCTIONAL DESIGN AND EXPERIMENTAL STUDIES</strong></td>
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<td><strong>Chair</strong></td>
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<td><strong>Is your imagination sufficient? Effects of mental images on learning outcome and cognitive load</strong></td>
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<td><strong>The Influence of Background Music on Learners with varying Extraversion</strong></td>
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<td><strong>When does testing protect against forgetting? – Not when students have high mastery motivation.</strong></td>
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<td><strong>Does Socratic teaching foster learning?</strong></td>
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### Session O: 5  
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H10

#### SINGLE PAPER: MIXED-METHOD RESEARCH IN TEACHING AND INSTRUCTION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
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<tbody>
<tr>
<td>Michiel Voet, Ghent University, Belgium</td>
<td>Investigating Classroom Teachers' Development of Mathematical Task Implementation Quality</td>
<td>Engin Ader, Boğaziçi University, Turkey</td>
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<td>Teaching as a Clinical Profession: Revisiting the Medical Model of Professional Work in Teaching</td>
<td>Ayelot Becher, Ben-Gurion University of the Negev, Israel; Adam Leibstein, Ben-Gurion University of the Negev, Israel</td>
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<td>Does feedback by school leaders affect teachers' professional development and teaching quality?</td>
<td>Christopher Kellermann, Freie Universität Berlin, Germany; Max Nachbauer, Freie Universität Berlin, Germany; Holger Gaemperle, Freie Universität Berlin, Germany; Felix Tiet, Freie Universität Berlin, Germany</td>
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<td>Comparing self-perceived knowledge about classroom management to student misbehaviour</td>
<td>Sabine Schlag, University of Wuppertal, Germany; Sabine Glock, Bergische Universität Wuppertal, Germany</td>
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### Session O: 6  
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

#### SINGLE PAPER: EDUCATIONAL POLICY

<table>
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<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Sarah Marrs, Virginia Commonwealth University, United States</td>
<td>Happy teachers, happy schools</td>
<td>Kim Ouwehand, Erasmus University Rotterdam, Netherlands</td>
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<td>Teacher satisfaction in high poverty schools in Estonia, Georgia, and Latvia</td>
<td>William Smith, University of Edinburgh, United Kingdom</td>
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<td>New multilingual education policies in a country of old multilingual settlement</td>
<td>Adrian Lundberg, Malmö University, Sweden</td>
</tr>
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### Session O: 7  
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H09

#### SINGLE PAPER: EMOTION AND AFFECT

<table>
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<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Tsachri Goldberg, University of Haifa, Israel</td>
<td>Exploring groups' situational affective states during collaborative learning</td>
<td>Tiina Törmänen, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Kristina Kurki, University of Oulu, Finland</td>
</tr>
<tr>
<td></td>
<td>How do student learning prerequisites affect perceptions of supportive climate in ICT instruction?</td>
<td>Molly Hammar, University ofTuebingen, Germany; Kathleen Stürmer, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany; Benjamin Caspar Fauth, University of Tübingen, Germany</td>
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<td>Effects of process heterogeneity in collaborative learning with tablets</td>
<td>Armin Weinberger, Saarland University, Germany; Lara Johanna Schmitz, Saarland University, Germany; Dimitra Tsouvaltsi, Saarland University, Germany</td>
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<td>Achievement Emotions Predict the Collaborative Problem-Solving Performance of Adolescents</td>
<td>Jesus Camacho-Morles, The University of Melbourne, Australia; Gavin Slemp, The University of Melbourne, Australia; Lindsay Oades, The University of Melbourne, Australia; Lucy Morrish, The University of Melbourne, Australia; Claire Scollar, The University of Melbourne, Australia</td>
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</tbody>
</table>
### Session O: 8  12:00-13:30  Seminar Room - S16

**SINGLE PAPER: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION**

**Chair**  
Lois George, University of the West Indies, Mona Campus, Jamaica

**A Social Capital MOOC Design for the Delivery of High-Quality PD to Science Teachers**  
Susan Yoon, University of Pennsylvania, United States; Kate Miller, University of Pennsylvania, United States; Jooeun Shim, University of Pennsylvania, United States; Daniel Wandel, Massachusetts Institute of Technology, United States; Ilana Schoenfeld, Massachusetts Institute of Technology, United States; Emma Anderson, Massachusetts Institute of Technology, United States; David Reider, Education Design, United States

**Teachers, tablets, training - the acquisition of new skills in the use of mobile technologies**  
Lara Gerhards, University of Paderborn, Germany; Lukas Dehmel, University of Paderborn, Germany; Dorothea M. Meister, University of Paderborn, Germany

**Exploring Sex Differences in Visuospatial Cognition in the Context of Organic Chemistry**  
Pavlo Antonenko, University of Florida, Ukraine; Matthew Schnepe, University of Massachusetts, United States; Marc Pompun, University of Massachusetts, United States; Andreas Kel, University of Florida, United States; Kara Dawson, University of Florida, United States; Richard Lamb, SUNY Buffalo, United States; Koh Do Hyong, University of Massachusetts, United States; Andrea Burgess, University of Florida, United States

**Middle-Schoolers’ Attitudes To STEM in a 3D Scanning and Printing Infused Science Classroom**  
Pavlo Antonenko, University of Florida, Ukraine

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### Session O: 9  12:00-13:30  Lecture Hall - H07

**SINGLE PAPER: MOTIVATION**

**Chair**  
Frieder Schillinger, Technische Universität Dresden, Germany

**Enjoyment and Anxiety in Reading Comprehension: Exploring Emotion Antecedents Across Grade Levels**  
Sonia Zaccorletti, University of Padova, Italy; Gianmarco Albò, University of Padova, Italy; Italy; Lucia Mason, University of Padova, Italy

**A diary study on motivational regulation, academic procrastination, and college dropout intentions**  
Lisa Bifulke, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

**The Development and Validation of a new Multidimensional Test Anxiety Scale**  
Dave Putwain, Liverpool John Moores University, United Kingdom; Nathaniel von der Embse, University of South Florida, United States

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### Session O: 10  12:00-13:30  Seminar Room - S15

**SINGLE PAPER: EARLY CHILDHOOD EDUCATION**

**Chair**  
Marion Tillena, Avans Hogeschool / Avans University of Applied Sciences, Netherlands

**Inclusive good practice in preschool: teachers point of view**  
Maja Antonietti, University of Modena and Reggio Emilia, Italy; Alice Veneziani, University of Modena and Reggio Emilia - Department of Education and Human Sciences, Italy

**Is young children’s self-regulation related to teachers’ autonomy supportive style?**  
Antonia Zachariou, University of Roehampton, United Kingdom; Arielle Bonneville-Roussy, Roehampton University, United Kingdom

**Analyzing conditions of successful private tutoring with longitudinal data from Germany**  
Karin Gulli, Leibniz Institute for Science and Mathematics Education, Germany; Melike Omerogullari, Leibniz Institute for Science and Mathematics Education, Germany; Olaf Koeller, Leibniz Institute for Science and Mathematics Education, Germany
### Session O: 11  |  Time: 12:00-13:30  |  Location: Lecture Hall - H11

**SINGLE PAPER: COGNITIVE SKILLS IN EARLY CHILDHOOD EDUCATION**

| Chair | Robot intervention for promoting spatial relations and spatial language among preschool children  
Sigal Eden, Bar-Ilan University, Israel; Einat Brainin, Bar-Ilan University, Israel  
Adina Shamir, Bar-Ilan University, Israel  
Using Storytelling to Scaffold Children’s Cognitive Processing during Robotic Coding  
Brian Zoellner, University of North Florida, United States; Meghan Parkinson, University of Florida, United States; Daniel Dinsmore, University of North Florida, United States; Kelli Laceyfield, University of North Florida, United States  
Science competencies in elementary school. Does scientific thinking promote science understanding?  
Susanne Koeber, University of Education Freiburg, Germany; Christopher Osterhaus, Ludwig Maximilians-Universität, Germany  
Practitioner’s Perspective on Collaborative Learning among Young Children Using Mobile Technology  
Pinsuda Srisontsuk, Open University, United Kingdom |

### Session O: 12  |  Time: 12:00-13:30  |  Location: Seminar Room - S05

**SINGLE PAPER: METACOGNITION AND SELF-REGULATION**

| Chair | Providing metacomprehension-ratings to support self-regulated learning with texts  
Lenka Schnaubert, University of Duisburg-Essen, Germany; Leonie Kowalski, University of Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany  
Building bridges to enhance young children’s agency: Metacognition and executive function  
Loren Marulis, Connecticut College, United States; Sara Baker, Faculty of Education, United Kingdom; David Whitebread, University of Cambridge, United Kingdom  
Does Measuring Metacognition Improve Performance?  
Kit Double, University of Oxford, United Kingdom; Damian Birney, University of Sydney, Australia  
Assessing the relationships between metacognition, mind wandering and mindfulness: A pilot study  
David Preiss, Pontificia Universidad Católica de Chile, Chile; Valeska Grau, Pontificia Universidad Católica de Chile, Chile; Miguel Ibaceta, Pontificia Universidad Católica de Chile, Chile; David Torres, Pontificia Universidad Católica de Chile, Chile |

### Session O: 13  |  Time: 12:00-13:30  |  Location: Seminar Room - S13

**SINGLE PAPER: WORKPLACE LEARNING**

| Chair | Hierarchy - Barrier or Opportunity for Team Learning?  
Therese Grohnert, Maastricht University, Netherlands; Pleurle Simons, Maastricht University, Netherlands; Roger Meuwissen, Maastricht University, Netherlands; Wim Gipselaers, Maastricht University, Netherlands  
Pain in present gain in future: How professionals learn from self-made errors  
Laura Smeets, Maastricht University, Netherlands; Wim Gipselaers, Maastricht University, Netherlands; Therese Grohnert, Maastricht University, Netherlands; Roger Meuwissen, Maastricht University School of Business and Economics, Netherlands  
Changes in learning-to-teach patterns of student teachers during internships: An LTA approach  
Michael Goller, University of Bamberg, Germany; Dagmar Feistner, University of Paderborn, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Tina Haecher, University of Bern, Switzerland  
Reflection in professional contexts – views of teachers in vocational education and training  
Baalhe Fuenstenaan, TU Dresden, Germany; Mandy Hommel, TU Dresden, Germany; Regina Mulder, University of Regensburg, Germany |
### Session O: 14  
**Time: 12:00-13:30**  
**Location: Lecture Hall - H05**

**SINGLE PAPER: IN-SERVICE TEACHER EDUCATION AND TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**  
Barbara Otto, University of Landau, Germany

**Media literacy of teachers and technology equals high-quality teaching in classrooms?**  
Michael Sailer, Ludwig Maximilians-Universität, Germany; Julia Murtböck, Ludwig Maximilians-Universität (LMU), Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany

**Teacher Reflection and Motivation**  
Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel; Yael Mishaeli, Ben Gurion University of the Negev, Israel; Guy Roth, Ben-Gurion University of the Negev, Israel

**A Comparison of Experienced and New Facilitators of Structured Professional Development in Science**  
Judith Warren Little, University of California, Berkeley, United States; Elena Duran Lopez, University of California Berkeley, United States; Anna Weltman, University of California Berkeley, United States

**Teachers in Estonia: Low motivation is more critical than low general pedagogical knowledge**  
Äl Lejen, University of Tartu, Estonia; Lina Maiva, University of Tartu, Estonia; Katrin Poom-Valickis, Tallinn University, Estonia; Margus Pedaste, University of Tartu, Estonia; Aleksander Baucal, University of Belgrade, Serbia

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### Session O: 15  
**Time: 12:00-13:30**  
**Location: Seminar Room - S03**

**SINGLE PAPER: SCIENCE EDUCATION**

**Chair**  
Peter David Renshaw, The University of Queensland, Australia

**Latent Profiles of Elementary School Student’s Epistemic Beliefs in Science**  
Julia Schelter, University of Tuebingen, Germany; Andrea Bergholt, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Nele Kampa, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Develop student scientific argumentation via metacognitive scaffolding**  
Grinja Jin, University of Alberta, Canada

**Longitudinal study of the primary students’ Topic Specific Science related ability beliefs**  
Kalle Juuti, University of Helsinki, Finland; Anni Loukomies, University of Helsinki, Finland; Jari Lavonen, University of Helsinki, Finland; Katareina Salmela-Aro, Helsinki University, Finland

**Examining the relationship between learners’ observation and knowledge structures in field geology**  
Lauren Barth-Cohen, University of Utah, United States; Sarah K. Braden, Sarah K. Braden School of Teacher Education and Leadership Utah State University, United States

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### Session O: 16  
**Time: 12:00-13:30**  
**Location: Seminar Room - S10**

**SINGLE PAPER: EDUCATIONAL THEORY AND PHILOSOPHY**

**Chair**  
Franziska Vogt, University of Teacher Education St.Gallen, Switzerland

**What is an educational theory?**  
Gianfranco Simon, University of Padua, Italy

**Transformation of subject knowledge between lectures, lab exercises and report writing**  
Nils Dohn, Aarhus University, Denmark; Nina Bonderup Dohn, University of Southern Denmark, Denmark

**Education as technology. Theoretical reflections.**  
Denis Francesconi, Danish School of Education, Denmark

**Education in a Leisure-Based Jobless Society**  
Eugene Matsuov, University of Delaware, United States
### SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Preparing teachers for the 21st century practice: A longitudinal study</th>
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<tr>
<td>Els Boshuizen, Open University of the Netherlands, Netherlands</td>
<td>Kati Máki-Raitio, University of Oulu, Finland; Päivi Hakkinen, University of Jyväskylä, Finland; Sanna Järvelä, University of Oulu, Finland; Arto K. Ahonen, University of Jyväskylä, Finland; Jari Kuukkonen, University of Eastern Finland, Finland; Piia Nayski, University of Oulu, Finland; Johanna Pöystä-Tahonen, University of Jyväskylä, Finland; Eirkko Sointu, University of Eastern Finland, Finland; Teemu Valtonen, University of Eastern Finland, Finland; Anne Virtanen, University of Jyväskylä, Finland</td>
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<tr>
<td>Measuring Lesson Planning Competency: Scale Development and Validation</td>
<td>Olga Chernikova, Ludwig Maximilian University, Germany; Karsten Stiemann, Ludwig Maximilians-Universität (LMU), Germany; Jan-Willem Strijbos, University of Groningen, Netherlands; Tina Seidel, Technische Universität München, Germany</td>
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<td>Group concept mapping as starting point for educational design research in primary education</td>
<td>Ivan Wopereis, Open University of the Netherlands, Netherlands; Emmy Vrienting, Open University of the Netherlands, Netherlands; Marjon De Boer-Bruggink, Iselinge Hogeschool, Netherlands; Slav Stoianov, Open University of the Netherlands, Netherlands</td>
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<td>Exploring Pre-Service Teachers’ Professional Vision in the Context of Lesson Planning</td>
<td>Adriana Zaratapoa, Technische Universität München, Germany; Martina Alles, Technische Universität München (TUM), Germany; Tina Seidel, Technische Universität München, Germany</td>
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### SINGLE PAPER: EDUCATIONAL POLICY

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<td>Jessica Summers, University of Arizona, United States</td>
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<td>Value-added modeling in primary school: What covariates to include?</td>
<td>Jessica Ley, University of Luxembourg, Luxembourg; Martin Brunner, University of Luxembourg, Luxembourg; Ulrich Keller, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg; Antoine Fischbach, University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Luxembourg</td>
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<td>School inspection: Is it worth the effort? A systematic review of 30 years of international research</td>
<td>Sarah Isabelle Hefer, TU Munich School of Education, Germany</td>
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<td>‘Intractable’ schools: can an Ofsted classification prevent sustainable improvement?</td>
<td>Bernardita Munoz Chereau, University College London, United Kingdom; Melanie Ehren, UCL Institute of Education, United Kingdom</td>
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### SINGLE PAPER: STUDENT LEARNING

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<th>Investigating differentiated instruction in a text-learning strategy intervention with mind maps</th>
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<td>Riekie Bogaert, Ghent University, Belgium; Emilien Merchie, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<td>Profiles of instructional quality in classes with a special emphasis on music or science education.</td>
<td>Ariane S. Willems, University of Goettingen, Germany; Sonja Nonte, University of Goettingen, Germany; Tobias Stubbe, University of Goettingen, Germany</td>
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<td>Effects of learning progress assessment and differentiated reading instruction in second grade</td>
<td>Martin T. Peters, University of Muenster, Germany; Karin Hebekueer, University of Muenster, Germany; Elmar Souvignier, University of Muenster, Germany</td>
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<td>Preservice teachers as learners and collaborators – Longitudinal study in Finnish teacher education</td>
<td>Päivi Hakkinen, University of Jyväskylä, Finland; Anne Virtanen, University of Jyväskylä, Finland; Aiko Tolvanen, University of Jyväskylä, Finland; Johanna Pöystä-Tahonen, University of Jyväskylä, Finland; Mikko Nillo-Rämä, University of Jyväskylä, Finland; Piia Nayski, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland</td>
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## EARLI KEYNOTE SESSION: THINKING TOMORROW’S COMPUTER-SUPPORTED COLLABORATIVE LEARNING: CHALLENGES AND OPPORTUNITIES

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## EARLI KEYNOTE SESSION: ARGUMENTATION, INTERACTION AND LEARNING: LESSONS FROM SCIENCE EDUCATION

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## EARLI KEYNOTE SESSION: EDUCATIONAL NEUROSCIENCE: PROMISES AND PITFALLS

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## SYMPOSIUM: STUDENT, TEACHER, AND OBSERVER RATINGS OF TEACHING QUALITY: INVESTIGATING REASONS FOR (DIS)AGREEMENT

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### THURSDAY, 15 AUGUST 2019

#### Session P: 2 | Time: 15:30-17:00 | Location: Lecture Hall - H11

**POSTER PRESENTATION: WRITING AND LITERACY**

| Chair                  | Students' Use of Diagrams in Writing Explanations: Does Instruction in Diagram Use Help?  
                          | Emmanuel Manalo, Kyoto University, Japan; Cuhao Chen, National Institute of Education, Nanyang Technological University, Singapore; Jin Wang, Pearl River College of Tianjin University of Finance and Economics, China  
                          |  
                          |                      | Poetry, meaning making and mind wandering: Implications for Education  
                          |                      | David Preiss, Pontificia Universidad Catolica de Chile, Chile  
                          |                      | Lesson study or lesson development? Teachers' collaborative learning in basic skills  
                          |                      | Pernele Fiskerstrand, Volda University College, Norway  
                          |                      | Text Revision in Inclusive Classrooms  
                          |                      | Daria Ferencik-Lehmkuhl, University of Duisburg Essen, Germany  
                          |                      | Features of Historical Reasoning in Undergraduate English Language Learners' Writing  
                          |                      | Kristin Sendur, University of Amsterdam / Sabanci University, Turkey; Jannet van Drie, University of Amsterdam, Netherlands; Carla Van Bouzel, University of Amsterdam, Netherlands; Kees Jan Kan, University of Amsterdam, Netherlands  
                          |                      | Using speech recognition to facilitate writing for children with dyslexia – for whom does it work?  
                          |                      | Åsa Wengelin, University of Gothenburg, Sweden; Sanna Kraft, University of Gothenburg, Sweden; John Rack, Linnaeus University, Sweden; Fredrik Thurfjell, University of Gothenburg, Sweden  

#### Session P: 3 | Time: 15:30-17:00 | Location: Lecture Hall - H06 - Amazon Hörsaal

**SYMPOSIUM: SCREEN-MEDIATED PERMEABILITY: TEACHING AND LEARNING IN THE COMPANY OF PERSONALIZED PHONE CONTENT**

| Chair                  | “Omg talk existence instead plz :)))”. Learning in phone mediated classroom participation  
                          | Marie Täumer, Karlstad University, Sweden; Christina Olin-Scheller, Karlstad University, Sweden  
                          |  
                          |                      | Photoblogs and re-territorialisation of teaching and learning in a psychology lesson on puberty  
                          |                      | Fritjof Sahström, Åbo Akademi University, Finland; Antti Paakkari, University of Helsinki, Finland; Verner Valasmo, Åbo Akademi University, Finland  
                          |                      | Private phone-mediated interaction as a resource for doing language learning in classrooms  
                          |                      | Fredrik Rusk, Nord University, Norway  
                          |                      | Learning and longitudinality in mobile phone interaction in classrooms  
                          |                      | Fritjof Sahström, Åbo Akademi University, Finland  

#### Session P: 4 | Time: 15:30-17:00 | Location: Lecture Hall - H08

**SYMPOSIUM: USING ICT TO REFLECT UPON TEACHING IN TEACHER EDUCATION AND PROFESSIONAL DEVELOPMENT**

| Chair                  | Anchoring Reflection in Mobile Note-Taking: Case Studies with Preservice Teachers  
                          | Regina Schmid, Schwyz University of Teacher Education, Switzerland; Laura Müller, Schwyz University of Teacher Education, Switzerland; Michael Heilscher, Pädagogische Hochschule Schwyz, Switzerland; Dominik Petko, University of Zurich, Switzerland  
                          |  
                          |                      | Using video as a stimulus for extending teacher noticing  
                          |                      | Maria Virki, University of Cyprus, Cyprus; Paul Warwick, University of Cambridge, United Kingdom; Victoria Cook, University of Cambridge, UK; United Kingdom; Louis Major, University of Cambridge, United Kingdom  
                          |                      | Learning to Teach with Content-Focused Coaching – Design of a Blended Learning Environment  
                          |                      | Fritz C. Staub, University of Zurich, Switzerland; Eva Becker, University of Zurich, Switzerland  
                          |                      | Virtual feedback on real teaching? Enhancing preservice teachers’ reflection upon teaching practice  
                          |                      | Miriam Jähne, Friedrich-Schiller-Universität Jena, Germany; Susi Klaß, Friedrich Schiller University Jena, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany  

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110
## SYMPOSIUM: CONCEPTUAL AND PROCEDURAL KNOWLEDGE IN MATHEMATICS LEARNING: OPEN ISSUES IN THEORY AND MEASUREMENT

**Chairs**
Terezinha Nunes, University of Oxford, United Kingdom; Xenia Vamvakoussi, University of Ioannina, Greece  

**Organisers**
Xenia Vamvakoussi, University of Ioannina, Greece; Jake McMullen, University of Turku, Finland  

**Discussant**
Xenia Vamvakoussi, University of Ioannina, Greece

- Assessing conceptual and procedural fraction knowledge – A focus on validity  
  Katja Lenz, University of Education Freiburg, Germany; Anika Dreher, University of Education Freiburg, Germany; Lars Holzäpfel, University of Education Freiburg, Germany; Gerald Wittmann, University of Education Freiburg, Germany

- The Longitudinal Relations between Conceptual and Procedural Knowledge: A Meta-Analysis  
  Michael Schneider, University of Trier, Germany; Bethany Rittle-Johnson, Vanderbilt University, United States; Alisha Töre, University of Trier, Germany; Katharina Weber, University of Trier, Germany

- Individual differences in bootstrapping procedural and conceptual knowledge for future learning  
  Jake McMullen, University of Turku, Finland; Bethany Rittle-Johnson, Vanderbilt University, United States; Jon Star, Harvard Graduate School of Education, United States

- Issues in studying conceptual and procedural fraction knowledge: Reflecting on a series of studies  
  Xenia Vamvakoussi, University of Ioannina, Greece; Maria Bempeni, University of Ioannina, Greece; Stavroula Poulopoulou, Athens University of Economics and Business, Greece; Ioanna Tsipaki, University of Ioannina, Greece

## SYMPOSIUM: IDENTIFYING LITERACIES PROTECTIVE AGAINST MISINFORMATION AND SCIENCE SKEPTICISM

**Chair**
Friederike Hendriks, University of Münster, Germany

**Organisers**
Dorothy Kienhus, University of Münster, Germany; Friederike Hendriks, University of Münster, Germany

**Discussant**
Eleni Kyza, Cyprus University of Technology, Cyprus

- Strategies in Dealing with Science-Based Information  
  Dorothy Kienhues, University of Münster, Germany; Friederike Hendriks, University of Münster, Germany; Regina Jucks, WWU Münster, Germany; Rainer Bromme, University of Münster, Germany

- Knowing your Limits? Source Evaluation does not Override the Persuasiveness of Information Easiness  
  Lisa Schäffer, Ruhr-Universität Bochum, Germany; Marc Stadler, Ruhr-Universität Bochum, Germany; Rainer Bromme, University of Münster, Germany

- Epistemic Trust and Critique of Methodology in Lay Use of Science Information for Health Decisions  
  Michael Weinstock, Ben-Gurion University of the Negev, Israel; Iris Tabak, Ben-Gurion University of the Negev, Israel; Efrat Yahav, Ben-Gurion University of the Negev, Israel; San Bazzia, University of Haifa, Israel

- Instructional Scaffolds to Shift Students’ Epistemic Evaluations toward the Scientific  
  Doug Lombard, University of Maryland, College Park, United States; Timothy G. Klaon, Temple University, United States; Margaret A. Holzer, Chatham High School, New Jersey, United States; Reed Kendall, Temple University, United States

## SYMPOSIUM: EFFECTIVE TEACHING AND ITS EFFECTS ON EARLY CHILDHOOD DEVELOPMENT

**Chair**
Jyrki Reunamo, University of Helsinki, Finland

**Organiser**
James Ko, The Education University of Hong Kong, Hong Kong

**Discussant**
Kathy Sylva, University of Oxford, United Kingdom

- The distinctive roles of individual- and school-level self-regulation in early development gaps  
  James Ko, The Education University of Hong Kong, Hong Kong; Jin Sun, The Education University of Hong Kong, Hong Kong; Rong Kong, The Education University of Hong Kong, Hong Kong

- Effective teaching and its effects on early childhood development: Theories and methods  
  James Ko, The Education University of Hong Kong, Hong Kong; Pamela Sammons, University of Oxford, United Kingdom

- Findings from Pilots on Teaching Effects through Observing Children in Finland and Hong Kong  
  Jyrki Reunamo, University of Helsinki, Finland; James Ko, The Education University of Hong Kong, Hong Kong

- The role and impact of School Sponsoring Body in Hong Kong kindergartens  
  Jyrki Reunamo, University of Helsinki, Finland; Doris CHENG, Tung Wah College, Hong Kong; Yasmin Fong, The Education University of Hong Kong, Hong Kong
SYMPOSIUM: ASSESSMENTS OF TEACHERS’ PROFESSIONAL KNOWLEDGE, INSTRUCTIONAL SKILLS AND THEIR RELATIONS

Chair
Alicia Alonso, Michigan State University, United States

Organisers
Olga Zlatkin-Trotschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Jennifer Fischer, Johannes Gutenberg-Universität, Germany

Discussant
Fien Depaepe, KU Leuven, Belgium

Analyzing the Development of Pre-service Physics Teachers’ Professional Competence
Christoph Vogelsang, University of Paderborn, Germany; Andreas Borowski, University of Potsdam, Germany; Christoph Kulgemeyer, University of Bremen, Germany; Josef Reise, RWTH Aachen University, Germany

The Competence of Teaching Multilingual Learners – Video-Based Test with Auditory Responses
Sarah Larissa Hecker, Universität Bielefeld, Germany; Svenja Hammer, Leuphana University Lueneburg, Germany; Svenja Lemmrich, Leuphana University Lueneburg, Germany; Stephanie Klein, University of Bielefeld, Germany; Timo Ehrike, University of Luevenburg, Germany; Barbara Koch-Pniewe, University of Bielefeld, Germany; Anne Köker, University of Bielefeld, Germany; Udo Ohm, University of Bielefeld, Germany

Measuring “Economics and Society” Teachers’ Content Knowledge and Pedagogical Content Knowledge
Doreen Hötsc, University of Teacher Education St.Gallen, Switzerland

Relationships Between Teachers’ Domain-specific Knowledge, Generic and Instructional Skills
Olga Zlatkin-Trotschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Christiane Kuhn, Johannes Gutenberg-Universität Mainz, Germany; Hannes Saas, Johannes Gutenberg-Universitäet, Germany

POSTER PRESENTATION: HIGHER EDUCATION

Chair
Stilpan Vyodyning, FernUniversität in Hagen, Germany

How’s it relevant to me? Student Perception of Learning Science from Transformative Activist Stance
Sanaz Farhangi, Florida International University, United States

Energizing the college classroom: Using movement to activate learning
Stacia Miller, Midwestern State University, United States; Suzanne Lind, Midwestern State University, United States

Mind the gap! Differences in monitoring of learning for an assessment between low and high achievers
Jeroen van der Linden, HAN University of Applied Sciences, Netherlands

The assessment of pre-service teachers’ scientific inquiry skills
Gábor Z. Orosz, University of Szeged, Hungary; Erzsbéter Korm, University of Szeged, Hungary; Mária B. Németh, MTA-SZTE Research Group on the Development of Competencies, Hungary

Problems in cross-contextual learning designs in Higher Education
Bernadette Dilger, University of St.Gallen, Switzerland; Luci Gommers, University of St.Gallen, Switzerland; Christian Rapp, Zurich University of Applied Sciences, Germany

Understanding and nurturing emergence – Exploring the temporality of being and becoming
Eva Vass, Western Sydney University, Australia; Josephine Moate, University of Jyväskylä, Finland

POSTER PRESENTATION: MOTIVATION, EMOTION AND SELF-EFFICACY

Chair
Laurie Delnoij, Open University, Netherlands

Exploring Achievement Goals, Self-Efficacy, and Performance among New Zealand University Students
Valene Sotardi, University of Canterbury, New Zealand

Is Seeing Believing? Comparing Perceived Similarity in a Dual-Modality Belonging Intervention
Xiao-Yin Chen, University of Kentucky, United States; Ellen Usher, University of Kentucky, United States; Christia Brown, University of Kentucky, United States; Cahah Ford, University of Kentucky, United States

Making appreciation visible - a video analyzes of a relationship-oriented facet of teacher ethos
Simone Ziegler, Otto-Friedrich-Universität Bamberg, Germany

Using task-specific assessment of self-efficacy to identify individual competency profiles
Katharina Sitter, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Andreas Obersteiner, University of Education Freiburg, Germany

Influences of motivational constructs on scientific thinking in school-age children
Kristin Nyberg, University of Education Freiburg, Germany; Susanne Koeber, University of Education Freiburg, Germany
### Session P: 11
**Time:** 15:30-17:00  
**Location:** Seminar Room - S14

#### POSTER PRESENTATION: ASSESSMENT METHODS AND TOOLS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marjaana Puurtinen, Finland</td>
<td>Low-stakes performance testing in Germany: Teachers’ perceptions and test preparation methods</td>
<td>Inga Wagner, University of Koblenz-Landau, Germany; Ursula Koch, Centre for Educ. Research / Univ. Landau, Germany</td>
</tr>
<tr>
<td></td>
<td>Assessment of collaboration with groups formed by students with and without virtual agents</td>
<td>Matias Rojas, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Orlando Guerrero, Pontificia Universidad Católica de Chile, Chile; Pablo Chumimatto, Pontificia Universidad Católica de Chile, Chile</td>
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<td></td>
<td>Evidence informed practice: Critical thinking and question-posing skills in a PBL environment</td>
<td>Int Sasson, University of Haifa, Israel; Shirley Medijansky, University of Haifa, Israel; Itamar Yehuda, Tel Hai College, Shamir Research Institute - University of Haifa, Israel</td>
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<td>Assessment of Teachers’ Gains Across Multiple Historic Site-Based Professional Development Programs</td>
<td>Christine Baron, Teachers College, Columbia University, United States; Sherri Sklarz, Tufts University, United States; Yianna Blasco, Teachers College, Columbia University, United States</td>
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<td></td>
<td>Tools for Assessment of Young Learners Functional Writing Proficiency</td>
<td>Gustaf Bernhard Uno Skar, Norwegian University of Science and Technology, Norway; Lennart Jelle, Norwegian University of Science and Technology (NTNU), Norway</td>
</tr>
</tbody>
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### Session P: 12
**Time:** 15:30-17:00  
**Location:** Seminar Room - S15

#### POSTER PRESENTATION: EARLY CHILDHOOD EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Béatrice Arend, Luxembourg</td>
<td>Preschool children and environmental awareness: the role of experiences in nature</td>
<td>Maja Antonietti, University of Modena and Reggio Emilia, Italy; Rossella Gioli, University of Modena and Reggio Emilia - Department of Education and Human Sciences, Italy; Alessandra Ferrari, Azienda Servizi Bassa Reggiana, Italy; Roberta Cardarelli, University of Modena and Reggio Emilia, Italy; Andrea Pintus, Università di Modena e Reggio Emilia, Italy</td>
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<tr>
<td></td>
<td>Learning to Teach in a Global Crisis</td>
<td>Rabia Hos, University of Rhode Island, United States; Halil Ibrahim Cinarbas, Middle East Technical University, Turkey</td>
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<td></td>
<td>Techcat Project. How evaluate and improve four dimensions of self-regulation in preschool settings</td>
<td>Magín Fernandez Molina, University of Malaga, Spain; Beatriz Barros, ETInformatica, Spain; Monica Trela, University of Malaga, Spain; Antonio Martos, University of Granada, Spain</td>
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<td></td>
<td>Learner Agency of Multilingual Pupils in a Finnish Complementary Language Classroom</td>
<td>Dukleum Sun, University of Jyväskylä, Korea, Republic of</td>
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<td></td>
<td>Content validity study as a way to develop a children’s curiosity behaviour rating scale</td>
<td>John Kaneko, Stockholm University, Sweden</td>
</tr>
</tbody>
</table>
## POSTER PRESENTATION: CULTURAL DIVERSITY AND SOCIAL INTERACTION IN SCHOOLS

**Chair**
Janneke van de Pol, Utrecht University, Netherlands

- **A new education pathway for marginalised youth in the US: A model for Europe as well?**
  Frans Andersen, Aarhus University, Denmark

- **Practices used by teachers in relation to errors during whole class interaction**
  Martin Majzik, Masaryk University, Czech Republic

- **Teacher attitudes on the relationship between prejudice reduction practices and student engagement**
  Ceren Abacioglu, University of Amsterdam, Netherlands; Monique Volman, University of Amsterdam, Netherlands; Agneta Fascher, University of Amsterdam, Netherlands

- **Building Intercultural Competence of Students in Higher Education: The Role of Multicultural Beliefs**
  Lonnieke de Meijer, Erasmus University Rotterdam, Netherlands; Aike Sonra Broens, Erasmus University Rotterdam, Netherlands; Marieke Meeuws, Erasmus University Rotterdam, Netherlands

- **Enacting reading, enacting race: How one young reader becomes (in)visible**
  Suki Mozenter, Stanford University, United States

- **Relation between supportive climate of help-seeking and learning activities with classmates**
  Ayafumi Goto, Gifu Shotoku Gakuen University, Japan; Motoyuki Nakaya, Graduate School of Education and Human Development, Nagoya University, Japan

## POSTER PRESENTATION: NEUROSCIENCE AND LEARNING ANALYTICS

**Chair**
Thomas Moser, Universitetet i Sørøst-Norge, Norway

- **A quantitative review of the “spacing-of-tests” effect**
  Alice Latmier, Ecole Normale Supérieure, France; Hugo Peyre, Ecole Normale Supérieure, France; Franck Ramus, Ecole Normale Supérieure, France

- **Fostering Students’ Understanding of Fraction Magnitudes: Behavioral Effects and Neural Correlates**
  Johannes Rosenkranz, University of Education Freiburg, Germany; Andreas Obersteiner, University of Education Freiburg, Germany; Thomas Dresler, University of Tuebingen, Germany; Johannes Bloechle, University of Tuebingen, Germany

- **Imaging the effects of training on the interference effect in multiplication fact solving**
  Alexander E. Heidukum, Karl-Franzens University of Graz, Austria; Bert De Smidt, KU Leuven, Belgium; Alice De Vischer, Université catholique de Louvain, Belgium; Stephan Vogel, University of Graz, Austria; Roland H. Grabner, University of Graz, Austria

- **Gifted students’ visual behaviors of reading Scratch programs: The role of computational thinking**
  Dai-Rung Li, National Taiwan University of Science and Technology, Taiwan; You Bang Wu, National Taiwan University of Science and Technology, Taiwan; Meng-Jung Tsai, National Taiwan Normal University, Taiwan; Silva Won-Yu Lee, National Changhua University of Education, Taiwan

- **Effects of web types on visual pattern, perception and performance of online inquiry learning**
  An-Hsuan Wu, National Taiwan University of Science and Technology, Taiwan; Meng-Jung Tsai, National Taiwan Normal University, Taiwan; Yunting Chen, Georgia State University, United States
### Session P: 15  
**Time:** 15:30-17:00  
**Location:** Seminar Room - S12

**POSTER PRESENTATION: METACOGNITION**

| Chair                  | Developing a tool to better understand students’ social regulation of learning in the classroom  
|                       | Thomas Harriss, University of Cambridge, United Kingdom  
|                       | Towards a reliable assessment of metacognitive instructional quality across school subjects  
|                       | Norina Stora, Universität Osnabrück, Germany; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland; Maritza Blasberg-Kuhnke, Universität Osnabrück, Germany; Elmar Cohrs-Fresenborg, Universität Osnabrück, Germany; Frank Lipowsky, University of Kassel, Germany; Meik Zülsdorf-Kersting, Universität Osnabrück, Germany  
|                       | Using microanalysis to measure self-regulated learning in a game for emergency care – a pilot  
|                       | Tjitske Faber, Erasmus MC, Netherlands; Mary Dankbaar, Erasmus MC, Netherlands; Walter van den Broek, Erasmus MC, Netherlands  
|                       | Tracing monitoring and shared regulation in collaborative learning with psychophysiological data  
|                       | Eetu Haataja, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Muhterem Dindar, University of Oulu, Finland  
|                       | Focus of attention during a modular robotic problem-solving task  
|                       | Margarida Romeros, Laboratoire d’Innovation et Numérique pour l’Éducation, France; Dayle David, Laboratoire LNE, ESPE de Nice, France  

### Session P: 16  
**Time:** 15:30-17:00  
**Location:** Seminar Room - S04

**POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT**

| Chair                  | English, Russian and Azerbaijani Teachers’ Perceptions of Professional Development Needs  
|                       | Konu Karimova, University of Szeged, Hungary  
|                       | Co-teaching in making projects changes collaboration and agency for teachers as well as pupils  
|                       | Tellervo Harkkul, University of Helsinki, Finland; Henriikka Vartainen, University of Eastern Finland, Finland  
|                       | How is teachers’ motivation related to their general pedagogical knowledge?  
|                       | Lina Malva, University of Tartu, Estonia; Åli Leijen, University of Tartu, Estonia; Katrin Poom-Valki, Tallinn University, Estonia  
|                       | Facilitating highly specified video-based professional development materials with fidelity  
|                       | Karen Keelmer, Hunter College, City University of New York, United States; Nanette Seago, WestEd, United States  
|                       | Analytics-supported Teacher Professional Development: The Impact on Classroom Talk  
|                       | Gaoxue Chen, The University of Hong Kong, Hong Kong; Kennedy Chan, The University of Hong Kong, Hong Kong; Carol Chan, The University of Hong Kong, Hong Kong; Liu Hu, The University of Hong Kong, Hong Kong; Albert Jinjian Yu, The University of Hong Kong, Hong Kong  
|                       | Diverse teachers’ approaches to dialogic teacher orientation  
|                       | Ana Marjanovic-Shane, Independent Scholar, United States  

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**THURSDAY, 15 AUGUST 2019**

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**THURSDAY, 15 AUGUST 2019**
### POSTER PRESENTATION: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION

**Chair**  
Stephen Darwín, Universidad Alberto Hurtado, Chile

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Seeing the classroom: Using machine learning to observe teaching and technology integration</td>
<td>Sarah Howard, University of Wollongong, Australia; Jie Yang, University of Wollongong, Australia; Jun Ma, University of Wollongong, Australia; Christian Ritz, University of Wollongong, Australia; Jahong Zhao, University of Wollongong, Australia; Kylie Wynne, NSW Department of Education, Australia</td>
</tr>
<tr>
<td>Home Tablet use and its relationships with reading performance of 6-8 year-olds</td>
<td>Álvaro Jáñez, University of Salamanca, Spain; Marta Ramos, Salamanca University, Spain; Raquel De Siste, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain</td>
</tr>
<tr>
<td>Design of digital learning environment based on cultural local principles for knowledge convergence</td>
<td>Andrea Ximena Castano, National University of Education, Ecuador</td>
</tr>
<tr>
<td>Computer Science On the Move - An empirical study to foster computational thinking</td>
<td>Katinka Penert, Rudolf Steiner Schule Winterthur, Switzerland</td>
</tr>
<tr>
<td>Invent with Environment: A Maker Course for Environmental Science and Art</td>
<td>Marma Shah, Drexel University, United States; Avnouls Foster, Drexel University, United States; Raja Schaar, Drexel University, United States</td>
</tr>
<tr>
<td>Teaching self-regulation strategies in task-oriented reading: ITSs or classroom instruction?</td>
<td>Maria-Angéles Serrano, University of Valencia, Spain; Eduardo Vidal-Abarca, Universidad de Valencia, Spain; Antonio Ferrer, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain</td>
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### POSTER PRESENTATION: MOTIVATION AND EMOTION

**Chair**  
Katrine Lindvig, University of Copenhagen, Denmark

<table>
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<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Determining the factorial structure of the Basic Needs Satisfaction Scale</td>
<td>Karel Kreijns, Open University of the Netherlands, Netherlands; Amoud T. Evers, Open Universiteit, Netherlands; Andrea Klaasen, Expertisecentre beroepsomderwijs, Netherlands; Joseph Kessels, Twente University - Open University, Netherlands</td>
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<tr>
<td>The influencing factors of Hungarian senior learners' language learning motivation</td>
<td>Emese Schiller, Eötvös Loránd University, Hungary; Helga Domer, Central European University, Hungary</td>
</tr>
<tr>
<td>The impact of uncertainty on proactive work behaviour: the role of motivation</td>
<td>Leenke Jacob, University of Regensburg, Germany; Vasudha Chaudhri, Open University, United Kingdom; Regina Mulder, University of Regensburg, Germany; Allison Littlejohn, Open University, United Kingdom</td>
</tr>
<tr>
<td>Do the subjective task values affect work avoidance goal?</td>
<td>Hisashi Uebuchi, Waseda University, Japan; Hidenori Takehana, Waseda University, Japan</td>
</tr>
<tr>
<td>Motivation and emotions in mathematics in elementary school</td>
<td>Filipa Divo, ISPA - Instituto Universitário / CIE - ISPA (Research Center in Education), Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Ana Carolina Neves, ISPA - Instituto Universitário / CIE - ISPA (Research Center in Education), Portugal; Carolina Costa, ISPA - Instituto Universitário / CIE - ISPA (Research Center in Education), Portugal; Loulides Mata, ISPA - Instituto Universitário / CIE - ISPA (Research Center in Education), Portugal</td>
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<td>Motivational interviewing for improvement of learning strategies: a short intervention</td>
<td>Åge Otseh, University of Bergen, Norway</td>
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</tbody>
</table>
### Session P: 19 | Time: 15:30-17:00 | Location: Seminar Room - S16

**POSTER PRESENTATION: LEARNING, TEACHING AND INSTRUCTION**

| Chair | Discursive constructions on links to professional practice and research in engineering education  
Marie Magnell, KTH Royal Institute of Technology, Sweden  
  
Teachers’ Perception of Professional Ethics and Morality  
Dávidaj Puvrây, University of Szeged, Hungary; Edit Katalin Molnár, University of Szeged, Hungary  
  
Reflective process of pre-service teachers who watch video recordings of lessons they taught  
Gila Zika, Bar-Ilán University, Israel  
  
Strategies in logical reasoning in a deductive version of the Mastermind game  
Maartje Rijmakers, University of Amsterdam, Netherlands  
  
The use and challenges of different representations in economic education  
Matte Ring, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany  
  
Evolutionary theory: A review of misconceptions and interventions in kindergarten and primary school  
Rachel Schwager, Pädagogische Hochschule Schwyz, Switzerland; Lennart Schalk, PH Schwyz, Switzerland |

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### Session P: 20 | Time: 15:30-17:00 | Location: Seminar Room - S02

**POSTER PRESENTATION: ASSESSMENT, EVALUATION AND TOOLS**

| Chair | Uncovering The Key Elements of Success and Failure in Complex Problem Solving: A Log-file Analysis  
Björn Nicolay, University of Luxembourg, Luxembourg; Florian Krieger, University of Luxembourg, Luxembourg; Charalampia Lagou, University of Luxembourg, Luxembourg; Samuel Greff, University of Luxembourg, Luxembourg  
  
Intelligence and Domain-Specific Knowledge: A Meta-Analysis  
Tobias Heltemes, University of Trier, Germany; Michael Schneider, University of Trier, Germany  
  
Long-term Trajectories of Academic Performance in the Context of Social Disparities  
Martin J. Tomass, University of Zurich, Switzerland; Laura A. Hebling, University of Zurich, Switzerland; Urs Moser, University of Zurich, Switzerland  
  
Man-kai Leong, University of Macau, Macao; Kee-kheung Cheung, University of Macau, Macao; Pou Seong Sit, University of Macau, Macao; Soi-kei Mak, University of Macau, Macao  
  
Advancing Item Response Technique in Educational Research  
Agnes Tiwari, The Hong Kong Sanatorium & Hospital, China; Amanda Chu, The Education University of Hong Kong, Hong Kong; Mike So, Hong Kong University of Science and Technology, Hong Kong  
  
The curricular fit theory of motivation  
Rob Kickert, Erasmus University Rotterdam, Netherlands; Marieke Mesquiroso, Erasmus University Rotterdam, Netherlands; Karen Steggers Jager, Erasmus MC, Institute of Medical Education Research Rotterdam, Netherlands; Peter Prinzie, Erasmus University Rotterdam, Netherlands; Lidia Arends, Erasmus University Rotterdam, Netherlands |

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### POSTER PRESENTATION: MOTIVATION, ATTITUDES AND BELIEFS

**Chair**
Susan Bridges, The University of Hong Kong, Hong Kong

**Do beliefs about intelligence mediate the link between perceived competence and school outcomes?**
Therese Boufard, Université du Québec à Montréal, Canada; Elizabeth Parent-Taillon, Université du Québec à Montréal, Canada; Carole Vezeau, University of Quebec in Montreal, Canada

**Shared antecedents of negative self-evaluation bias of competence and impostorism in students**
Elsa Grenon, Université du Québec à Montréal, Canada; Therese Boufard, Université du Québec à Montréal, Canada

**Effects of Praise in Daily Friendship Situation: Effects on Mindsets and Motivation**
KyoSuKe Kakinuma, Doshisha University, Japan; Ayumi Tanaka, Doshisha University, Japan; Fumika Nishiguti, Doshisha University, Japan; Kotoe Sonoda, Doshisha University, Japan; Haruki Tajiri, Doshisha University, Japan

**Help Seeking, Epistemological Beliefs, and Motivational Beliefs in (Pre)vocational Students**
Florinda Sauli, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Jean-Louis Berger, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Matilde Wenger, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Valentin Gross, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland

**High, average, and low achievement in Mathematics: Metacognitive, motivational and emotional aspects**
Dimitrios Moustakas, University of Macedonia, Greece; Eiletheria Gourda, Aristotle University of Thessaloniki, Greece; Dimitrios Goudras, University of Macedonia, Greece

**Measuring Critical Thinking and Metacognition among Students in Technical College**
Felipe López, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Mayra Contreras, Pontificia Universidad Católica de Chile, Chile; Damian Gaterstein, Pontificia Universidad Católica de Chile, Chile; Pablo Chumirnatto, Pontificia Universidad Católica de Chile, Chile

### POSTER PRESENTATION: COGNITIVE DEVELOPMENT AND SKILLS

**Chair**
Molly Hammer, University of Tuebingen, Germany

**Children’s knowledge of multiple word meanings: Devising a receptive test of polyseme vocabulary**
Sophie Booton, University of Oxford, United Kingdom; Victoria Murphy, Open University, United Kingdom

**Early cognitive and environmental predictors of arithmetic skills at 11.5 years old**
Ava Guez, École Normale Supérieure, France; Hugo Peyre, Robert Debré Hospital, APHP, France; Manuela Piazzia, Neuroimaging Unit, Neurospin Center, Italy; Barbara Heude, INSERM, France

**Belief about intelligence: its role on the link between memories of failures and academic adaptation**
Élizabeth Parent-taillon, Université du Québec à Montréal, Canada; Therese Boufard, Université du Québec à Montréal, Canada; Carole Vezeau, University of Quebec in Montreal, Canada

**First-grades’ updating capacity in relation to cognitive processes involved in text comprehension**
Wienke Wannagat, University of Würzburg, Germany; Gerhild Nieding, University of Würzburg, Germany

**Investigating the L2 Writing Processes and Real-time Fluency Using Inputlog**
Meshal Almasr, King AbdulAziz University, Saudi Arabia
### POSTER PRESENTATION: INSTRUCTIONAL DESIGN

**Chair**  
Sarah Bichler, Ludwig Maximilians-Universität (LMU), Germany

Learning and engagement evolutionary ideas within integrated informal learning environments  
Orit Ben Zvi-Assaf, Ben Gurion University of the Negev, Israel; Dina Agadi, The Ben-Gurion University of the Negev, Israel; Yael Gavrieli, The Steinhardt Museum of Natural History, Tel Aviv University, Israel

Using Meta-strategy to Deepen Students’ Understanding of Knowledge Building in Science Class  
Lillian Liu, The University of Hong Kong, Hong Kong; Carol Chan, The University of Hong Kong, Hong Kong; Yuyao Tong, The University of Hong Kong, China

Comparison of experiments and computer simulations as learning tools for out-of-school education  
Johanna Krüger, Leibniz Institute for Science and Mathematics Education at Kiel University (IPN), Germany; Tim Hoeffler, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Katrin Knöckmeier, Kieler Forschungswerkstatt, Germany; Martin Wahl, Helmholtz-Zentrum für Oceanforschung Kiel, GEOMAR, Germany; Ilka Parshmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

Benefits of task contextualization: What is the effect of interest on the learning outcome?  
Sebastian Kemper, University of Potsdam, Germany; Ann-Kathrin Lauts, University of Potsdam, Germany

Recovery Effects in German Orthography Acquisition  
Julia Erdmann, Ruhr University Bochum, Germany; Nikol Rummel, Ruhr University Bochum, Germany

Engaging Students in Theory Building in the Science Classroom  
Hillary Swanson, Northwestern University, United States; Uri Wilensky, Northwestern University, United States

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### SIG INVITED SYMPOSIUM: SIG 16: PARENT AND CHILD FACTORS ASSOCIATED WITH SELF-REGULATION IN (EARLY) CHILDHOOD

**Chairs**  
Miriam Compagnoni, University of Zurich, Switzerland; Kim Gärtner, Heidelberg University, Germany

**Organisers**  
Miriam Compagnoni, University of Zurich, Switzerland; Kim Gärtner, Heidelberg University, Germany

**Discussant**  
Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

“*I am the best!*”: Preacademic self-concepts and self-regulation in kindergarten children  
Miriam Compagnoni, University of Zurich, Switzerland

Children’s Monitoring and Regulation of Learning: Consistency Across Tasks and Stability over Time  
Mariette van Loon, University of Bern, Switzerland; Martina Steiner, University of Bern, Switzerland; Natalie Bayard-Guggisberg, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

The Effects of Parent Stress and Child-Parent Relationship Quality on Children’s Self-Regulation  
Lynda Hutchinson, King’s University College at the University of Western Ontario, Canada; Cassandra Trevianni, University of Western Ontario, Canada; Devon Trower, Western University, Canada; Nancy Perry, University of British Columbia, Canada; Marissa Hall, King’s University College at the University of Western Ontario, Canada

Self-Regulation in Full- and Preterm Toddlers – Effects of Parenting Practices, Beliefs and Stress  
Kim Gärtner, Heidelberg University, Germany; Verena Vetter, University Hospital Heidelberg, Germany; Michaela Schläferling, University Hospital Heidelberg, Germany; Gitta Reuner, Ruprecht-Karls-Universität Heidelberg, Germany; Silke Herpel, Ruprecht-Karls-Universität Heidelberg, Germany

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### SIG INVITED SYMPOSIUM: SIG 9: FACILITATING TEACHER INSIGHTS USING PHENOMENOLOGY AND VARIATION THEORY

**Chairs**  
Jaana Kettunen, University of Jyväskylä, Finland; Ake Ingerman, University of Gothenburg, Sweden

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

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

Using visual representations to qualify students’ understanding of causal relationships in price  
Ann-Sofie Jägerskog, Stockholm University, Sweden; Peter Davies, University of Birmingham, United Kingdom; Cecilia Lundholm, Stockholm University, Sweden

The utility of variation theory where disciplinary relevant aspects are apparent  
Ake Ingerman, University of Gothenburg, Sweden; Cedric Linder, Uppsala University, Sweden; Anne Linder, Uppsala University, Sweden; Susanne Wilman, Linnæus University, Sweden

Beginner Teachers’ knowledge of students’ understandings: evidence from Learning Study  
Guy Durden, University College London, United Kingdom

Changing teaching, changing teachers: learning through contrast, generalization and fusion  
Keith Wood, SHBIE, UBD, Brunei Darussalam; Ari Rovio-Johansson, University of Gothenburg, Sweden
**Session Q: 3** | **Time: 17:15-18:45** | **Location: Lecture Hall - H10**

**SIG INVITED SYMPOSIUM: SIG 18: FEEDBACK ON TEACHING: ISSUES OF CONCEPTUALIZATION, OPERATIONALIZATION AND APPLICATION**

**Chairs**
Wolfram Rollett, University of Education Freiburg, Germany; Charalambos Charalambous, University of Cyprus, Cyprus

**Organiser**
Wolfram Rollett, University of Education Freiburg, Germany

**Discussant**
Charalambos Charalambous, University of Cyprus, Cyprus

- Reflecting on the Promise of Classroom Observation Frameworks for Measuring Feedback Quality
  Merle Ruetlmann, University of Teacher Education of Lucerne, Switzerland; Charalambos Charalambous, University of Cyprus, Cyprus; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland

- Does variance in student ratings add information about teachers’ teaching quality?
  Rikert van der Lans, University of Groningen, Netherlands

- Factors influencing the utilization of student feedback on teaching quality
  Hannah Bijlmer, University of Twente, Netherlands; Adrie Vlasch, Univ. of Twente, Netherlands

- Types of teachers in using student feedback. Quantitative and qualitative findings
  Sebastian Rohl, University of Education Freiburg, Germany; Wolfram Rollett, University of Education Freiburg, Germany

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**Session Q: 4** | **Time: 17:15-18:45** | **Location: Lecture Hall - H11**

**SIG INVITED SYMPOSIUM: SIG 19: WORLDVIEWS AND RELIGIONS IN EDUCATION – PERSPECTIVES TO FUNCTIONS AND EXPERIENCES**

**Chair**
Elina Kuusisto, University of Humanistic Studies, Netherlands

**Organiser**
Laura Hinto, University of Helsinki/ University of Eastern Finland, Finland

**Discussant**
Alexander Unser, TU Dortmund University, Germany

- Religious and professional beliefs of schoolteachers – a literature review of empirical research
  Manfred L. Pirner, University of Erlangen-Nuremberg, Germany; Nastja Häusler, University of Erlangen-Nürnberg, Germany

- The Largely Absent Worldview needed for Understanding Global Jihadism
  Terence Lovat, University of Newcastle, Australia

- Position of worldviews in education: experiences from teachers and learners
  Annika Kuusisto, Stockholm University, Sweden

- University students’ personal worldviews – contextual experiences
  Laura Hinto, University of Helsinki/ University of Eastern Finland, Finland

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**Session Q: 5** | **Time: 17:15-18:45** | **Location: Seminar Room - S16**

**SINGLE PAPER: SOCIAL INTERACTION IN LEARNING AND INSTRUCTION**

**Chair**
Erika Laine, University of Turku, Finland

- “You see the cup? I put the bill inside” Hybrid discourse in family everyday science engagement
  Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel

- “Pull the rope!” – Identity and embodied positioning in a science museum
  Neta Shaby, Ben-Gurion University of the Negev, Israel; Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel

- Episodes of Error Correction in Bar-Mitzvah Torah-Reading Tutoring Sessions
  Hadar Notz, Tel Aviv University, Israel; Oma Fogel, Tel Aviv University, Israel

- Investigation of parents’ use of Parent Assisted Interactive Reading (PAIR) books
  Elisabeth Durriuse, University of Wolfsong, Australia; Sarah Howard, University of Wolflong, Australia; Karl Maton, University of Sydney, Australia; John Walters, independent author, Australia
### Session Q: 6
**Time:** 17:15-18:45  
**Location:** Seminar Room - S07

#### SINGLE PAPER: ARGUMENTATION, DIALOGUE AND REASONING

**Chair**  
Cornelis de Brabander, Leiden University, Netherlands

**What does the silence mean? Student non-participation in classroom discourse: reasons and effects**  
Klára Sedova, Masaryk University, Czech Republic; Jana Navratilova, Masaryk University, Czech Republic; Zuzana Salamonova, Department of Educational Sciences, Faculty of Arts, Masaryk University, Czech Republic; Roman Svaříček, Masaryk University, Czech Republic

**Reliable epistemic processes in academic historiography**  
Mikko Kamulainen, University of Turku, Finland; Marjaana Puurtinen, University of Turku, Finland; Clark A. Chinn, Rutgers University, United States

**Talk about Texts in New Zealand Secondary School**  
Aaron Wilson, University of Auckland, New Zealand

**Diagnostic activity patterns of pre-service teachers in learning with case-simulations**  
Elisabeth Bauer, Ludwig Maximilians-Universität (LMU), Germany; Michael Sailer, Ludwig Maximilians-Universität, Germany; Claudia Schulz, Technische Universität Darmstadt, Germany; Jan Kiesewetter, University Hospital of LMU Munich, Germany; Martin R. Fischer, University Hospital of LMU Munich, Germany; Iryna Gurevych, Technische Universität Darmstadt, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

### Session Q: 7
**Time:** 17:15-18:45  
**Location:** Seminar Room - S15

#### SINGLE PAPER: QUALITATIVE METHODS IN HIGHER EDUCATION

**Chair**  
Allyson Holbrook, The University of Newcastle, Australia

**Professional Growth in Research Supervisors’ Pedagogical Content Knowledge as Result of Lesson Study**  
Bas Agricola, Amsterdam University of Applied Sciences, Netherlands; Marike van der Schaaf, University Medical Centre Utrecht, Netherlands; Frans Prins, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands

**Ethical issues in conducting insider research in academic workplaces: challenges and opportunities**  
Irina Lokhtina, University of Central Lancashire Cyprus, Cyprus

**Feedback practices within PhD supervision: a framework-based synthesis of the literature**  
Joana Tai, Deakin University, Australia; Margaret Bearman, Deakin University, Australia; Rachelle Esterhazy, University of Oslo, Norway; Michael Henderson, Monash University, Australia; Elizabeth Mobey, University of Melbourne, Australia

**Doctoral students’ professional development: a conceptual change approach to program evaluation**  
Hetőga Dorner, Central European University, Hungary; Swapna Kumar, University of Florida, United States

### Session Q: 8
**Time:** 17:15-18:45  
**Location:** Seminar Room - S13

#### SINGLE PAPER: METHODS IN LEARNING RESEARCH

**Chair**  
Gwendolin Blossfeld, University of Bamberg, Germany

**Exploring learning relationships in “a mixed way”: Mixed Structural Analysis**  
Dominik E. Froehlich, University of Vienna, Austria

**Cross-year peer assisted learning and the development of social skills**  
Caroline Bots, Vrije Universiteit Brussel (VUB), Belgium; Mariane Frenay, Université catholique de Louvain (UCL), Belgium

**The relationship between theory and practice in T-VET. On the grounds of key actors’ perspectives.**  
Mariana Zoro, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium; Christiane Timmerman, University of Antwerp, Belgium

**New approach to educational interaction: sociocultural discourse analysis meets multimodal analysis**  
Alison Twiner, The Open University, United Kingdom; Caroline Coffin, The Open University, United Kingdom; Karen Littleton, Open University, United Kingdom; Denise Whitelock, Open University, United Kingdom
### Session Q: 9 | Time: 17:15-18:45 | Location: Seminar Room - S04

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY**

**Chair**  
Claudia Kastens, Bergische University Wuppertal, Germany

**Exploring UK international student experiences during times of home-country conflict**  
Emily-Marie Pacheco, University of Glasgow, Canada

**Collaborative and individual argumentation don’t differ at prompting natural selection understanding**  
Antonia Larrain, Universidad Alberto Hurtado, Chile; Paulina Freire, Universidad Alberto Hurtado, Chile; Sebastian Verdugo, Universidad Alberto Hurtado, Chile; Marisol Gómez, Universidad Alberto Hurtado, Chile; Patricia López, Universidad Alberto Hurtado, Chile; Diego Cosmelli, Pontificia Universidad Católica de Chile, Chile; Valeska Grau, Pontificia Universidad Católica de Chile, Chile

**Belief in a just world and justice experiences of cyber-victimized students**  
Matthias Donat, Martin Luther University Halle-Wittenberg, Germany; Claudia Rüppich, MLU Halle-Wittenberg, Germany; Christoph Gallschütz, MLU Halle-Wittenberg, Germany

**Adolescents’ bullying, risk behavior and problems: Do social factors matter in three countries?**  
Anett Wolgast, Martin-Luther-Universität Halle-Wittenberg, Germany; Matthias Donat, Martin Luther University Halle-Wittenberg, Germany

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### Session Q: 10 | Time: 17:15-18:45 | Location: Seminar Room - S05

**SINGLE PAPER: WRITING, LITERACY AND LANGUAGE**

**Chair**  
Marjolein Dobber, Vrije Universiteit Amsterdam, Netherlands

**Grammatical Reasoning: students’ metatalk about grammar for writing**  
Annabel Watson, University of Exeter, United Kingdom; Ruth Newman, University of Exeter, United Kingdom

**Making metalinguistic choices: different ways of ‘knowing’**  
Susan Jones, University of Exeter, United Kingdom; Debra Myhill, University of Exeter, United Kingdom; Helen Lines, University of Exeter, United Kingdom

**How and how well do Dutch secondary students write? A national baseline study on synthesis writing**  
Nina Vandermeulen, University of Antwerp, Belgium; Elke Van Steen, KU Leuven, Belgium; Gert Rijlaarsdam, University of Amsterdam, Netherlands; Sven De Maeyer, University of Antwerp, Belgium; Marije Lesterhuis, University of Antwerp, Belgium

**Examining Grammar as Choice: An RCT Writing Intervention**  
Debra Myhill, University of Exeter, United Kingdom; Susan Jones, University of Exeter, United Kingdom; Helen Lines, University of Exeter, United Kingdom

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### Session Q: 11 | Time: 17:15-18:45 | Location: Seminar Room - S01

**SINGLE PAPER: HIGHER EDUCATION**

**Chair**  
Orly Ben Zvi-Assaf, Ben-Gurion University of the Negev, Israel

**Design Principles for Wicked Problem Solving: Dealing with Complexity, Uncertainty and Divergence**  
Marieke Veeltman, Windesheim University of Applied Sciences, Netherlands; Hanno Van Kruilen, Windesheim-Flevoland University of Applied Science, Netherlands; Joke Voogt, Windesheim University of Applied Sciences, Netherlands

**Building a boundary crossing Master course through an intervention-based approach**  
Carla Orten, Wageningen University, Netherlands; Perry den Brok, Wageningen University, Netherlands; Judith Guikema, Wageningen University, Netherlands

**Unveiling the Predictors of Academic Belonging in Higher Education**  
Yusen Capa Aydin, Middle East Technical University, Turkey; Sencan Erer, Middle East Technical University, Turkey

**Improving individual learning processes in civil engineering by the use of a digital support concept**  
Marcel Pelz, University of Duisburg-Essen, Germany; Martin Lang, University of Duisburg-Essen, Germany; Yasemin Özmen, University of Duisburg-Essen, Germany; Jörg Schröder, University of Duisburg-Essen, Germany; Felix Walker, Technical University of Kaiserslautern, Germany; Ralf Müller, Technical University Kaiserslautern, Germany
### SINGLE PAPER: EDUCATIONAL TECHNOLOGY AND GAME-BASED LEARNING

**Chair**
Kati Mäkelä, University of Oulu, Finland

**Conceptualizing Augmented Reality from a Psychological Perspective**
Jüri Krüger, Universität Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany

**Gamifying a Simulation: Analyzing Game Goal, Choice, Points, and Praise**
Tanja Hanneken, Charles University, Czech Republic; Tereza Starkova, Charles University, Czech Republic; Edita Bromova, Charles University Prague, Czech Republic; Filip Déchtěrenko, The Czech Academy of Sciences, Czech Republic; Cyril Brom, Charles University, Czech Republic

**Adaptive Opponents Within Educational Video Games: Manipulating Facial Expressions and Difficulty**
Steve Nebel, Chemnitz University of Technology, Germany; Maik Bege, Chemnitz University of Technology, Germany; Sascha Schneider, Chemnitz University of Technology, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany

**Effects of Domain-Specific Prior Knowledge on Complex Skill Acquisition in a Simulation Game**
Joy Yoonjoo Lee, Maastricht University, Netherlands; Jeroen Donkers, Maastricht University, Netherlands; Haltska Maria Jarockska, Open University of the Netherlands, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands

### SINGLE PAPER: MATHEMATICS

**Chair**
Francesca Suter, University of Zurich, Switzerland

**Making the Psychological Dimension of Learning Mathematics Visible**
Gyöngyvér Molnar, University of Szeged, Hungary; Moritz Herzog, University of Duisburg-Essen, Germany; Benő Csávó, University of Szeged, Hungary

**The development of arithmetic concepts up to 100**
Antje Ehrt, University of Potsdam / University of Johannesburg, Germany; Annemarie Fritz-Stratmann, University of Duisburg-Essen, Germany

**Testing the Efficacy of a Number Sense Intervention for At-Risk Kindergarten Students**
Ben Clarke, University of Oregon, United States; Christian Doabler, University of Texas at Austin, United States

**The opportunity propensity model predicting mathematical accuracy and speed.**
Annamie Desoete, Ghent University / Artevelde University College, Belgium; Elke Baten, University of Ghent, Belgium

### SINGLE PAPER: EDUCATIONAL TECHNOLOGY AND INSTRUCTIONAL DESIGN

**Chair**
Antonia Zachariou, University of Roehampton, United Kingdom

**Researching mental model growth of complex skills in formative assessment via Video-enhanced rubrics**
Kevin Ackermans, Open University, Netherlands; Elen Rusman, Welten Institute - Open University of the Netherlands, Netherlands; Rob Nadolski, Welten Institute - Open University of the Netherlands, Netherlands; Saskia Brand-Grüwel, Open University of the Netherlands, Netherlands; Marcus Specht, Welten Institute - Open University of the Netherlands, Netherlands

**The effect of augmented reality instructions as cognitive support during assembly tasks**
Pieter Vanneeste, KU Leuven, Belgium; Yi Huang, Faculty of Psychology and Educational Sciences, KU Leuven, Dekenstraat 2, 3000 Leuven, Belgium; Chris Eliez, imec-ITEC, KU Leuven campus Kulak Kortrijk, Etienne Sabelbaan 51, 8500 Kortrijk, Belgium; Faculty of Psychology and Educational Sciences, KU Leuven, Dekenstraat 2, 3000 Leuven, Belgium; Belgium; Annelies Raes, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Wim Van den Noordt, imec-ITEC, KU Leuven Campus Kulak Kortrijk, Etienne Sabelbaan 51, 8500 Kortrijk, Belgium; Faculty of Psychology and Educational Sciences, KU Leuven, Dekenstraat 2, 3000 Leuven, Belgium

**Effects of Augmented Reality Apps in the Early Astronomy Classroom**
Andreas Lachner, University of Tübingen, Germany; Elisabeth Wegner, University of Freiburg, Germany; Gyizsare Haziri, University of Freiburg, Germany; Caroline Hams, University of Freiburg, Germany; Anna Zörlin, University of Freiburg, Germany

**When Instructional Media Matters: Benefits of Safety Training in Virtual Reality**
Guido Makransky, University of Copenhagen, Denmark; Stefan Borre-Gude, University of Aarhus, Denmark; Richard E. Mayer, University of California Santa Barbara, United States
## SINGLE PAPER: TEACHER EFFECTIVENESS

**Chair**
Viivi Virtanen, University of Helsinki, Finland

**Stability and changes in students' motivational profiles: The role of teaching quality and feedback**
Katharina Dreiling, University of Göttingen, Germany; Ariane S. Willems, Institute for Educational Science, University of Göttingen, Germany

**Student characteristics and teacher expectations: A timely perspective**
Christine Rube-Davies, University of Auckland, New Zealand; Mohamed Alansari, University of Auckland, New Zealand; Penelope Watson, University of Auckland, New Zealand; Annaline Flint, University of Auckland, New Zealand; Lyn McDonald, University of Auckland, New Zealand

**Teaching and learning in diverse schools: Attitudes, beliefs and practices**
Denise Gelber, Pontificia Universidad Católica de Chile, Chile; Lorena Ortega, CIAE, Universidad de Chile, Chile; Alonso González, Center for Educational Justice, Chile; Ernesto Trevino, Pontificia Universidad Católica de Chile, Chile; Lucia Monteiro, Universidad de la República / ANII, Uruguay; Denise Courtois, Ministerio de Educacion, Uruguay

**Development of a Construct-Informed Test to Screen Prospective Teachers**
Robert Klassen, University of York, United Kingdom; Lisa Kim, University of York, United Kingdom

## SINGLE PAPER: SOCIAL ASPECTS OF LEARNING AND TEACHING

**Chair**
Geertie M. Savenije, University of Amsterdam, Netherlands

**Perezhivanie: children’s accounts of shifting identities and emotional learning in place**
Peter David Renshaw, The University of Queensland, Australia; Ron Toth, Pullenvale Environmental Education Centre, Australia

**An Indigenous student’s emotive reading experiences and the evolvement of reader identities**
Clarence Ng, Australian Catholic University, Australia

**Children’s emotional sense-making of their local forest in a Multiliteracies pedagogy program**
Kristina Kumpulainen, University of Helsinki, Finland; Sara Sintonen, University of Helsinki, Finland; Alexandra Nordström, University of Helsinki, Finland; Jenni Vartiainen, University of Helsinki, Finland; Heidi Sairanen, University of Helsinki, Finland

**Uses of “chronotope” to examine the space-time of learning: A systematic literature review**
Giuseppe Riezza, University of Helsinki, Finland; Antti Rajala, University of Helsinki, Finland; Peter David Renshaw, The University of Queensland, Australia

## SINGLE PAPER: PSYCHOMETRICS, ASSESSMENT AND EVALUATION

**Chair**
Oddny Judith Solheim, The Norwegian Reading Centre, Norway

**Assessment of Communication Competences of Medical Students in Two Cohorts: A Multi-Method Study**
Kristina Schich, Technical University Munich, Germany; Pascal Berberat, Technical University Munich, Germany; Martina Kadmon, University Augsburg, Germany; Sigrid Harendza, University Hospital Hamburg-Eppendorf, Germany; Martin Gartner, Technical University of Munich (TUM), Germany

**Quantitative Semiotic Analysis of Test Items: Conceptual and Methodological Foundation**
Guillermo Solano-Flores, Stanford University, United States

**Creative self-beliefs of children and adolescents: A construct validation study**
Paul Ginn, The University of Sydney, Australia; Kelly Freebody, The University of Sydney, Australia; Michael Anderson, The University of Sydney, Australia

**Exploring assessment profiles of HE Academics: A Combination Between Conceptions & Practices**
Percy Pena, Universidad Católica del Norte, Chile
### Session Q: 18  |  Time: 17:15-18:45  |  Location: Seminar Room - S09

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

**Chair**

Helen Margaritou-Andrianassi, University of Athens, Greece

- **Unpacking academic and social adjustment of internationalisation at a distance in Southern Africa**
  - Bart Rienties, Open University, United Kingdom; Jenna Mittelmeier, University of Manchester, United Kingdom; Jo Jordan, Open University, United Kingdom; Akaterina Rogaite, Open University, United Kingdom; Ashley Gunter, UNIVERSITY OF SOUTH AFRICA, South Africa; Parvati Raghuram, Open University, United Kingdom

- **Online Peer Assessment on Enhancing College Language Learners' Intercultural Pragmatic Competence**
  - Mei-Hui Liu, Tunghai University, Taiwan

- **Individual attitudes of educators to digital media education and possible explanatory models**
  - Jasmin Zimmer, Alanus Hochschule, Germany

- **Improving Knowledge Integration Using WISE**
  - Beste Ulus, Bogazici University, Turkey; Diler Oner, Bogazici University, Turkey

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### Session Q: 19  |  Time: 17:15-18:45  |  Location: Seminar Room - S11

**SINGLE PAPER: TEACHER EDUCATION AND SOCIAL INTERACTION**

**Chair**

Mordechai Miron, Tel Aviv University, Israel

- **Formative seminars to explore teachers’ conceptualization of grammar teaching for learning to write**
  - Xavier Fontich, Autonomous University of Barcelona, Spain

- **The influence of mentoring roles in student teachers’ professional knowledge acquisition**
  - Paul Hennissen, Zuyd University of Applied Sciences, Netherlands; Juan-Jose Mena Marcos, University of Salamanca, Spain

- **Comparative study of new pathways into teaching in Malta and Scotland**
  - Michele Attard Tonna, University of Malta, Malta; Rachel Sharpe, University of Aberdeen, United Kingdom

- **Teacher-Student-Interactions in Situations with Primary School Children’s Anxiety**
  - Juliane Schlesier, University of Oldenburg, Germany; Uta Wagener, University of Oldenburg, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany

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### Session Q: 20  |  Time: 17:15-18:45  |  Location: Lecture Hall - H09

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**

Guido Nottbusch, University of Potsdam, Germany

- **Evidence-Based Feedback Evaluation through Video-Annotation in a Swiss Teacher Training Program**
  - Alessa Evi Colombo, Swiss Federal Institute for Vocational Education and Training (SIVET), Switzerland; Elena Boldrini, Swiss Federal Institute for Vocational Education and Training (SIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland

- **Is the competent perception of a lesson a necessary condition of a competent teaching performance?**
  - Sarah Larissa Hecker, Universität Bielefeld, Germany; Stephanie Klein, Universität Bielefeld, Germany; Svenja Lemmrich, Leuphana University Lueneburg, Germany; Timo Ehmke, University of Lueneburg, Germany; Barbara Koch-Priewe, Universität Bielefeld, Germany

- **Feedback Coaching: Collaborative professional learning to build effective feedback processes**
  - Rochelle Burton, The University of Queensland, Australia; Annemarie Carroll, The University of Queensland, Australia; Cam Brooks, The University of Queensland, Australia; John Halfe, The University of Melbourne, Australia

- **Listening to teachers, reaching the goals in video-based PD: A case study on facilitator expertise**
  - Susanne Prediger, TU Dortmund University, Germany; Brite Pöthke, TU Dortmund University, Germany
# SYMPOSIUM: MODELS OF TEACHER PROFESSIONAL DEVELOPMENT TO SUPPORT CLASSROOM DIALOGUE: STRUGGLES AND SUCCESSES

**Chair**  
Sara Hennessy, University of Cambridge, United Kingdom

**Organiser**  
Sara Hennessy, University of Cambridge, United Kingdom

**Discussant**  
Jonathan Osborne, Stanford University, United States

**T-SEDA: A flexible research-informed PD approach to teacher inquiry into dialogue**  
Ruth Kershner, University of Cambridge, United Kingdom; Sara Hennessy, University of Cambridge, United Kingdom; Jane Tilson, University of Otago, New Zealand; Benzi Slakmon, Hebrew University, Israel; Elisa Calcagni, University of Cambridge, United Kingdom; Laura Kerslake, University of Cambridge, United Kingdom; Farah Ahmed, University of Cambridge, England, United Kingdom; Helen Trevenathan, University of Otago, New Zealand; Susan Sandretto, University of Otago, New Zealand; Sarah Seleznov, Southwark Teaching Schools Alliance, United Kingdom

**Sustainability of scaffolding student argumentation: a follow-up study of an in-service program**  
Baruch Schwarz, Hebrew University of Jerusalem, Israel; Irir Cohen, The Hebrew University of Jerusalem, Israel

**Issues arising from the multi-site implementation of a school-run dialogic pedagogy program**  
Sara Hennessy, University of Cambridge, United Kingdom; Elisa Calcagni, University of Cambridge, United Kingdom

**Designing a model of professional development to support teachers’ facilitation of argumentation**  
Ian A.G. Wilkinson, University of Auckland, New Zealand; Alina Reznitskaya, Montclair State University, United States
### SIG INVITED SYMPOSIUM: SIG 26: ARGUMENTATION, DIALOGUE, AND REASONING IN EDUCATION: AREAS OF RESEARCH AND PRACTICE

<table>
<thead>
<tr>
<th>Chair</th>
<th>Argumentation in Science Education as an Epistemic Performance</th>
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<tbody>
<tr>
<td>Armin Weinberger, Saarland University, Germany</td>
<td>Maria Pilar Jimenez-Aleixandre, University of Santiago de Compostela, Spain; Clark Chinn, Rutgers Graduate School of Education, United States; Pablo Brocos, University of Santiago de Compostela, Spain</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Analysis and Facilitation of Transactional Argumentative Knowledge Construction Online</td>
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<tr>
<td>Armin Weinberger, Saarland University, Germany</td>
<td>Freydis Vogel, University of Nottingham, United Kingdom; Armin Weinberger, Saarland University, Germany</td>
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<td><strong>Discussant</strong></td>
<td>Research on Dialogic Education</td>
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<tr>
<td>Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany</td>
<td>Rupert Wegerif, University of Cambridge, United Kingdom; Sara Hennvoss, University of Cambridge, United Kingdom</td>
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<tr>
<td><strong>Teacher Education for Scaffolding Argumentation, Dialogue and Reasoning in the Classroom</strong></td>
<td>Anat Yarden The Weizmann Institute of Science, Weizmann Institute of Science, Israel; Baruch Schwartz, Hebrew University of Jerusalem, Israel; Boris Kochu, Weizmann Institute of Science, Rehovot, ISRAEL, Israel; Michal Tabach, Tel Aviv University, Israel; Einat Heyd Metzuyanim, The Technion Israel Institute of Technology, Israel; Benzi Slakmon, Hebrew University, Israel</td>
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### SYMPOSIUM: TEACHERS’ PROFESSIONAL VISION: HOW TEACHERS LOOK AT THEIR STUDENTS

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<tr>
<th>Chair</th>
<th>Professional vision in and on action: Two sides of the same coin?</th>
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<tbody>
<tr>
<td>Doris Holzberger, Technical University of Munich (TUM), Germany</td>
<td>Zuzana Barcova Smidkova, Masaryk University, Czech Republic; Miroslav Janik, Masaryk University, Czech Republic; Eva Minarkova, Masaryk University, Czech Republic</td>
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<td><strong>Organisers</strong></td>
<td>Developing a coding scheme for verbalizations on professional vision during own classroom management</td>
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<tr>
<td>Katharina Schnitzier, Technical University of Munich, Germany; Christian Kosel, TUM School of Education, Germany</td>
<td>Shariase van Din, Open University, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Frank Crasborn, Fontys University of Applied Sciences, Netherlands; Charlotte Wolff, University of Iceland, Iceland; Saskia Brand-Gruwel, Open University of the Netherlands, Netherlands</td>
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<td><strong>Discussant</strong></td>
<td>How does student behavior attract preservice teachers’ attention while instruction?</td>
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<td>Katharina Schnitzier, Technical University of Munich, Germany; Christian Kosel, TUM School of Education, Germany; Doris Holzberger, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany</td>
<td>Patricia Goldberg, University of Tübingen, Germany; Kathleen Stürmer, University of Tübingen, Germany; Tina Seidel, Technische Universität München, Germany</td>
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<tr>
<td><strong>Pre-service teachers’ professional vision and their judgment accuracy of student profiles</strong></td>
<td>Katharina Schnitzier, Technical University of Munich, Germany; Christian Kosel, TUM School of Education, Germany; Doris Holzberger, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany</td>
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### SINGLE PAPER: EXPERIMENTAL STUDIES IN INSTRUCTIONAL DESIGN

<table>
<thead>
<tr>
<th>Chair</th>
<th>How can we improve learning from texts? Combining effects of signaling and disfluency on learning</th>
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<tr>
<td>Peter Edelsbrunner, ETH Zurich, Switzerland</td>
<td>Malck Boege, Chemnitz University of Technology, Germany; Steve Nebel, Chemnitz University of Technology, Germany; Sascha Schneider, Chemnitz University of Technology, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany</td>
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<tr>
<td><strong>Preparatory Effects of Problem Solving versus Studying Examples Prior to Instruction</strong></td>
<td>Christian Hartmann, Ruhr University Bochum, Germany; Tamara Van Gog, Utrecht University, Netherlands; Nikol Rummel, Ruhr University Bochum, Germany</td>
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<td><strong>Effects of different learning environments on students’ decision-making competence</strong></td>
<td>Maria Tsapali, University of Cambridge, United Kingdom; Michelle R. Elieetson, University of Cambridge, United Kingdom</td>
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<tr>
<td><strong>Effective and Efficient Example-based Learning: Videos, Texts, or Graphic Novels?</strong></td>
<td>Markus H. Hetter, Bielefeld University, Germany; Inga ten Hagen, Bielefeld University, Germany; Claudia Krense, University of Freiburg, Germany; Kirsten Barthold, University of Bielefeld, Germany; Alexander Renkl, University of Freiburg, Germany</td>
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### Session R: 4  |  Time: 08:30-10:00  |  Location: Seminar Room - S13

**SINGLE PAPER: DOCTORAL AND RESEARCHER EDUCATION**

**Chair**  
Frans Anderson, Aarhus University, Denmark

**PhD students’ mental health and how mental health problems affect their success**  
Els van Rooij, University of Groningen, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands

**A latent profile analysis of PhD supervision styles and types of support**  
Els van Rooij, University of Groningen, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands

**Key considerations in interpreting PhD examiner feedback**  
Allyson Holbrock, The University of Newcastle, Australia; Kerry Daily, SORTI, The University of Newcastle, Australia; Mitch O'Toole, SORTI, The University of Newcastle, Australia; Sue Starfield, Education, University of New South Wales, Australia; Hedy Fairbaim, SORTI, The University of Newcastle, Australia; Terence Lovat, University of Newcastle, Australia

**Career insecurity and self-management during PhD training: A longitudinal study**  
Aida Ališic, RWTH Aachen University, Germany; Christian L. Burk, RWTH Aachen University, Germany; Bettina S. Wiese, RWTH Aachen University, Germany

### Session R: 5  |  Time: 08:30-10:00  |  Location: Seminar Room - S06

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS**

**Chair**  
Caj Niclas Sandström, University of Helsinki, Finland

**The Impact of Learning Strategies on Problem-solving Performance: A Cross-national Comparison Study**  
Hao Wu, University of Szeged, Hungary; Gyorgyver Mohar, University of Szeged, Hungary

**Assessment practices for tomorrow doctoral programs: a systematic review of empirical researches**  
Liliana Silva, University of Bologna, Italy; Massimo Marcuccio, Department of Education Studies “Giovanni Maria Bertin” - Alma Mater Studiorum - University of Bologna, Italy

**Adaptation of Culture in the Civic Online Reasoning Assessment Using Explicit Functional Equivalence**  
Dimitri Melorov, Humboldt-University Berlin, Germany; Olga Ziatkin-Trotschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Susanne Schmidt, Johannes Gutenberg-Universität Mainz, Germany; Marie-Theres Nagel, Johannes Gutenberg-Universität Mainz, Germany; Jana Jursch, Johannes Gutenberg-Universität Mainz, Germany

**Students’ Attitudes Towards Modes of Evaluation**  
Mordechai Miron, Tel Aviv University, Israel

### Session R: 6  |  Time: 08:30-10:00  |  Location: Lecture Hall - H08

**SINGLE PAPER: CASE STUDIES AND INTEGRATED LEARNING IN HIGHER EDUCATION**

**Chair**  
Allison Littlejohn, Open University, United Kingdom

**Interdisciplinary study programs: The importance of program incorporation for study success**  
Anna M. Claus, RWTH Aachen University, Germany; Bettina S. Wiese, RWTH Aachen University, Germany

**A Quantitative and Qualitative Assessment of Students’ Development in One Interdisciplinary Course**  
Merel van Gogh, Utrecht University, Netherlands

**Acquisition of Hardware Reverse Engineering Competency in IT Security – An Explorative Field Study**  
Carina Wesen, Ruhr-Universität Bochum, Germany; Steffen Bocker, Ruhr-University Bochum, Germany; Christof Paar, Ruhr-University Bochum, Germany; Niko Rummel, Ruhr University Bochum, Germany

**Reraming Research Skills for Professional Performance: A case study**  
Miriam Lose, Saxion University of Applied Sciences, Netherlands; Mirjam Trapman, Saxion University of Applied Sciences, Netherlands
### Session R: 7 | Time: 08:30-10:00 | Location: Seminar Room - S12

**SINGLE PAPER: SOCIAL ASPECTS OF LEARNING AND TEACHING**

**Chair**
Andreas Rausch, University of Mannheim, Germany

**The relation between sick leave, staff stability, turnover and quality in Norwegian ECEC provisions**
Thomas Moser, Universitetet i Sørøst-Norge, Norway; Rasmus Kleppa, Oslo Metropolitan University, Norway; Erik Eliassen, Oslo Metropolitan University, Norway; Elisabeth Bjørnestad, Oslo Metropolitan University, Norway

**Psychosocial factors of victimization and bullying: individual and classroom characteristics**
Katja Kolir, University of Maribor, Slovenia

**Teachers' judgments and halo effect: a new measure of halo and an analysis of certainty bias**
Camille Sanrey, Université Grenoble Alpes, France; Pascal Bressoux, Université Grenoble Alpes, France; Laurent Lima, Université Grenoble Alpes, France; Pascal Pansu, Université Grenoble Alpes, France

**A multilevel analysis of classroom talk: Does collaborative instruction matter?**
Melvin Chan, National Institute of Education, Singapore

### Session R: 8 | Time: 08:30-10:00 | Location: Seminar Room - S09

**SINGLE PAPER: SELF-EFFICACY AND MOTIVATION AND EMOTION**

**Chair**
Stephanie Plesch, Technical University of Darmstadt, Germany

**A multi-level investigation of teacher-student relationships, self-efficacy, and outcomes in science**
Emma Burns, University of New South Wales, Australia; Andrew Martin, University of New South Wales, Australia; Rebecca Collie, University of New South Wales, Australia

**An Investigation of Achievement Emotions, Self-Efficacy, and Learning Strategy Use in Mathematics**
Yesim Capa Aydin, Middle East Technical University, Turkey; Basak Calik, Istanbul Medeniyet University, Turkey

**Teacher self-efficacy and collective teacher efficacy: Relations with school context and engagement**
Einar Skaalvik, Norwegian University of Science and Technology, Norway; Sidsel Skaalvik, NTNU - Norwegian University of Science and Technology, Norway

**Is it still worth it? Predicting temporal change in dropout intention by change in study motivation**
Theresa Schnettler, University of Bielefeld, Germany; Julia Bobe, University of Bielefeld, Germany; Anne Scheunemann, University of Bielefeld, Germany; Stefan Fries, University of Bielefeld, Germany; Carola Grunschel, Westfälische Wilhelms-Universität Münster, Germany

### Session R: 9 | Time: 08:30-10:00 | Location: Seminar Room - S01

**SINGLE PAPER: PROBLEM SOLVING IN MATHEMATICS**

**Chair**
Monica Gonzalez-Marquez, RWTH Aachen University, Germany

**Joint attention at teacher gestures during problem solving scaffolding interaction**
Markku Hannula, University of Helsinki, Finland; Eeva Haltaja, University of Helsinki, Finland; Annina Koskinen-Salmin, University of Helsinki, Finland; Milka Toivanen, University of Helsinki, Finland

**Components and levels of mathematical modelling in lower secondary education.**
Sevi Göksen-Zayım, University of Amsterdam, Netherlands; Dark Pik, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands; Rikko Dekker, University of Amsterdam, Netherlands

**Micro Productive Failure Occasions in Mathematics Learning**
Esther Ziegler, ETH Zurich, Switzerland

**Influence of the task representation on problem solving success of primary school children**
Nina Sturm, University of Education Ludwigsburg, Germany
### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY

**Chair**  
Susan Yoon, University of Pennsylvania, United States

**Immediate and delayed effects of a modeling example on the application of good feedback principles**  
Florin van Blankenstein, Leiden University Medical Center, Netherlands; Roeland M. Van der Rijst, ICION-Leiden University Graduate School of Teaching, Netherlands; Nadira Saab, Leiden University, Netherlands

**Meta-Analyses on Relative Metacognition Accuracy and Interventions to Improve It**  
Anja Prinz, University of Freiburg, Germany; Stefanie Golke, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany

**Engaging authenticity: A framework for encountering complex historical sources**  
Lisa Henke, University of Tübingen, Germany; Allison Weller, Columbia University, United States; Christine Baron, Teachers College, Columbia University, United States; Christiane Bertram, University of Konstanz, Germany

**Can pupils’ self-evaluation biases influence teachers’ judgments?**  
Anne-Laure de Place, Université Grenoble Alpes, France; Ludvine Jamain, Université Grenoble Alpes, France; Therese Bouffard, Université du Québec à Montréal, Canada; Pascal Parsu, Université Grenoble Alpes, France

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### SINGLE PAPER: TEACHING AND INSTRUCTION

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

**Validation of a model of place value concepts**  
Moritz Herzog, University of Duisburg-Essen, Germany; Annemarie Fritz-Stratmann, University of Duisburg-Essen, Germany

**The Impact of Mindset-Primining on Student Teachers’ Written and Oral Explanations in Mathematics**  
Matthias Nückles, University of Freiburg, Germany; Mona Weinhuber, University of Freiburg, Germany; Andreas Lachner, University of Tübingen, Germany

**How science outreach contributes to students’ science capital- Teachers’ perspectives.**  
Roberts Zivins, Imperial College London, United Kingdom; Tim Jay, Sheffield Hallam University, United Kingdom; Robert Winston, Imperial College London, United Kingdom

**Associations between pace of letter instruction, teaching practices and children’s literacy skills**  
Kristin Sunde, University of Stavanger, Norway; Kjersti Lundetve, University of Stavanger, Norway

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### SINGLE PAPER: SYNERGIES BETWEEN LEARNING AND TEACHING

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

**Student involvement in the design of learning and teaching: Disentangling the terminology**  
Samantha Martens, Maastricht University, Netherlands; Stephanie Meuwissen, Maastricht University, Netherlands; Diana Dolmans, Maastricht University, Netherlands; Karen Könings, Maastricht University, Netherlands

**An ecological framework for studying interdisciplinary learning: linking culture, activity and mind**  
Lina Markauskaite, University of Sydney, Australia; Monika Nerland, University of Oslo, Norway

**Team-based curriculum design in higher education: A qualitative study of design conversations**  
Inken Gast, Maastricht University, Netherlands; Jan Van der Veen, Twente University, Netherlands; Susan McKenney, University of Twente, Netherlands; Kim Schildkamp, University of Twente, Unknown

**University teachers’ and doctoral students’ visual processing of teaching-learning situations**  
Erkki Anto, University of Turku, Finland; Hanna Vilppu, University of Turku, Finland; Mari Murtonen, University of Turku, Finland; Neea Heimonen, University of Turku, Finland
### Session R: 13
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

**SINGLE PAPER: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Digital Home Learning Environment and its relationship to children’s ICT self-efficacy</th>
<th>Sabrina Bonanati, Paderborn University, Germany; Heike M. Buhl, Paderborn University, Germany</th>
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<tbody>
<tr>
<td></td>
<td>Explorations of Adolescents’ Socio-digital Participation, Networks and Excessive ICT Engagement</td>
<td>Miia Kruckopr, University of Helsinki, Finland; Kai Hakkarainen, University of Helsinki, Finland; Shupin Li, University of Turku, Finland; Kirsti Lonka, University of Helsinki, Finland</td>
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<td>Relationship between early computer use and ICT competence: Evidence from OECD Countries</td>
<td>Lübo Juharik, Masaryk University, Czech Republic; Jiri Zounek, Masaryk University, Czech Republic; Klara Zaleska, Masaryk University, Czech Republic; Ondřej Bárta, Masaryk University, Czech Republic</td>
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<td>How choice options can help to improve learning with digital media by an increase of autonomy</td>
<td>Sascha Schneider, Chemnitz University of Technology, Germany; Steve Nebel, Chemnitz University of Technology, Germany; Maik Beege, Chemnitz University of Technology, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany</td>
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### Session R: 14
**Time:** 08:30-10:00  
**Location:** Seminar Room - S04

**SINGLE PAPER: STUDENTS’ VALUE BELIEFS IN STEM: EVIDENCE FROM CHILDHOOD THROUGH ADOLESCENCE**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Subjective task values and STEM aspirations across middle school</th>
<th>Janica Vinni-Laakso, University of Helsinki, Finland; Jesie Guo, Australian Catholic University, Australia; Jari Lavonen, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland</th>
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<td>Primary school students’ value beliefs in mathematics: Factorial structure and gender differences</td>
<td>Iris Dinkelmann, Thurgau University of Teacher Education, Switzerland</td>
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<td>Teachers’ self-efficacy, student-perceived support and students’ interest in math</td>
<td>Elsa Oppermann, Freie Universität Berlin, Germany; Rebecca Lazarides, University of Potsdam, Germany</td>
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<td>The transmission of motivation from teachers to students: Different mechanisms for different values?</td>
<td>Cora Pannisus, University of Tübingen, Germany; Hanna Gaspar, University of Tübingen, Germany; Heide Piesch, University of Tübingen, Germany; Elke Wille, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany</td>
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### Session R: 15
**Time:** 08:30-10:00  
**Location:** Lecture Hall - H11

**SINGLE PAPER: EARLY CHILDHOOD EDUCATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>What is important for children to have learned when starting school?</th>
<th>Liv Ingrid Aase Håberg, Volda University College, Norway</th>
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<tbody>
<tr>
<td></td>
<td>Compassion in Children’s Peer Interaction</td>
<td>Jaaako Ilipää, University of Helsinki, Finland; Antti Rajala, University of Helsinki, Finland; Lasse Lipponen, University of Helsinki, Finland</td>
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<td>Leading the team of day care centres towards high quality language education</td>
<td>Elisabeth Roa, Free University Berlin, Germany; Ita Ballasch, Freie Universität Berlin, Germany; Yvonne Anders, Freie Universität Berlin, Germany</td>
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### Session R: 16 | Time: 08:30-10:00 | Location: Seminar Room - S16

**SINGLE PAPER: ACHIEVEMENT**

**Chair**
Kristina Kumpulainen, University of Helsinki, Finland

**“What is my next step?” Student perceptions of feedback helpfulness**
Cam Brooks, The University of Queensland, Australia; Rochelle Burton, The University of Queensland, Australia; Yangtai Huang, The University of Queensland, Australia; Annemarie Carroll, The University of Queensland, Australia; John Hattie, The University of Melbourne, Australia

**Phonic Difficulties in Early Education: Implications for Future Reading Performance**
Joshua McGrane, University of Oxford, United Kingdom; Kit Double, University of Oxford, United Kingdom; Jamie Stiff, University of Oxford, United Kingdom; Therese N. Hofterbeck, University of Oxford, United Kingdom

**Assessment policies and academic performance: the role of motivation and self-regulation**
Rob Kickett, Erasmus University Rotterdam, Netherlands; Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Karen Stogens-Jager, Erasmus MC, Institute of Medical Education Research Rotterdam, Netherlands; Gabriela Kuppenol-Gonzalez, Erasmus University Rotterdam, Netherlands; Lidia Arends, Erasmus University Rotterdam, Netherlands; Peter Prinze, Erasmus University Rotterdam, Netherlands

**It takes two hands to clap: Combining grit and educational-goal commitment to predict achievement**
Xin Tang, University of Helsinki, Finland; Jeesi Guo, Australian Catholic University, Australia; Allan Wigfield, University of Maryland, United States; Katarina Salmela-Aro, Helsinki University, Finland

### Session R: 17 | Time: 08:30-10:00 | Location: Seminar Room - S03

**SINGLE PAPER: WRITING AND LITERACY IN HIGHER EDUCATION**

**Chair**
Andreas Lachner, University of Tübingen, Germany

**Effects of a writing fluency training on lower and higher level writing skills**
Sabine Stepfany, University of Cologne, Germany; Evghenia Gotsiev, University of Cologne, Germany; Valerie Lamke, Mercator Institute for Literacy and Language Education, Germany; Marion Krause-Wolters, University of Cologne, Germany; Pia Claas, University of Cologne, Germany; Hilde Haider, Lehrstuhl für Angewandte Psychologie I, Germany; Hans-Joachim Roth, University of Cologne, Germany; Michael Becker-Mrozewski, University of Cologne, Germany

**Validation of the Writing Process Questionnaire in the Estonian context**
Djuidah Leijen, University of Tartu, Estonia; Anni Jürino, University of Tartu, Estonia; Gerli Slim, University of Tartu, Estonia; Adriano Augusto, University of Tartu, Estonia

**A cognitive load perspective on the effectiveness of collaborative writing**
Elke Van Steendam, KU Leuven, Belgium; Elise Drijbooms, KU Leuven, Netherlands; Huub Van den Bergh, Universiteit Utrecht, Netherlands; Gert Rijlaarsdam, University of Amsterdam, Netherlands

**Improving university students’ written argumentation via recursive reading: An intervention study**
Christian Tarchi, University of Florence, Italy; Ruth Villalon, University of Cantabria, Spain

### Session R: 18 | Time: 08:30-10:00 | Location: Seminar Room - S07

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, MOTIVATION AND EMOTION**

**Chair**
Barbara Boohe, Ludwig Maximilians-Universität (LMU), Germany

**Trajectories of Social Media Use Across Adolescence and their relation to academic well-being**
Erika Maksimi, University of Helsinki, Finland; Lauri Hetajärvi, University of Helsinki, Finland; Kirsi Lonka, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

**Attention bias in test anxiety: The moderating effect of approach-avoidance temperament**
Wendy Symes, University of Birmingham, United Kingdom; Dave Putwain, Liverpool John Moores University, United Kingdom

**The role of temperament in secondary students’ mathematics interest, strain, and effort**
Anna Rawlings, University of Helsinki, Finland; Anna Tapola, University of Helsinki, Finland; Markku Niemivirta, University of Oslo, Norway

**The role of mental health in adaptive regulation of learning and student success**
Sarah Davis, University of Victoria, Canada; Alyson Hadwin, University of Victoria, Canada; Rebecca Edwards, University of Victoria, Canada; Todd Milford, University of Victoria, Canada
## Session R: 19
### Time: 08:30-10:00
### Location: Seminar Room - S14

### SINGLE PAPER: PARENTAL INVOLVEMENT AND COMPETENCIES

<table>
<thead>
<tr>
<th>Chair</th>
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<tr>
<td>Matias Rojas, Pontificia Universidad Católica de Chile</td>
<td><strong>Non scholæ sed vitae!? Parents’ educational values, future prospects, and parenting behaviour</strong> Kerstin Helker, RWTH Aachen University, Germany</td>
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<td><strong>Students’ well-being and competencies after school transition</strong>  Michaela Glaeser-Zikuda, University of Erlangen-Nuremberg, Germany; Ramona Obermeier, Institute for Educational Science, University of Erlangen-Nuremberg, Germany</td>
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<td><strong>Parental involvement and homework quality and control on children’s homework motivation and behavior</strong> Claudia Kastens, Bergische University Wuppertal, Germany</td>
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<td><strong>Development of the comprehension of clause connectors of German primary school children</strong> Anna Volodina, University of Bamberg, Germany; Sabine Weinert, University of Bamberg, Germany; Birgit Hepp, Humboldt-Universität zu Berlin, Germany</td>
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## Session R: 20
### Time: 08:30-10:00
### Location: Lecture Hall - H09

### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN HIGHER EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
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<tr>
<td>Roco García-Carrion, University of Deusto, Spain</td>
<td><strong>The origins of feedback and its strange metaphorical use in education</strong> David Boud, University of Technology Sydney/Deakin University, Australia; Joanna Tai, Deakin University, Australia</td>
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<td><strong>A comparison of summative and formative use of self-assessment in higher education</strong> Juuso Henrik Näsminen, University of Helsinki, Finland; Henna Askainen, University of Helsinki, Finland; Johanna Rämö, University of Helsinki, Finland</td>
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<td><strong>Towards a more embedded view on situations in educational research</strong> Carla Bohndick, University of Hamburg, Germany; Gabriela Blum, University of Koblenz-Landau, Germany</td>
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<td><strong>Effects of feedback and increased autonomy in computer-based assessment: A large-scale experiment</strong> Mari-Paulina Vainikainen, Tampere University, Finland; Sanna Oinas, University of Helsinki, Finland; Milko Askainen, University of Helsinki, Finland; Heleena Thuneberg, University of Helsinki, Finland</td>
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</tbody>
</table>

## Session R: 21
### Time: 08:30-10:00
### Location: Seminar Room - S02

### SINGLE PAPER: STUDENT LEARNING IN HIGHER EDUCATION

<table>
<thead>
<tr>
<th>Chair</th>
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<tbody>
<tr>
<td>Edith Braun, Justus-Liebig Universität Giessen, Germany</td>
<td><strong>Interprofessional education - development of university students’ concept-level learning</strong> Erika Österholm, University of Turku, Finland; Mari Murtonen, University of Turku, Department of Teacher Education, Finland; Tuke Isikala, University of Turku, Finland; Outi Kortekangas-Savolainen, University of Turku, Finland</td>
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<td><strong>Self-regulated learning among international students: An analysis of learning strategy profiles</strong> Hüseyin Hilmi Yıldırım, FernUniversität in Hagen, Germany; Julia Zimmermann, FernUniversität in Hagen, Germany; Kathrin Jonkmann, FernUniversität in Hagen, Germany</td>
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<td><strong>Exploring approaches to learning in the PhD context</strong> Teile Haikka, University of Helsinki, Finland; Anna Parpala, University of Helsinki, Finland; Lisa Postareff, University of Turku, Finland</td>
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<td><strong>Validation of a scale to measure informal learning among students</strong> Julian Decius, University of Paderborn, Germany; Nicos Schaper, University of Paderborn, Germany</td>
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</tbody>
</table>
SINGLE PAPER: EDUCATIONAL POLICY

Chair
Jasperina Brouwer, University of Groningen, Netherlands

Impact of tracking on school experience, attitudes and learning progress of upper secondary students
Jana Strakova, Charles University, Czech Republic; Jaroslava Simonova, Institute for Research and Development of Education, Faculty of Education, Charles University in Prague, Czech Republic

Impact of preschool and early childhood provision on children’s development in Rio de Janeiro
Mariane Campelo Kostinski, Federal University of Rio de Janeiro, Brazil; Tiago Bartholo, Federal University of Rio de Janeiro, Brazil

Teacher perceptions of English learner students and the moderating role of bilingual education
Hanna Dumont, DIPF / Leibniz Institute for Research and Information in Education, Germany; Ilana Ulamzky, University of Oregon, United States

Improving school administration through information technology?
Eveline Wittmann, Technische Universität München, Germany; Markus Dormann, Fernfachhochschule Schweiz, Switzerland

SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION AND TEACHER PROFESSIONAL DEVELOPMENT

Chair
Mikko Aro, University of Jyväskylä, Finland

Preservice Teachers’ Professional Vision for and Capacity to Teach SRL: Effects of Scaffolding Level
Tova Michalsky, Bar-Ilan University, Israel

Reflective practice and role concepts of mentors in Hungarian initial teacher education
Kinga Kaplan-Kotaczy, Eötvös Loránd University, Hungary; Helga Dorner, Central European University, Hungary

Potentials and Challenges of International PhD-Programs in Teacher Education
Christian Krämer, Teacher Education and School Research, Austria; Vaskíkos Symeonidís, University of Innsbruck, Austria; Irma Elloff, University of Pretoria, South Africa

Video-based competence assessment in the vocational training course in metal technology (ViKobel MT)
Felix Walker, Technical University of Kaiserslautern, Germany; Andrea Faath-Becker, Technical University of Kaiserslautern, Germany

SYMPOSIUM: DIFFERENTIATED INSTRUCTION FROM THE PRESENT TO THE FUTURE

Chair
Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium

Organisers
Júlia Grifil Freixenet, Vrije Universiteit Brussel (VUB), Belgium; Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium

Discussant
Anouschka van Leeuwen, Utrecht University, Netherlands

Capturing the Complexity of Differentiated Instruction
Trynke Keuring, University of Twente, Netherlands; Marieke van Geel, University of Twente, Netherlands

Measuring pre-service teachers’ perceptions and actions of differentiated instruction
Júlia Grifil Freixenet, Vrije Universiteit Brussel (VUB), Belgium; Wendellen Vanhengem, Vrije Universiteit Brussel, Belgium; Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium

What factors can influence teachers’ use of differentiated instruction?
Marcela Gerardina Pozas Guajardo, Universität Trier, Germany; Christoph Schneider, University of Trier, Germany

Differenial instruction in primary and secondary schools: From noticing to adapting teaching
Katrien Struyven, Hasselt University / Vrije Universiteit Brussel, Belgium; Esther Gheyssens, Vrije Universiteit Brussel, Belgium; Els Consuegra, Vrije Universiteit Brussel, Belgium; Nadine Engels, Vrije Universiteit Brussel (VUB), Belgium
### Session S: 2
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H09

#### SYMPOSIUM: DIMENSIONAL COMPARISONS THROUGH THE LENS OF THE GENERALIZED I/E MODEL: RECENT DEVELOPMENTS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Assimilation and Contrast Effects of Dimensional Comparisons in Self-Concepts, Interests &amp; Anxieties</th>
</tr>
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<tbody>
<tr>
<td>Christoph Niepel, University of Luxembourg, Luxembourg</td>
<td>Lindie van der Westhuizen, University of Luxembourg, Luxembourg; Katrin Arens, German Institute for International Educational Research / DIPF, Germany; Samuel Greiff, University of Luxembourg, Luxembourg; Antoine Fischbach, University of Luxembourg, Luxembourg; Christoph Niepel, University of Luxembourg, Luxembourg</td>
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<tr>
<td>Organiser</td>
<td>Dimensional Comparison Effects on Facets of Subject-Specific Anxieties: A Nested Modelling Approach</td>
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<td>Christoph Niepel, University of Luxembourg, Luxembourg</td>
<td>Irma Tako, University of Luxembourg, Luxembourg; Jörn Sparfeld, Saarland University, Germany; Jens Möller, University of Kiel, Germany; Samuel Greiff, University of Luxembourg, Luxembourg; Christoph Niepel, University of Luxembourg, Luxembourg</td>
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<tr>
<td>Discussant</td>
<td>Testing the Effect of Subject Similarity on Dimensional Comparison Effects in the 2I/E Model</td>
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<tr>
<td>Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland</td>
<td>Fabian Wolff, University of Kiel, Germany; Jens Möller, University of Kiel, Germany</td>
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<td>The Role of Domain Similarity in the Longitudinal Interplay Among Achievement and Self-Concept</td>
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<td>Fabio Sticco, Marie Meierhofer Children’s Institute, Switzerland; Thomas Geist, University of Konstanz, Germany; Richard Shavelson, Stanford University, United States; Franz Eisele, University of Zurich, Switzerland; Jens Möller, University of Kiel, Germany</td>
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### Session S: 3
**Time:** 10:15-11:45  
**Location:** Seminar Room - S10

#### SYMPOSIUM: ASSESSING TEACHERS’ KNOWLEDGE, BELIEFS, AND SELF-EFFICACY ABOUT PROMOTING SRL

<table>
<thead>
<tr>
<th>Chair</th>
<th>Pre-service Teachers’ Belief Systems with Respect to the Self-Regulation of Learning</th>
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<tr>
<td>Charlotte Dignath, Goethe-University Frankfurt, Germany</td>
<td>Stella Vosniadou, Flinders University, Australia; Michael Lawson, Flinders University, Australia; Mirella Wyra, Flinders University, Australia; Penny Van Deur, Flinders University of South Australia, Australia; David Jeffreys, College of Education, Psychology and Social Work, Flinders University, Australia</td>
</tr>
<tr>
<td>Discussant</td>
<td>Teachers’ diagnostic and coaching skills in self-regulated learning Do beliefs and knowledge matter?</td>
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<tr>
<td>Anat Zohar, Hebrew University, Israel</td>
<td>Yves Karni, 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</td>
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<tr>
<td></td>
<td>Development and validation of the teacher self-efficacy scale to implement self-regulated learning</td>
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<td>Hilde Van Keer, Ghent University, Belgium; Mona De Smul, University of Ghent, Belgium; Sofie Heirweg, Ghent University, Belgium; Geert Devos, Ghent University, Belgium; Sabrina Vanderveldt, Ghent University, Belgium</td>
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<td>Assessing teachers’ knowledge about self-regulation during learning</td>
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<td>Charlotte Dignath, Goethe-University Frankfurt, Germany; Max Seidel, Goethe-University Frankfurt, Institute of Psychology, Germany; Mareike Kunter, Goethe-Universität Frankfurt, Germany</td>
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</tbody>
</table>

### Session S: 4
**Time:** 10:15-11:45  
**Location:** Lecture Hall - H08

#### SYMPOSIUM: FUNCTIONS OF RELATIONAL QUALITY FOR LEARNING, TEACHING, AND LEARNING TO TEACH

<table>
<thead>
<tr>
<th>Chair</th>
<th>The significance of parents’ and teachers’ social support for students’ depression and deviance</th>
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<tbody>
<tr>
<td>Paul Swan, Monash University, Australia</td>
<td>Denise Küchel, Schuljugendforschung Universität Potsdam, Germany; Charott Rubach, University of Potsdam, Germany; Anna-Lena Dicks, University of California, United States; Laura Lewis, The University of Oklahoma, United States; Sandra Simkins, University of California, United States; Jacquelynne Eccles, University of California, United States</td>
</tr>
<tr>
<td>Organisers</td>
<td>Teacher relational quality and manifestations of empathy in Australian primary classrooms</td>
</tr>
<tr>
<td>Charott Rubach, University of Potsdam, Germany; Paul Swan, Monash University, Australia; Ji Hong, University of Oklahoma, United States; Gerda Hagenauer, University of Salzburg, Austria</td>
<td>Paul Swan, Monash University, Australia</td>
</tr>
<tr>
<td>Discussant</td>
<td>Various Dispositions of Teacher Empathy in Culturally Diverse Classrooms</td>
</tr>
<tr>
<td>Diana Raufedder, University Greifswald, Germany</td>
<td>Ji Hong, University of Oklahoma, United States; Dionne Cross Francis, Indiana University, United States; Crystal Neill, The University of Oklahoma, United States; Laura Lewis, The University of Oklahoma, United States; Alexandra Parsons, The University of Oklahoma, United States; Qian Wang, The University of Oklahoma, United States</td>
</tr>
<tr>
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<td>Developing relational quality for student teachers and mentors in the pedagogical internship</td>
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<tr>
<td></td>
<td>Gerda Hagenauer, University of Salzburg, Austria; Jennifer Waber, University of Bern, Switzerland; Lea de Zordo, University of Teacher Education Bern, Switzerland</td>
</tr>
</tbody>
</table>
### Session S: 5

**Time:** 10:15-11:45  
**Location:** Lecture Hall - H06 - Amazon Hörsaal

#### SYMPOSIUM: APPLICATIONS OF EFFECTIVE LEARNING STRATEGIES IN EDUCATIONAL PRACTICE

**Chair**  
Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands

**Organiser**  
Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands

**Discussant**  
Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands

**Supporting Students' Application of Learning Strategies**  
Tino Endres, University of Freiburg, Germany; Corneliis Böttger, Justus-Liebig-Universität Giessen, Germany; Alexander Renki, University of Freiburg, Germany

**Guidelines for Effective Use of Formative Tests in the Classroom**  
Kim Dirx, Open University, Netherlands; Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands; Desirée Joosten-ten Brinke, Open University of the Netherlands, Netherlands

**The Role of Material Complexity and Learner Ability on Determining the Optimal Learning Schedule**  
Carolina Kuepper-Tetzl, University of Dundee, United Kingdom

**Comparing Formative and Summative Cumulative Compensatory Assessment in an Engineering Course**  
Peter Verkoejen, Erasmus University Rotterdam, Netherlands

### Session S: 6

**Time:** 10:15-11:45  
**Location:** Lecture Hall - H05

#### SYMPOSIUM: INHIBITORY ABILITIES AND ACADEMIC PERFORMANCE: NEW MEASUREMENT AND ANALYTICAL APPROACHES

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

**Discussant**  
Grégoire Borst, Université de Paris - CNRS, France

**Kindergarteners' error monitoring in the context of a classical inhibition task**  
Claudia Roebers, University of Bern, Switzerland

**Inhibitory abilities in overcoming intuitive interference**  
Reuven Babai, Tel Aviv University, Israel; Nahed Younis, Tel Aviv University, Israel; Ruth Stavy, Tel Aviv University, Israel

**Is inhibitory control related to individual differences in arithmetic?**  
Bert De Smedt, KU Leuven, Belgium; Elen Belton, KU Leuven, Belgium; Wim Fias, University of Ghent, Belgium

**A comparison of longitudinal approaches to the analysis of data on inhibition and math performance**  
Kerry Lee, The Education University of Hong Kong, Hong Kong

### Session S: 7

**Time:** 10:15-11:45  
**Location:** Lecture Hall - H07

#### SYMPOSIUM: THE NAMING OF CLASSROOM PHENOMENA - INTERNATIONAL PERSPECTIVES ON TEACHERS' PROFESSIONAL VOCABULARY

**Chair**  
Marita Eva Friesen, Ludwigsgurg University of Education, Germany

**Organiser**  
Søren-Matias Haynes, Norwegian University of Science and Technology (NTNU), Norway

**Discussant**  
Synnevåg Matre, Norwegian University of Science and Technology, Norway

**A Comparison of Australian Preservice and In-service Teachers’ Professional Vocabulary**  
Carmel Mesiti, University of Melbourne, Australia; David Clarke, The University of Melbourne, Australia

**Preservice Teachers’ Professional Vocabulary: Reflections on International Practice Experiences**  
Kari Culligan, University of New Brunswick, Canada

**Professional vocabulary used in mentoring conversations with preservice mathematics teachers**  
Søren-Matias Haynes, Norwegian University of Science and Technology (NTNU), Norway

**Preservice teachers’ professional vocabulary changes when they learn to analyse classroom situations**  
Marita Eva Friesen, Ludwigsgurg University of Education, Germany; Carmel Mesiti, University of Melbourne, Australia; Sebastian Kuntze, Ludwigsgurg University of Education, Germany
### SYMPOSIUM: FACTORS INFLUENCING SOURCE PREFERENCE AND EVALUATION WHEN DEALING WITH EXPERT KNOWLEDGE

**Chair**
Eva Thomm, University of Erfurt, Germany

**Organisers**
Eva Thomm, University of Erfurt, Germany; Friederike Hendriks, University of Münster, Germany

**Discussant**
Marc Stadler, University of Bochum, Germany

**Supporting Comprehension of Multiple Texts Through Engagement in Dialogic Argumentation**
Kalypos Iordanou, University of Central Lancashire, Cyprus

**The Impact of Topic Familiarity and Disagreement Explanation on Source Evaluation**
Sarit Barciilai, University of Haifa, Israel; Talia Shalom-Eliad, University of Haifa, Israel; Eva Thomm, University of Erfurt, Germany

**Do Insights Into Research Methods Affect Trust in Scientists and Deference to Experts?**
Friederike Hendriks, University of Münster, Germany; Regina Jucks, WWU Münster, Germany

**Examining Predictors of Source Preferences in Empirical Educational Research**
Eva Thomm, University of Erfurt, Germany; Andreas Lederer, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany

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### SINGLE PAPER: LANGUAGE LEARNING AND TEACHING IN CULTURALLY DIVERSE SETTINGS

**Chair**
Yuichi Uesaka, The University of Tokyo, Japan

**Student Characteristics of French as a Second Language Programs in Canada**
Diana Burchell, OISE, University of Toronto, Canada; Erhan Sinay, Toronto District School Board, Canada; Christopher Barron, OISE/University of Toronto, Canada

**Stakeholder Perception of French Language Programs in the Toronto District School Board**
Diana Burchell, OISE, University of Toronto, Canada; Xi Chen, OISE/University of Toronto, Canada; Erhan Sinay, Toronto District School Board, Canada; Amie Presley, Toronto District School Board, Canada; David Cameron, Toronto District School Board, Canada; Thomas Ryan, Nipissing University, Canada

**Intervention of pretend play on children’s self-regulation and language skills**
Tanya Paes, University of Cambridge, United Kingdom; Michelle Ellefson, Cambridge University, United Kingdom

**Language Skills of Bilingual and Trilingual Students in Canadian French Immersion**
Diana Burchell, OISE, University of Toronto, Canada; Bonita Squires, Dalhousie University, Canada; Patricia Cleave, Dalhousie University, Canada; Janani Selvachandran, OISE/University of Toronto, Canada; Xi Chen, OISE/University of Toronto, Canada

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### SINGLE PAPER: METACOGNITION, SELF-REGULATION AND READING COMPREHENSION

**Chair**
Jelena Radosic, University of Oslo, Norway

**Screen or paper? The effect of reading medium on children's comprehension and meta-comprehension**
Veerol Halaman, Bar-Ilan University, Israel; Elsya Elbaz, Bar-Ilan University, Israel

**Everything is Easy with the Internet! Conditions of Metacognitive Overestimation with Internet Use**
Stephanie Pieschl, Technical University of Darmstadt, Germany; Janene Budd, University of Newcastle, Australia

**The effect of metacognitive use of learning strategies on student test performance**
Erko Ota, University of Tokyo, Japan; Emmanuel Manalo, Kyoto University, Japan; Natalia Sánchez Fernández, University of Oviedo, Spain

**Using fNIRS in a Multitrait-multimethod Investigation of Strategic Processing during Reading**
Daniel Dinsmore, University of North Florida, United States; Jesse Macyszko, University of North Florida, United States; Sabrina Greene, University of North Florida, United States; Katherine Hooper, University of North Florida, United States
### Single Paper: Online Measures of Learning Processes

**Chair**
Michael Sailer, Ludwig Maximilians-Universität, Germany

**Integration Specificity: An Investigation of Objective and Open-Ended Assessments**
Alexandra List, The Pennsylvania State University, United States

**Navigation Strategies in Multimedia Environments in Dyslexia: A Developmental Perspective**
Carolien A. N. Knooop-van Campen, Radboud University Nijmegen, Netherlands; Ekane Siegers, Radboud University Nijmegen / University of Twente, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands

**Eye Movements Reflect Musicians’ Planning for Local Embellishments during Music Reading**
Marjaana Puurinen, University of Turku, Finland; Erki Anto, University of Turku, Finland; Anna-Kaisa Ylitalo, Natural Resources Institute Finland, Finland; Erki Huovinen, Royal College of Music in Stockholm, Sweden; Hans Gruber, University of Regensburg, Germany; Suvi Heinonen, University of Jyväskylä, Finland; Hanna Turtia, University of Turku, Finland

**Predicting Tutorial Viewing Time from Online Cognitive States in Learning to Play a New Video Game**
Julien Mercier, University of Quebec in Montreal, Canada; Ange-Adrienne Nyam-Tato, Université du Québec à Montréal (UQAM), Canada; Matthias Martin, Université du Québec à Montréal (UQAM), Canada; Daniel Rivas, Université du Québec à Montréal (UQAM), Canada

### Single Paper: Teacher Effectiveness

**Chair**
Claudia Krille, Goethe University Frankfurt, Germany

**Teachers’ Theories of Intelligence and Pedagogical Practice in English Secondary Education**
Chloe Cutter, Liverpool John Moores University, United Kingdom; Dave Purwan, Liverpool John Moores University, United Kingdom; Andrea Mallabrum, Liverpool John Moores University, United Kingdom; Angela Daly, Liverpool John Moores University, United Kingdom

**School Resources for Teaching: How Between-School Variance in Instructional Quality Can Be Explained**
Doris Holzberger, Technical University of Munich (TUM), Germany

**The Predictive Role of Teacher Emotions in Learner Autonomy Support**
Coran Kop, Cumhuriyet University, Turkey

**The Role of Self-Regulatory Preferences in Teachers’ Willingness to Innovate**
Emily Hoch, Leibniz-Institut für Wissensmedien, Germany; Steffen Schmiedgaß, Leibniz-Institut für Wissensmedien, Germany; Kai Sassenberg, Leibniz-Institut für Wissensmedien, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany

### Single Paper: Pre-Service Teacher and Science Education

**Chair**
Rui He, University of Glasgow, United Kingdom

**Novice Teachers’ Appropriation of Ambitious Teaching Practices for High-Level Student Thinking**
Miryam Tekkumru-Kisa, Florida State University, United States; Sebnem Atabas, Florida State University, United States; Ryan Coker, Florida State University, United States

**Boundary Crossing: Impact of a University-STEM Industry Engagement on Secondary Students in Science**
Carol Aldous, Flinders University, Australia

**Making Theory-Practice-Connection More Visible by Using Videotaped Role-Playing in Academic Settings**
Dagmar Festner, University of Paderborn, Germany; Bianca Steffen, University of Paderborn, Germany

**Learning to Evaluate Instructional Materials for Inquiry-Based Education by Comparing Examples**
Marco Longhi, University of Teacher Education, Switzerland; Judith Arnold, Schwyz University of Teacher Education, Switzerland; Rachel Schwager, Pädagogische Hochschule Schwyz, Switzerland; Lennart Schall, PH Schwyz, Switzerland
### Session S: 14  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S09

#### SINGLE PAPER: CULTURAL DIVERSITY IN SCHOOLS

**Chair**
Anna Lena Rottweiler, Augsburg University, Germany

**Teacher's perceptions about multilingualism and spontaneous translanguaging during a lesson**
Tarja-Ritta Hurme, University of Turku, Finland; Jenni Alisaari, University of Turku, Department of Teacher Education, Finland; Sara Routarinen, University of Turku, Department of Teacher Education, Finland

**Teaching in Multicultural Classes: (Prospective) Teachers' Attitudes and Self-Efficacy Beliefs**
Andreas Oertberger, DZHW - German Centre for Research on Higher Education and Science Studies, Germany; Claudia Menge, German Centre for Higher Education Research and Science Studies (DZHW), Germany; Hildegard Schaeper, DZHW - German Centre for Higher Education Research and Science Studies, Germany; Thorsten Euler, German Centre for Higher Education Research and Science Studies (DZHW), Germany

**The Relevance of Parental, Peer, and Teacher Support for at-risk Students’ School Engagement**
Zuzanna M. Preusche, University of Düsseldorf Essen, Germany; Kerstin Göbel, University of Düsseldorf Essen, Germany

**Inter-agency working for inclusive education: Facilitating factors, challenges and impacts**
Catarina Leitão, University of Coimbra, Portugal; Joana Guerra, University of Coimbra, Portugal; Clara Barata, University of Coimbra, Portugal

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### Session S: 15  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S06

#### SINGLE PAPER: PRIMARY EDUCATION

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

**The Role of Pronounced and Perceived Parental Feedback on Children’s Reading Comprehension**
Fabian Höya, Paderborn University, Germany; Frank Heilrich, Paderborn University, Germany

**Self-Perceptions and Engagement in Low Socioeconomic Status, Immigrant, and Anxious Students**
Vanessa Kurti, University of Reading, United Kingdom; Isabelle Archambault, Université de Montréal, Canada

**Student- and Task-Related Predictors of Students’ Perceptions of Cooperative Learning Activities**
Jolien Mouw, Rijksuniversiteit Groningen, Netherlands; Nadra Saab, Leiden University, Netherlands; Ron Pat El, Open University, Netherlands; Paul Van den Broek, Leiden University FSW, Netherlands

**Inclusion: The Parent’s view on special educational support in inclusive classrooms**
Reto Luder, Zurich University of Teacher Education, Switzerland; Andre Kunz, Zurich University of Teacher Education, Switzerland; Aline Paccoud, PH Zurich, Switzerland

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### Session S: 16  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S03

#### SINGLE PAPER: INSTRUCTIONAL DESIGN IN MULTIMEDIA LEARNING

**Chair**
Rosa Hettmannsperger, Goethe-University Frankfurt, Germany

**Perceptual influences in graphics processing**
Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France; Richard Lowe, Curtin University, Australia

**Semantically congruent vision and audition: Impact on perception, long-term memory, and learning**
Hauke S. Meyerhoff, Leibniz-Institut für Wissensmedien, Germany; Stephan Schwän, Leibniz-Institut für Wissensmedien, Germany

**Empowering Learners: Teaching a Mental Integration Strategy Supports Learning From Text and Pictures**
Björn de Koning, Erasmus University Rotterdam, Netherlands; Geritjan Rop, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands

**Colour harmony in hypermedia: impact on visual attention and implicit memory**
Julien Venni, University of Geneva, Switzerland; Mireille Betrancourt, University of Geneva, Switzerland
### Session S: 17  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S15  

**SINGLE PAPER: CULTURAL DIVERSITY IN SCHOOLS**

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<th>Chair</th>
<th>Topic</th>
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</table>
| Lenka Schnaubert       | Cultural diversity and Othering: Understanding the dynamics of teachers’ discourses  
Nikoletta Szleci, University of Lisbon, Portugal  

A Systematic Review of Chinese-as-an-additional-language Research in Hong Kong from 1997 to 2017  
Chun Sum Samuel Tsang, University of Oxford, Hong Kong  

The effect of child and parental acculturation on immigrant students’ academic achievement  
Narine Lilla, Freie Universität Berlin, Germany; Sebastian Thüner, Freie Universität Berlin, Germany; Wim Nieuwenboom, Otto Friedrich University Bamberg / FHNW Switzerland, Switzerland; Marianne Schuepbach, Freie Universität Berlin, Germany  

Pre-service Teachers’ Learning to Reflect Critically for Culturally Responsive Teaching  
Duygu Umohlu, University of Georgia, Turkey; ChanMin Kim, Penn State University, United States |

### Session S: 18  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S01  

**SINGLE PAPER: LIFELONG LEARNING**

<table>
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<th>Chair</th>
<th>Topic</th>
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</table>
| Frank Heilmich        | Assessing opportunity recognition competence  
Chiara Birk, Ludwig-Maximilians-Universität München (LMU), Germany; Susanne Weber, Ludwig-Maximilians-Universität, Germany; Christine Kreuzer, Ludwig-Maximilians-Universität (LMU), Germany; Yvette Baggen, Utrecht University, Netherlands  

Learning through entrepreneurship: towards alignment in ‘wide’ entrepreneurship education programs  
Thomas Lans, Wageningen University and Research Centre, Netherlands; Judith Gulinke, Wageningen University, Netherlands  

Measuring task mental models of teams in different domains to capture opportunity recognition  
Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany; Andreas Widmann, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany  

The right measure? Linguistic development through the lifetime  
Victoria Johansson, Lund University, Sweden |

### Session S: 19  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S12  

**SINGLE PAPER: STUDIES ON MOTIVATION BEYOND PRIMARY EDUCATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Topic</th>
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</table>
| Andreas Vorholzer      | Towards a refined insight in the shifts in adolescents' motivational profiles: A longitudinal study  
Joachim Waterschoot, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Karine Verschuere, KU Leuven, Belgium; Bart Scenese, Ghent University, Belgium  

Short-term changes in students’ motivations in math-intensive courses and links to academic success  
Dara Katharina Benden, TU Dortmund University, Germany; Fari Lauermann, University of Bonn, Germany  

Short-term changes in preservice teachers’ intrinsic motivation in an educational psychology lecture  
Eva Selfried, Heidelberg University, Germany; Eva Bosch, Heidelberg University, Germany; Birgit Spinath, Heidelberg University, Germany  

Contextual influences on beginning teachers’ professional engagement and satisfaction  
Paul Richardson, Monash University, Australia; Helen Watt, University of Sydney, Australia |

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**FRIDAY, 16 AUGUST 2019**

140
**Session S: 20**  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S14

### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY

**Chair**  
Eva Lindgren, Umeå University, Sweden

- **Gender Self-concept, Stress, Life Satisfaction, and School Success for New Zealand Adolescents**  
  Penelope Watson, University of Auckland, New Zealand; Valorie Sotardi, University of Canterbury, New Zealand

- **Parental control as a protective factor for cyber-victimisation in Secondary Education**  
  Trinidad García, University of Oviedo, Spain; David Álvarez-García, Oviedo University, Spain; Zara Suárez-García, University of Oviedo, Spain; Marisol Cueli, Universidad de Oviedo, Spain

- **Psychometric Validation of the Grit Questionnaire in a Sample of Adult Distance Education Students**  
  Kate Xu, Welten Institute - Open University of the Netherlands, Netherlands; Celeste Meijis, Open University, Netherlands; Joyce Neróni, Open University of the Netherlands, Netherlands; Jérôme Gijseelaers, Welten Institute Open University of the Netherlands, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands

- **The relationship between problematic smartphone use and students’ cognitive lesson avoidance**  
  Anrild Nagel, University of Teacher Education St.Gallen, Switzerland; Horst Biedermann, University of Teacher Education St.Gallen, Switzerland

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**Session S: 21**  
**Time:** 10:15-11:45  
**Location:** Seminar Room - S04

### SINGLE PAPER: ANTECEDENTS OF STUDENTS’ EMOTIONS

**Chair**  
Christine Rubie-Davies, University of Auckland, New Zealand

- **The impact of TBL on enhancing emotions and learning engagement of university students**  
  Lan Yang, The Education University of Hong Kong, Hong Kong

- **Boredom and online multiple-text comprehension in primary school**  
  Daniela Raccanelli, University of Verona, Italy; Elena Flori, University of Padova, Italy; Margherita Brondino, University of Verona, Italy; Lucia Mason, University of Padova, Italy

- **Effects of learning environments on students’ achievement emotions**  
  Lara Forsslom, ISPA-Instituto Universitário, Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal

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**Session T: 1**  
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H11

### SIG INVITED SYMPOSIUM: SIG 1: INTRAPERSONAL, INTERPERSONAL, AND SITUATIONAL FACTORS IN FEEDBACK PROCESSING

**Chair**  
Jan-Willem Strijbos, University of Groningen, Netherlands

**Organisers**  
Frans Prins, Utrecht University, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

**Discussant**  
Frans Prins, Utrecht University, Netherlands

- **A preliminary feedback provision and processing model**  
  Jochum Aaben, University of Groningen, Netherlands; Filtsa Dingyloudi, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

- **Studying productive feedback through a sociocultural lens**  
  Rachelle Esterhazy, University of Oslo, Norway

- **Social dimensions of feedback processing: Memory for ‘stern’ and ‘supportive’ performance feedback**  
  Naomi Winstone, University of Surrey, United Kingdom

- **Connecting feedback to self-efficacy: Differences between pre-service and expert teachers**  
  Christoph Neil Pruitl, Leuphana University Lueneburg, Germany; Kira Elena Wetter, Leuphana University Lueneburg, Germany; Anna Altmann, University of Freiburg, Germany; Matthias Nüklees, University of Freiburg, Germany; Marc Kleinheinle, Leuphana University Lueneburg, Germany
SIG INVITED SYMPOSIUM: SIG 8: EMOTIONS IN EDUCATION: STATE OF THE ART, CHALLENGES, AND NEW DIRECTIONS

Chair
Hanne Korpershoek, University of Groningen, Netherlands
Organisers
Hanne Korpershoek, University of Groningen, Netherlands; Reinhard Pekrun, Ludwig Maximilians-Universität, Germany; Fanni Lautermann, University of Bonn, Germany; Kristina Loderer, Ludwig Maximilians-Universität, Germany
Discussant
Reinhard Pekrun, Ludwig Maximilians-Universität, Germany

Which intra-individual methods reveal, or obfuscate, mixed emotions?
Julia Moeller, Universität Leipzig, Chad

Role, function and temporal manifestation of emotion regulation in collaborative learning
Hanna Jarvenoja, University of Oulu, Finland; Tiina Törnänen, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

Emotions, Self-Regulated Learning, and Advanced Learning Technologies
Michele Tauri, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States

Teacher Emotions: Some new evidence from a quantitative research program
Anne Christiane Frenzel, University of Munich, Germany

SYMPOSIUM: SYSTEMATIC CLASSROOM OBSERVATIONS

Chair
Marja-Kristina Lenkkäri, University of Jyväskylä, Finland
Organiser
Tuomo Virtanen, University of Stavanger, Norway, Norway
Discussant
Lars Erik Malmberg, University of Oxford, United Kingdom

The quality of interactions in arts-related activities
Joana Cadima, University of Porto, Portugal; Matilda Alvim, University of Porto - Portugal, Portugal; Teresa Aguier, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Portugal; Carolina Guedes, University of Porto, Portugal; Cecília Aguier, ISCET - Instituto Universitário de Lisboa, Portugal; Clara Barata, University of Coimbra, Portugal

The quality of teacher-child interactions in relation to task-focused behaviors
Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristina Lenkkäri, University of Jyväskylä, Finland; Antje von Suchodoletz, New York University Abu Dhabi, United Arab Emirates

Observed and teacher perceived classroom interactions
Sigrun K. Ertesväg, University of Stavanger, Norway; Grete Sverrisen Vaaland, University of Stavanger, Norway

Observation manuals as lenses into classroom teaching and learning
Kirsti Klette, University of Oslo, Norway; Marthe Blikstad-Balas, University of Oslo, Norway; Astrid Roe, University of Oslo, Faculty of Education, Norway

SYMPOSIUM: 21ST CENTURY TECHNOLOGY-BASED FORMATIVE AND SUMMATIVE ASSESSMENTS IN HIGHER EDUCATION

Chair
Sonja Franziska Christina Wenzel, Goethe-Universität Frankfurt, Germany; Christian Spoden, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany
Discussant
Detlev Leuthner, University of Duisburg-Essen, Germany

Relationship between students’ matriculation examination results and problem-solving competencies
György Molnár, University of Szeged, Hungary; Bend Csápol, University of Szeged, Hungary

Development of a formative adaptive assessment and implications for its use in teacher education
Claudia Krille, Goethe University Frankfurt, Germany; Sonja Franziska Christina Wenzel, Goethe-Universität Frankfurt, Germany; Daniel Bengs, German Institute for International Educational Research (DIPF), Germany; Ulf Kresse, DIPF, Germany; Sabine Fabriz, Goethe-Universität Frankfurt, Germany; Paul Libbrecht, German Institute for International Educational Research (DIPF), Germany; Frank Goldhammer, DIPF, Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Holger Horz, Goethe University Frankfurt, Institute of Psychology, Germany

Online assessment of collaborative problem solving in pairs: Skill levels and quality of interaction
Johanna Pöystä-Tarhonen, University of Jyväskylä, Finland; Päivi Häkkinen, University of Jyväskylä, Finland; Pia Naykki, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland

Testing an explanatory model for the intention to use e-exams by the university teaching staff
Aron Fink, Goethe University Frankfurt, Germany; Christian Spoden, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Sebastian Born, Friedrich-Schiller-University Jena, Germany; Andreas Frey, Goethe University Frankfurt, Institute of Psychology, Germany; Hanna Köhler, Friedrich-Schiller-University Jena, Germany

FRIDAY, 16 AUGUST 2019
### Session T: 5
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H07

#### SYMPOSIUM: HOW TO OPTIMIZE RETRIEVAL-BASED LEARNING?

**Chair**  
Julian Roelle, Ruhr-University Bochum, Germany

**Organiser**  
Julian Roelle, Ruhr-University Bochum, Germany

**Discussant**  
Elsbeth Steim, ETH Zurich, Switzerland

**Adaptive Testing Increases the Testing Effect**  
Svenja Heitmann, Ruhr-Universität Bochum, Germany; Axel Grund, University of Bielefeld, Germany; Kirsten Berthold, University of Bielefeld, Germany; Stefan Fries, University of Bielefeld, Germany; Julian Roelle, Ruhr-University Bochum, Germany

**Examining the Role of Students’ Individual Differences in Retrieval-Based Learning**  
Christine Bai, Virginia Commonwealth University, United States; Jenni Redfiter, Western Kentucky University, United States; Christopher Rivera, Virginia Commonwealth University, United States

**The Effects of Generating Test Items with Closed-Book or Open-Book on Retention**  
Vincent Hoogerheide, Utrecht University, Netherlands; Tino Endres, University of Freiburg, Germany; Ellen Van Dijk, University Utrecht, Netherlands; Alexander Renkl, University of Freiburg, Germany; Tamara Van Gog, Utrecht University, Netherlands

**Do Learners Know More About Learning Than we Think? Metacognitive Studies on the Testing Effect**  
Sophia Weisgäber, University of Kassel, Germany; Ralf Rummen, University of Kassel, Germany

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### Session T: 6
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H09

#### SYMPOSIUM: LEARNING IN INTERNSHIPS AND LEARNING THROUGH PRACTICE – CRUCIAL ASPECTS OF PROFESSIONAL DEVELOPMENT

**Chair**  
Christian Hartes, University of Paderborn, Germany

**Discussant**  
Hans Gruber, University of Regensburg, Germany

**Ready to learn in the workplace? Workplace learning readiness in the context of dual learning**  
Piet Van den Bossche, University of Antwerp, Belgium; David Gilibe, University of Antwerp, Belgium; Eva Ryndt, KU Leuven (BE), Belgium; Bart Wille, Ghent University, Belgium; Jeel de Groof, Antwerp University, Belgium

**Internships in dual higher education – learning and working tasks at the workplace**  
Alexander Brodsky, University of Mannheim, Germany; Jurgen Siefried, University of Mannheim, Germany; Gerald Sailmann, Hochschule der Bundesagentur für Arbeit, Germany

**Enriching learning through practicums: post-practicum interventions in higher education**  
Stephen Billett, Griffith University, Australia

**Cognitive Styles and Person-Environment Fit in the Context of Work-Based Learning Experiences**  
Petter Nokelainen, Tampere University, Finland; Heta Pintala, Tampere University of Technology, Finland; Laura Pylväis, University of Tampere, Finland

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### Session T: 7
**Time:** 12:00-13:30  
**Location:** Lecture Hall - H04 - Knorr-Bremse Hörsaal

#### SYMPOSIUM: SUPPORTING TEACHERS’ EVIDENCE-BASED PRACTICE: PREREQUISITES, INSTRUCTIONAL APPROACHES AND EDUCATORS

**Chair**  
Katharina Kiemer, Universität Augsburg, Germany

**Organiser**  
Katharina Kiemer, Universität Augsburg, Germany

**Discussant**  
Karen Knöpings, Maastricht University, Netherlands

**An investigation into early career teachers’ core beliefs about teaching, knowledge and ability**  
Lela Ferguson, Kristians University College, Norway

**Pre-service teachers’ evidence-based reasoning: appearance, benefits and ways of support**  
Katharina Kiemer, Universität Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany

**Teacher Educators As Brokers For Research Evidence: Attitudes, Current Practice, and Challenges**  
Annika Diary, Technical University of Munich (TUM), Germany; Anna Horner, Technical University of Munich, TUM School of Education, Germany; Anne Wiesbeck, TUM School of Education, Germany; Andreas Hetmanek, Technical University of Munich (TUM), Germany; Maximilian Knoerig, Technical University of Munich (TUM), Germany; Maria Bannert, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

**Effects of transactivity in teacher training: Qualitative analyses of collaborative learning**  
Lisa Stark, Saarland University, Germany; Robin Stark, Saarland University, Germany; Kai Wagner, Bildungswissenschaft, Germany; Victoria Egele, Saarland University, Germany
### Session T: 8 | Time: 12:00-13:30 | Location: Seminar Room - S04

**SINGLE PAPER: COMPUTER-ASSISTED LEARNING AND GAMIFICATION**

<table>
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<tr>
<th>Chair</th>
<th>Developing Knowledge Building Using Reflective Assessment and Analytics Tools for Low-Achievers</th>
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<td></td>
<td>Carol Chan, The University of Hong Kong, Hong Kong; Yuyin Yang, Central China Normal University, China; Jan van Aalst, University of Hong Kong, Hong Kong</td>
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<td>Epistemic Understanding of Discourse and Knowledge Advance in a Knowledge Building Environment</td>
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<td>Yuyao Tong, The University of Hong Kong, China; Carol Chan, The University of Hong Kong, Hong Kong</td>
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<td>The role of the Need for Cognitive Closure in technology-enhanced learning</td>
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<td>Sven Heimbuch, University of Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany</td>
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<td>Gamification of flipped classroom in higher education</td>
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<td>Michael Saile, Ludwig-Maximilians-Universität, Germany; Maximilian Saile, University of Passau, Germany</td>
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### Session T: 9 | Time: 12:00-13:30 | Location: Seminar Room - S12

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS**

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<tr>
<th>Chair</th>
<th>Student course evaluations: do they mirror students' self-perceived grade level?</th>
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<td></td>
<td>Tine Nielsen, University of Copenhagen, Denmark</td>
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<td>Designing Computer-Based Tests: Design guidelines from multimedia learning studied with eye tracking</td>
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<td>Kim Dirks, Open University, Netherlands; Claudia Manastirean-Żyjstra, ROC Flevoland, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands</td>
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<td>Simulation-Based Assessment: The Relationship Between Gaze-Tracking and Exam Performance</td>
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<td>Andreas Gegenfurtner, University of Passau, Germany; Adam Szulwski, Queen's University, Canada; Ryan Egan, Queen's University, School of Medicine, Dept. of Biomedical and Molecular Science, Canada; Daniel Howes, Queen's University, Department of Emergency Medicine / Critical Care, Canada; Gerhard Dashi, Queen's University, School of Medicine, Canada; Nick McGraw, Queen's University, Canada; Andrew Hall, Queen's University, Department of Emergency Medicine, Canada; Damian Dagnone, School of Medicine, Dept. of Emergency Medicine, Canada; Jeroen Van Merrienboer, Maastricht University, Netherlands</td>
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<td>How can modelling examples be used to promote peer feedback? The role of peer discussion</td>
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<td>Floris van Blankenstein, Leiden University Medical Center, Netherlands; Paul Steendijk, Leiden University, LUMC Center for Research in Education, Netherlands; Nadira Saab, Leiden University, Netherlands</td>
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### Session T: 10 | Time: 12:00-13:30 | Location: Seminar Room - S01

**SINGLE PAPER: AT-RISK STUDENTS**

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<thead>
<tr>
<th>Chair</th>
<th>Socioeconomic status, migration background, special education needs and reading competency</th>
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<td></td>
<td>Jeffrey DeVries, Technical University of Dortmund, Germany; Carsten Szardenings, Technische Universität Dortmund, Germany; Philipp Doebler, Technische Universität Dortmund, Germany; Markus Gabbhardt, TU Dortmund, Germany</td>
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<td>Early reading intervention – a promising way to reduce inequity in education?</td>
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<td>Oddny Judith Solheim, The Norwegian Reading Centre, Norway; Jan Friths, Brock University, Canada; Kjersti Lundetrae, Norwegian Reading Centre, University of Stavanger, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway</td>
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<td>Stimulating language learning through song-based interventions</td>
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<td>Vera Busse, University of Koblenz and Landau, Germany; Jana Jungclauss, University of Oldenburg, Germany; Ingo Roden, Carl von Ossietzky University Oldenburg, Germany; Frank Russo, Ryerson University, Canada; Gunter Kreutz, University of Oldenburg, Germany</td>
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</table>
### Session T: 11
**Time: 12:00-13:30**  
**Location: Seminar Room - S02**

#### SINGLE PAPER: TEACHER EDUCATION AND TEACHER PROFESSIONAL DEVELOPMENT

**Chair**  
Christian Sebastián, Pontificia Universidad Católica de Chile, Chile

- **Teaching financial literacy – investigating teachers’ knowledge of context**  
  Matthias Björklund, Stockholm University, Sweden

- **Structured Observational Feedback Instrument (SOFI) - An instrument to observe academic feedback**  
  Vanessa Pieper, University of Vechta, Germany; Frederikke Bartels, University of Vechta, Germany

- **Teachers’ Work-Related Stress and Coping Strategies**  
  Anna-Mari Aulén, University of Jyväskylä, Finland; Elja Pakarinen, University of Jyväskylä, Finland; Marja Kristiina Lerkkanen, University of Jyväskylä, Finland

- **Thinking Tomorrow’s Teacher Education: Professional Development for Culturally Responsive Teaching**  
  Wai Ming Cheung, The University of Hong Kong, Hong Kong; Yardi Huang, The University of Hong Kong, Hong Kong

### Session T: 12
**Time: 12:00-13:30**  
**Location: Seminar Room - S09**

#### SINGLE PAPER: TOUCH AND COMPASSION IN EDUCATIONAL INTERACTIONS

**Chair**  
Jaakko Helppö, University of Helsinki, Finland

- **Compassionate touch in responding to young children’s distress in a Japanese preschool**  
  Matthew Burdelski, Osaka University, Japan

- **Student-to-student touch as constructing togetherness in classroom interaction**  
  Pivi Heikonen, University of Helsinki, Finland; Lisa Tainio, University of Helsinki, Finland; Ulla Karvonen, University of Helsinki, Finland

- **Compassionate touch in adult-child interaction: Soothing responses to children’s pain distress**  
  Asta Cekalite, Linköping University, Sweden; Annukka Pursi, University of Helsinki, Finland; Dsa Bergnehr, University of Borås, Sweden

- **Educators’ embodied management of children’s distress in kindergarten social interaction**  
  Anti Rajala, University of Helsinki, Finland; Jaakko Helppö, University of Helsinki, Finland; Lasse Lipponen, University of Helsinki, Finland

### Session T: 13
**Time: 12:00-13:30**  
**Location: Seminar Room - S15**

#### SINGLE PAPER: LEARNING, TEACHING AND INSTRUCTION

**Chair**  
Robyn Gillies, The University of Queensland, Australia

- **Learning by Arguing**  
  Kalypso Iordanou, University of Central Lancashire, Cyprus; Deanna Kuhn, Teachers College, Columbia University, United States

- **The Development and Consistency of Cognitive and Non-Cognitive School Effectiveness Criteria**  
  Luisa Grützacher, DIPF | Leibniz Institute for Research and Information in Education, Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany; Svenja Vieuf, German Institute for International Educational Research (DIPF), Germany

- **Writing in the 21st century – global educational discourse about writing**  
  Eva Lindgren, Umeå University, Sweden

- **Association of the early Home Literacy Environment (HLE) with children’s outcomes**  
  Astrid Wirth, Ludwig Maximilians-Universität München, Germany; Frank Niklas, University of Augsburg, Germany; Nadja Drescher, University of Wuerzburg, Germany; Sabrina Guffler, University of Wuerzburg, Germany; Simone Ehmg, Stiftung Lesen, Germany
## Session T: 14 | Time: 12:00-13:30 | Location: Seminar Room - S14

### SINGLE PAPER: TEACHING AND TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Kathryn Bartimot-Aufflick, The University of Sydney, Australia

#### Principals’ supportive leadership for teachers’ professional learning communities
Julia Isabella Warwas, University of Goettingen, Germany; Christoph Helm, Johannes Kepler University Linz, Austria; Christian Schadt, Georg-August-Universität Göttingen, Germany

#### Validating video cases that support PD facilitators in noticing productive teacher learning
Bettina Rosengren-Winter, Humboldt-Universität zu Berlin, Germany; Sven Schüler, Humboldt-Universität zu Berlin, Germany

#### Teachers’ individual and collective innovative behaviour: a review study
Stefan Robbars, Open University Netherlands, Netherlands; Arnoud T. Evers, Open Universiteit, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands

#### Are high-IQ students more at risk of school failure?
Ava Guez, Ecole Normale Supérieure, France; Hugo Peye, Robert Debré Hospital, APHP, France; Marion Le Cam, Direction de l’Évaluation, de la Prospective et de la Performance (DEPP), Ministère de l’Éducation Nationale, France; Nicolas Gauvrit, École Pratique des Hautes Études, France; Franck Ramus, Ecole Normale Supérieure, France

## Session T: 15 | Time: 12:00-13:30 | Location: Seminar Room - S13

### SINGLE PAPER: MOTIVATION AND EDUCATIONAL PSYCHOLOGY

**Chair**
Guillermo Solano-Flores, Stanford University, United States

#### Does the provision of written grades and report cards reinforce the Big-fish-little-pond effect?
Moritz Fleischman, University of Tübingen, Germany; Nicolas Höbner, University of Tübingen, Germany; Herb Marsh, Australian Catholic University, Australia; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany

#### Linking Inter- and Intrapersonal Attribution Theory to Explain Teachers’ Response to Student Failure
Michael Evers, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany; Fani Lauermann, University of Bonn, Germany

#### Analyzing activating instructional arrangements with the Unified Model of Task-specific Motivation
Cornelle de Brabander, Leiden University, Netherlands; Folke Glastra, Leiden University, Netherlands; Kim Stroot, Leiden University, Netherlands

#### Motivational Development of Ability-Grouped Gifted Students: A 9-year Longitudinal Study
Franzis Prokel, University of Trier, Germany; Isabelle Schmidt, University of Trier, Germany

## Session T: 16 | Time: 12:00-13:30 | Location: Seminar Room - S03

### SINGLE PAPER: EXPERIMENTAL STUDIES IN MULTIMEDIA LEARNING

**Chair**
Bas Kolfschoten, University of Twente, Netherlands

#### Verbal Cueing: Enhancing Attention on and the Learning of Low-Salient Pictorial Elements
Manuel Kroos, Leibniz-Institut für Wissensmedien, Germany; Manuela Glaser, Leibniz-Institut für Wissensmedien, Germany; Stephan Schwan, Leibniz-Institut für Wissensmedien, Germany

#### Gaze Replays and Retrospective Protocols to Uncover Cognitive Processes During Multimedia Learning
Irene Skuballa, Open University of the Netherlands, Netherlands; Simon Büttner, University of Tübingen, Germany

#### Prior Knowledge predicts effects of Graphics and Signals when learning with Multiple Representations
Melina Klepoch, Ulm University, Germany; Tina Seufert, Ulm University, Germany

#### Learning the Specifics of Changes: When Animations are Superior to Static Pictures
Mireille Betancourt, University of Geneva, Switzerland; Sandra Bemey, University of Geneva, Switzerland; Rolf Ploetzner, Institute of Psychology, Germany
### SINGLE PAPER: WRITING IN PRIMARY EDUCATION

<table>
<thead>
<tr>
<th>Session T: 17</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S05</th>
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<tr>
<td><strong>Chair</strong></td>
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<td>Margarida Romero, Laboratoire d'Innovation et Numérique pour l’Education, France</td>
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<tr>
<td><strong>Effects of gender and beliefs on leisure writing activities in children</strong></td>
<td>Lisa Birnbaum, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Elisabeth M. Schüller, Leibniz Institute for Educational Trajectories (LITB) Bamberg, Germany; Stephan Kroener, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany</td>
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<td><strong>Correlates of handwriting automatically at school entry</strong></td>
<td>Camilla Lausund Fjær, University of Stavanger, Norway; Guido Nottbusch, University of Potsdam, Germany; Mark Torrance, Nottingham Trent University, United Kingdom; Vibeke Renneberg, University of Stavanger, Norway</td>
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<td><strong>Writing texts because you ‘want’ or because you ‘must’? A self-determination theory perspective</strong></td>
<td>Fien De Smedt, Ghent University, Belgium; Steve Graham, Arizona State University, United States; Hilde Van Keer, Ghent University, Belgium</td>
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<td><strong>Writing and reading in Year 1: The role of handwriting automatically and writing instruction</strong></td>
<td>Deborah Pino-Pasternak, University of Canberra, Australia; Anabela Malpique, Murdoch University, Australia, Australia</td>
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### SINGLE PAPER: EDUCATIONAL TECHNOLOGY AND TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION

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<tr>
<th>Session T: 18</th>
<th>Time: 12:00-13:30</th>
<th>Location: Seminar Room - S07</th>
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<td><strong>Chair</strong></td>
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<td>Hilda Borko, Stanford University, United States</td>
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<td><strong>Structural Gamification for Adaptation based on Learning Analytics</strong></td>
<td>Elise Lavoué, Jean Moulin Lyon 3 University, France; Stuart Halifax, University Jean Moulin Lyon 3, France; Jean-Charles Marty, LIRIS, France; Audrey Sierra, INSA de Lyon, France</td>
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<tr>
<td><strong>Vicarious learning with agent-based models: When is it effective?</strong></td>
<td>Ilana Dubovi, Ben-Gurion University of the Negev, Israel; Victor Lee, Utah State University, United States</td>
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<td><strong>Uniting Two Dissimilar Siblings: Introducing Fuzziness to PISA’s Machine-Supported Coding System</strong></td>
<td>Fabian Zehner, DIPIF</td>
<td>Leibniz Institute for Research and Information in Education, Germany; Frank Goldhammer, DIPIF</td>
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<tr>
<td><strong>Metacognitive scaffolds in collaborative video annotation and analytics for deep and social learning</strong></td>
<td>Elizabeth Koh, National Institute of Education/Nanyang Technological University, Singapore, Singapore; Jennifer Pei-Ling Tan, National Institute of Education/Nanyang Technological University, Singapore, Singapore; Christin Jonathan, National Institute of Education/Nanyang Technological University, Singapore, Singapore</td>
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### SINGLE PAPER: TEACHING AND INSTRUCTION IN HIGHER EDUCATION

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<th>Session T: 19</th>
<th>Time: 12:00-13:30</th>
<th>Location: Lecture Hall - H08</th>
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<td><strong>Chair</strong></td>
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<td>Roger Säljö, University of Gothenburg, Sweden</td>
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<td><strong>University-Business Cooperation and Work-Related Learning in Higher Education: students’ perspectives</strong></td>
<td>Daniela Frison, University of Florence, Italy; Concetta Tino, University of Padua, Italy; Monica Fedeli, University of Padova, Italy</td>
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<tr>
<td><strong>Learning to Teach in Higher Education: Supporting Transfer through Authentic Activities?</strong></td>
<td>Barbara Beige, Ludwig-Maximilians-Universität (LMU), Germany; Julia Murböck, Ludwig-Maximilians-Universität (LMU), Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany</td>
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<td><strong>What’s the Use of Lectures? A Meta-Analysis</strong></td>
<td>Maja Frig, University of Trier, Germany; Tobias Hellemes, University of Trier, Germany; Michael Schneider, University of Trier, Germany</td>
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<td>Session T: 20</td>
<td>Time: 12:00-13:30</td>
<td>Location: Seminar Room - S06</td>
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<td><strong>SYMPOSIUM: RELIGIOUS AND SECULAR PLURALITY AND RE CLASSROOM INTERACTION IN FINLAND, GERMANY AND SWEDEN</strong></td>
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<td><strong>Chair</strong> Martin Uban, University of Eastern Finland, Finland</td>
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<td><strong>Discussant</strong> Konstantin Lindner, University of Bamberg, Germany</td>
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<td><strong>Is it a question of religion at all? Finnish students experiences of integrated RE classrooms.</strong> Martin Uban, University of Eastern Finland, Finland</td>
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<td><strong>Addressing Religion and Secularity in German Catholic Education. An Analysis on Videotaped Lessons</strong> Ulrich Riegel, University of Siegen, Germany; Sarah Delling, University Siegen, Germany</td>
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<td><strong>RE classroom research and hidden curricula in Sweden</strong> Christina Osbeck, University of Gothenburg, Sweden</td>
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<td><strong>Divergent opinions and controversial issues in the Religious Education classroom practice</strong> Karin K Riefner, University West, Sweden</td>
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<tr>
<th>Keynotes - PART 3: 1</th>
<th>Time: 13:45-15:15</th>
<th>Location: Lecture Hall - H02 - Trivago Hörsaal</th>
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<tbody>
<tr>
<td><strong>EARLI KEYNOTE SESSION: MOTIVATION AND SELF-REGULATED LEARNING: INTRODUCING STRATEGY MOTIVATION AND INFORMATION REGULATION</strong></td>
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<td><strong>Chair</strong> Marold Usanitz, RWTH Aachen University, Germany</td>
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<tr>
<td><strong>Motivation and Self-Regulated Learning: Introducing Strategy Motivation and Information Regulation</strong> Stuart Karabenick, University of Michigan, United States</td>
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<th>Keynotes - PART 3: 2</th>
<th>Time: 13:45-15:15</th>
<th>Location: Lecture Hall - H01</th>
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<tr>
<td><strong>EARLI KEYNOTE SESSION: PRODUCTS, PROCESSES, PSYCHOLOGY, &amp; TECHNOLOGY: QUO VADIS EDUCATIONAL ASSESSMENT?</strong></td>
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<td><strong>Chair</strong> Patricia A. Alexander, University of Maryland, United States</td>
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<td><strong>Products, Processes, Psychology, &amp; Technology: Quo Vadis Educational Assessment?</strong> Gavin Brown, University of Auckland, New Zealand</td>
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<tr>
<th>Keynotes - PART 3: 3</th>
<th>Time: 13:45-15:15</th>
<th>Location: Lecture Hall - H03 - Otto Fuchs Hörsaal</th>
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<tr>
<td><strong>EARLI KEYNOTE SESSION: THE ROLE OF WRITING IN EDUCATION</strong></td>
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<td><strong>Chair</strong> Debra Myhill, University of Exeter, United Kingdom</td>
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<tr>
<td><strong>The Role of Writing in Education</strong> Synnave Māte, Norwegian University of Science and Technology, Norway</td>
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### Session U: 1

**SIG INVITED SYMPOSIUM: SIG 6: NON-COGNITIVE EFFECTS OF INSTRUCTIONAL INTERVENTIONS IN APPLIED DOMAINS.**

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<tr>
<th>Chair</th>
<th>Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany</th>
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<tr>
<td>Organisers</td>
<td>Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France</td>
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<tr>
<td>Discussant</td>
<td>Erno Lehtinen, University of Turku, Finland</td>
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<tr>
<td><strong>Learning from an applied online learning platform: Insights into Tuebingen’s Sectio Chirurgica</strong></td>
<td>Johannes Großer, Leibniz Institut für Wissensmedien, Germany; Martina Bierzeit, Leibniz-Institut für Wissensmedien, Germany; Thomas Shiozawa, University of Tuebingen, Germany; Bernhard Hirt, University of Tuebingen, Germany; Joachim Kämmerle, Leibniz-Institut für Wissensmedien, Germany</td>
</tr>
<tr>
<td><strong>Dynamic vs. static tutorials for learning to operate software: both work!</strong></td>
<td>Mireille Betancourt, University of Geneva, Switzerland; Kristina Pankov, University of Geneva, Switzerland</td>
</tr>
<tr>
<td><strong>The development of self-efficacy for negotiating during a four-day simulation of decision-making.</strong></td>
<td>Sofie Vermeiren, University Antwerp, Belgium; Dorothy Duchatelet, University of Antwerp, Belgium; David Gijbels, University of Antwerp, Belgium</td>
</tr>
<tr>
<td><strong>The Effects of Problem-Based, Project-Based, and Case-Based Learning on Motivation: A Meta-Analysis.</strong></td>
<td>Lisette Wijnia; HZ University of Applied Sciences &amp; Erasmus University Rotterdam, Netherlands; Gera Noordzij, Erasmus School of Social and Behavioural Sciences, Erasmus University Rotterdam, Netherlands; Lida Arends, Erasmus School of Social and Behavioural Sciences, Erasmus University Rotterdam, Netherlands; Remigius (Remy) Rikkers, UCR / Utrecht University, Netherlands; Sofie Loyens, University College Roosevelt, Netherlands</td>
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</tbody>
</table>

### Session U: 2

**SYMPOSIUM: FINDING PURPOSE IN EDUCATION – A PERSPECTIVE OF PROFESSIONALS**

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<thead>
<tr>
<th>Chair</th>
<th>Alexander Unser, TU Dortmund University, Germany</th>
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<tbody>
<tr>
<td>Organiser</td>
<td>Elina Kuusisto, University of Humanistic Studies, Netherlands</td>
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<tr>
<td>Discussant</td>
<td>Dorel de Ruyter, University of Humanistic Studies, Netherlands</td>
</tr>
<tr>
<td><strong>How do Finnish teachers’ life goals actualize in their profession?</strong></td>
<td>Elina Kuusisto, University of Humanistic Studies, Netherlands; Kirsi Tiri, University of Helsinki, Finland</td>
</tr>
<tr>
<td><strong>Critical or positive effects of a religious calling to teach? A study among evangelical teachers</strong></td>
<td>Sebastian Röhl, University of Education Freiburg, Germany; Manfred L. Pimer, University of Erlangen-Nuremberg, Germany</td>
</tr>
<tr>
<td><strong>Finnish Social Services Students' Perceptions of Purpose and Helping</strong></td>
<td>Nina Manninen, University of Helsinki, Finland; Elina Kuusisto, University of Humanistic Studies, Netherlands; Kirsi Tiri, University of Helsinki, Finland</td>
</tr>
<tr>
<td><strong>Purposeful visions for the future - School leaders formulating aims for education</strong></td>
<td>Jorien Copier, Radboud University, Netherlands</td>
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### Session U: 3

**SYMPOSIUM: BEYOND SFON: EXPANDING EXAMINATIONS OF SPONTANEOUS MATHEMATICAL FOCUSING TENDENCIES**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Jake McMulken, University of Turku, Finland</th>
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</thead>
<tbody>
<tr>
<td>Organisers</td>
<td>Lieven Verschaaffel, KU Leuven, Belgium; Jake McMulken, University of Turku, Finland</td>
</tr>
<tr>
<td>Discussant</td>
<td>Matthew Inglis, Loughborough University, United Kingdom</td>
</tr>
<tr>
<td><strong>Four-year olds’ Spontaneous Focusing On Patterns</strong></td>
<td>Lieven Verschaffel, KU Leuven, Belgium; Nore Wijns, KU Leuven, Belgium; Bert De Smedt, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium</td>
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<tr>
<td><strong>The effects of perceptual salience on attention to number</strong></td>
<td>Michele Mazocco, University of Minnesota, United States; Jenny Chan, University of Minnesota, United States</td>
</tr>
<tr>
<td><strong>Interrelations among Relational Reasoning, Spontaneous Focus on Math Properties and Math Performance</strong></td>
<td>Patricia A. Alexander, University of Maryland, United States; Zhao Hongyang, University of Maryland, United States; Yuting Sun, University of Maryland, United States</td>
</tr>
<tr>
<td><strong>The effects of first school years on mathematical skill profiles</strong></td>
<td>Minna M Hannula-Sormunen, University of Turku, Finland; Cristina Nanu, University of Turku, Finland; Eero Laakkonen, University of Turku, Finland</td>
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</table>
### SYMPOSIUM: PERSON-ENVIRONMENT CONGRUENCE AND RELATED CONSTRUCTS AS PREDICTORS OF CAREER CHOICES AND BEHAVIOR

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<thead>
<tr>
<th>Chair</th>
<th>Manuela Paechter, University of Graz, Austria</th>
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<tbody>
<tr>
<td>Organiser</td>
<td>Silke Lutenberger, University of Teacher Education Styria, Austria</td>
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<tr>
<td>Discussant</td>
<td>Elena Mikanova, University of Basel, Switzerland</td>
</tr>
<tr>
<td>Measures for evaluating congruency of students’ interests and their vocational aspirations</td>
<td>Bernhard Erf, Bundeswehr University Munich, Germany</td>
</tr>
<tr>
<td>Congruence and differentiation as predictors of changes in career choices among adolescents</td>
<td>Silke Lutenberger, University of Teacher Education Styria, Austria; Germot Dreselbner, University of Graz, Austria; Michaela Stock, School of Business Economics and Social Sciences, Austria; Georg Tafner, University of Teacher Education Styria, Austria; Manuela Paechter, University of Graz, Austria</td>
</tr>
<tr>
<td>Early stages of careers: Using vocational interests to predict person-environment fit at university</td>
<td>Jakob Bergmann, Johannes Kepler University Linz, Austria; Smirna Maško, Johannes Kepler University Linz, Austria</td>
</tr>
<tr>
<td>Are children a sum of mom and dad? Evaluating intergenerational interest patterns</td>
<td>Florian G. Hartmann, University of the Bundeswehr Munich, Germany; Jutta von Maurice, Leibniz Institute for Educational Trajectories (LIRE), Germany</td>
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### SYMPOSIUM: PERSPECTIVES FOR UNDERSTANDING - AND DESIGNING FOR - TRANSFER

<table>
<thead>
<tr>
<th>Chair</th>
<th>Nina Bonderup Dohn, University of Southern Denmark, Denmark</th>
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<tbody>
<tr>
<td>Organisers</td>
<td>Nina Bonderup Dohn, University of Southern Denmark, Denmark; Michael Jacobson, The University of Sydney, Australia</td>
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<tr>
<td>Discussant</td>
<td>Peter Reimann, University of Sydney, Australia</td>
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<tr>
<td>Analyzing Knowledge Transfer across Contexts as Situated Attunement to Contextual Possibilities</td>
<td>Nina Bonderup Dohn, University of Southern Denmark, Denmark</td>
</tr>
<tr>
<td>Designing for Transfer as Situated Readiness</td>
<td>Roland Hachmann, University Southern Denmark, Denmark; Nina Bonderup Dohn, University of Southern Denmark, Denmark</td>
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<tr>
<td>Going digital at the age of two -Transfer, cognitive socialization and the hybrid mind</td>
<td>Roger Säjö, University of Gothenburg, Sweden</td>
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<tr>
<td>Transfer as an Emergent Phenomenon: A Complexity Perspective</td>
<td>Stig Børsen Hansen, University of Southern Denmark, Denmark; Michael Jacobson, The University of Sydney, Australia</td>
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### SYMPOSIUM: THE HIDDEN CURRICULUM IN DOCTORAL EDUCATION

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<tr>
<th>Chair</th>
<th>Søren Bengtsen, Aarhus University, Denmark</th>
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<tr>
<td>Organiser</td>
<td>Søren Bengtsen, Aarhus University, Denmark</td>
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<tr>
<td>Discussant</td>
<td>Kirsi Pynähtä, University of Oulu / University of Helsinki, Finland</td>
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<tr>
<td>Exposing the hidden curriculum in international doctoral contexts</td>
<td>Dely Elliot, University of Glasgow, United Kingdom</td>
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<tr>
<td>Balancing peer-support and early career workload: reasonable boundaries of peer-mentoring</td>
<td>Sofie Kobayashi, University of Copenhagen, Denmark; Kay Guccione, Glasgow Caledonian University, United Kingdom</td>
</tr>
<tr>
<td>The treasure is hidden among peers</td>
<td>Camilla Østerberg Rump, University of Copenhagen, Denmark; Sofie Kobayashi, University of Copenhagen, Denmark; Olga Trolle, University of Copenhagen, Denmark</td>
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<tr>
<td>The hidden curriculum in doctoral education – Beyond academia and into society</td>
<td>Søren Bengtsen, Aarhus University, Denmark; Cally Guerin, University of Adelaide, Australia</td>
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<tr>
<td>Session U: 7</td>
<td>Time: 15:30-17:00</td>
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<tr>
<td><strong>SYMPOSIUM: CLASSROOM TALK THAT PROMOTES STUDENT LEARNING, PARTICIPATION, AND COMMUNICATION</strong></td>
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<tr>
<td><strong>Chairs</strong></td>
<td>Chiel van der Veen, VU University Amsterdam, Netherlands; Anke Wischgoll, University of Fribourg, Switzerland</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Christa Asterhan, Hebrew University of Jerusalem, Israel</td>
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<tr>
<td><strong>What forms of teacher-student dialogue and active student participation are productive for learning?</strong></td>
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<tr>
<td>Sara Hennessy, University of Cambridge, United Kingdom; Neil Mercer, University of Cambridge, United Kingdom; Elisa Calcagni, University of Cambridge, United Kingdom; Alvin Leung, University of Cambridge, United Kingdom; Joyce Lim, University of Cambridge, United Kingdom</td>
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<tr>
<td><strong>The Respectful Talk model: critical thinking through dialogue – effects on pupils at risk</strong></td>
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<tr>
<td>Chiel van der Veen, VU University Amsterdam, Netherlands; Marjoe J. Davies, The University of Auckland, New Zealand; Katharina Kiemer, Universität Augsburg, Germany</td>
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<tr>
<td><strong>Prompting for accountability – how to foster students to contribute to math classroom discussions</strong></td>
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<tr>
<td>Anke Wischgoll, University of Fribourg, Switzerland; Miriam Schmid, University of Fribourg, Switzerland; Miriam Moser, University of Fribourg, Switzerland; Matthias Zimmermann, University of Fribourg, Switzerland; Kurt Rauser, University of Zurich, Switzerland; Christine Pauli, University of Fribourg, Switzerland</td>
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<tr>
<td><strong>Dialogic classroom talk in early childhood education: Effects on communication and social skills</strong></td>
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<tr>
<td>Chiel van der Veen, VU University Amsterdam, Netherlands; Femke van der Wilt, VU Amsterdam, Netherlands</td>
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<tr>
<th>Session U: 8</th>
<th>Time: 15:30-17:00</th>
<th>Location: Lecture Hall - H05</th>
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<tbody>
<tr>
<td><strong>SYMPOSIUM: FROM KNOWLEDGE TO ACTING: APTITUDE AND QUALIFICATION IN DIAGNOSING AND PROMOTING TEACHING COMPETENCY</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Matthias Baer, University of Education Zurich / University of Zurich, Switzerland</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Matthias Baer, University of Education Zurich / University of Zurich, Switzerland</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Judith Guikema, Wageningen University, Netherlands</td>
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<tr>
<td><strong>Structuring in Lesson Planning As a Prerequisite for Classroom Management</strong></td>
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<tr>
<td>Matthias Kreft, Universität zu Köln / University of Cologne, Germany; Johannes König, University of Cologne, Germany</td>
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<tr>
<td><strong>Potentials of Cognitive Activation in Classrooms – Findings of a Video Study in Switzerland</strong></td>
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<tr>
<td>Dorothée Holtsch, University of Teacher Education St. Gallen, Switzerland; Juergen Seifried, University of Mannheim, Germany</td>
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<tr>
<td><strong>Teachers’ Formative Assessment in Videographed Lessons in Relation to Their Knowledge and Beliefs</strong></td>
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<tr>
<td>Merle Rauhmann, University of Teacher Education Lucerne, Switzerland; Sandra Züllger, Institute for Diversity in Education, Switzerland; Uihai Seo, Institute of Diversity in Education, Switzerland; Matthias Baer, University of Education Zurich / University of Zurich, Switzerland; Andrea Häfliger, University of Teacher Education Lucerne, Switzerland; Hanni Lötscher, PH Luzern, Switzerland; Loredana Tarchetti, University of Teacher Education Lucerne, Switzerland</td>
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<tr>
<td><strong>Teachers’ Personality Aspects and Their Impact on Developing Competences for High Quality Teaching</strong></td>
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<tr>
<td>Mirjam Kocher, University of Education Zurich, Switzerland; Anna Locher, FHNW / University of Cologne, Switzerland; Matthias Baer, University of Education Zurich / University of Zurich, Switzerland</td>
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<tr>
<th>Session U: 9</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S11</th>
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<tbody>
<tr>
<td><strong>WORKSHOP: EXPLORING HOW TO GUIDE EFFECTIVE STUDENT QUESTIONING</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Christopher Osterhaus, Ludwig-Maximilians-Universität, Germany</td>
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<tr>
<td><strong>Exploring How to Guide Effective Student Questioning</strong></td>
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<tr>
<td>Harry Stokhof, HAN University of Applied Sciences, Netherlands</td>
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<tr>
<th>Session U: 10</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S06</th>
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</thead>
<tbody>
<tr>
<td><strong>WORKSHOP: SHARING OUR EXPERIENCES OF PUTTING INTERDISCIPLINARY THEORY INTO (HANDS-ON) EDUCATIONAL PRACTICE</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Karin Baesuerein, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland</td>
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<tr>
<td><strong>Sharing our experiences of putting interdisciplinary theory into (hands-on) educational practice</strong></td>
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<tr>
<td>Katrine Lindvig, University of Copenhagen, Denmark; Mirel van Goeth, Utrecht University, Netherlands; Michael Burke, Utrecht University, Netherlands</td>
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<td>Session U: 11</td>
<td>Time: 15:30-17:00</td>
<td>Location: Seminar Room - S15</td>
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<tr>
<td><strong>WORKSHOP: GET INSPIRATION FOR SCALABLE DESIGN IN OPEN ONLINE EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Sari Yrjänäinen, University of Turku, Finland</td>
<td>Get Inspiration for Scalable Design in Open Online Education</td>
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**ANNOTATIONS:**
- PARTICIPANTS ARE REQUESTED TO BRING THEIR OWN LAPTOP WHEN ATTENDING THIS SESSION.

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<tr>
<th>Session U: 12</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S14</th>
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<tbody>
<tr>
<td><strong>WORKSHOP: EMBEDDING EMPLOYABILITY DEVELOPMENT ACROSS HIGHER EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Julien Mercier, University of Quebec in Montreal, Canada</td>
<td>Embedding employABILITY development across higher education</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Session U: 13</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S01</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WORKSHOP: SOCIO-EMOTIONAL AND MATERIAL LEARNING (SEMLA) ACTIVITY-BASED WORKSHOP FOR EARLY CHILDHOOD EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Xavier Fontich, Autonomous University of Barcelona, Spain</td>
<td>Socio-Emotional and Material Learning (SEMLA) Activity-based workshop for early childhood education</td>
</tr>
</tbody>
</table>

**ANNOTATIONS:**
- THIS WORKSHOP HAS BEEN CANCELLED.

<table>
<thead>
<tr>
<th>Session U: 14</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S02</th>
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</thead>
<tbody>
<tr>
<td><strong>WORKSHOP: ENHANCING A MASTERY-GOAL ORIENTATION IN TEACHER EDUCATION.</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Andrea Ximena Castano, National University of Education, Ecuador</td>
<td>Enhancing a mastery-goal orientation in teacher education.</td>
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</tbody>
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<thead>
<tr>
<th>Session U: 15</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S10</th>
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<tbody>
<tr>
<td><strong>WORKSHOP: SOCIAL NETWORK ANALYSIS IN EDUCATIONAL RESEARCH: WHEN, WHY AND HOW?</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Detlef Urhahn, University of Passau, Germany</td>
<td>Social network analysis in educational research: when, why and how?</td>
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</table>

**ANNOTATIONS:**
- PARTICIPANTS ARE REQUESTED TO BRING THEIR OWN LAPTOP WHEN ATTENDING THIS SESSION.

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<tr>
<th>Session U: 16</th>
<th>Time: 15:30-17:00</th>
<th>Location: Seminar Room - S12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WORKSHOP: RESEARCH SKILLS IN HIGHER EDUCATION. A TOOL FOR ITERATIVE RESEARCH IN PROFESSIONAL PRACTICES.</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Alberto Nagle Cajes, Independent Consultant, Uruguay</td>
<td>Research Skills in Higher Education. A tool for iterative research in professional practices.</td>
</tr>
</tbody>
</table>
### Session U: 17
**Time:** 15:30-17:00  
**Location:** Seminar Room - S03

**ICT DEMONSTRATION: CONCEPTUALIZING AND DESIGNING A FLIPPED CLASSROOM IN A HIGHER EDUCATION LARGE STATISTICS LECTURE**

**Chair**  
Ina Blau, Open University of Israel, Israel

**Conceptualizing and Designing a Flipped Classroom in a Higher Education Large Statistics Lecture**

Andreas Maur, Johannes Gutenberg-Universität Mainz, Germany; Kirsten Winkel, University of Mainz, Germany; Manuel Förster, Johannes Gutenberg University Mainz, Germany; Florian Heiss, Heinrich-Heine-University of Düsseldorf, Germany; Sigbert Klinker, Humboldt-University Berlin, Germany; Constantin Weiser, Johannes Gutenberg University Mainz, Germany

**Annotations:**  
Participants are requested to bring their own laptop when attending this session.

### Session U: 18
**Time:** 15:30-17:00  
**Location:** Seminar Room - S05

**SYMPOSIUM: INVESTIGATING AND FOSTERING HISTORICAL LEARNING ACTIVITIES AT LOWER/UPPER SECONDARY SCHOOL LEVELS**

**Chair**  
Jannet van Driel, University of Amsterdam, Netherlands

**Organisers**  
Martin Nitsche, Fachhochschule Nordwestschweiz, Switzerland; Monika Walds, University of Applied Sciences Northwestern Switzerland, Switzerland

**Discussant**  
Holger Thünemann, University of Cologne, Germany

**Fostering students’ skills to formulate authentic historical research questions**

Nicola Brauch, University of Bochum, Germany; Lena Beherendt, University of Bochum, Germany

**Fostering visual literacy in secondary school: Critical reasoning about historical images**

Kevin van Loon, FH HNW, Switzerland; Monika Walds, University of Applied Sciences Northwestern Switzerland, Switzerland

**Writing about Historical Significance: Differences between Novices and Experts**

Johann van Driel, University of Amsterdam, Netherlands; Jannet van Driel, University of Amsterdam, Netherlands; Carla Van Bloxel, University of Amsterdam, Netherlands

**Fostering historical writing in upper secondary schools: Results of an intervention study**

Martin Nitsche, Fachhochschule Nordwestschweiz, Switzerland; Monika Walds, University of Applied Sciences Northwestern Switzerland, Switzerland; Kristine Gollin, University of Applied Sciences Northwestern Switzerland, Switzerland

### Session V: 1
**Time:** 17:15-18:45  
**Location:** Lecture Hall - H11

**SIG INVITED SYMPOSIUM: SIG 27:NEW APPROACHES, OLD ISSUES—NEW METHODOLOGIES CAST NEW LIGHT UPON KNOWN EDUCATIONAL CONCEPTS**

**Chair**  
Halziska Maria Jarodzka, Open University of the Netherlands, Netherlands

**Organiser**  
Halziska Maria Jarodzka, Open University of the Netherlands, Netherlands

**Discussant**  
Ellen Kok, Utrecht University, Netherlands

**Using eye tracking to assist teaching reading in schools**

Howell Istance, Tampere University, Finland; Oleg Spakov, Tampere University, Finland; Harri Siitola, Tampere University, Finland; Karl-Jouko Rähä, Tampere University, Finland; Hanna-Maja Sirkkonen, University of Turku, Finland; Anne Hälfors, Sibelius Upper Secondary School, Finland

**Multiple person mobile eye tracking in natural environments: Heatmaps and gaze synchrony graphs**

Markku Hannula, University of Helsinki, Finland

**Predicting knowledge gain during multimodal Web search by means of query and navigation logs**

Yvonne Kammerer, Knowledge Media Research Center, Germany

**Cognitive Load Eye Tracked. Microsaccadic and Pupillary Responses to Task Difficulty**

Krzysztof Krejtz, SWPS University of Social Sciences and Humanities, Poland; Andrew T. Duchowski, Clemson University, United States; Izabela Krejtz, SWPS University of Social Sciences and Humanities, Poland; Justyna Żurawska, SWPS University of Social Sciences and Humanities, Poland; Anna Niedzielska, SWPS University of Social Sciences and Humanities, Poland; Caspar Biale, Information Processing Institute, Poland; Donald House, Clemson University, United States
### SYMPOSIUM: CONCEPTUALIZING, ASSESSING, EXPLAINING AND FOSTERING SCIENTIFIC REASONING SKILLS

**Chair**
Jan Ellen, KU Leuven, Belgium

**Organiser**
Louise Maddens, KU Leuven, Belgium

**Discussant**
Tina Saufert, Ulm University, Germany

**Scientific Reasoning and Argumentation as Engagement in Epistemic Activities**
Christopher Osterhaus, Ludwig-Maximilians-Universität, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Evaluating the Leuven Research Skills Test**
Louise Maddens, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Rianne Janssen, KU LEUVEN, Belgium; Annies Raes, KU Leuven, Belgium; Jan Ellen, KU Leuven, Belgium

**Unraveling scientific reasoning: explaining children’s performance in constituent skills.**
Erika Schatter, Radboud University, Netherlands; Ard Lazender, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Noortje Janssen, Radboud University, Netherlands

**Reading scientific articles: facilitating evaluation of structured briefs of scientific literature**
Katharina Engelmann, Technical University of Munich (TUM), Germany; Andreas Hetmanek, Technical University of Munich (TUM), Germany; Birgit J. Neuhaus, LMU Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

### SYMPOSIUM: DESIGN RESEARCH FOR TEACHING THE ABILITY TO ANALYSE IN SOCIAL SCIENCE EDUCATION

**Chair**
Malin Tváraňa, Stockholm University, Sweden

**Organiser**
Cecilia Lundholm, Stockholm University, Sweden

**Discussant**
Alexandra Lat, The Pennsylvania State University, United States

**Authentic assessment of students’ reasoning about social problems**
Carla Van Bostel, University of Amsterdam, Netherlands; Anne Hemker, Cito Arnhem, Netherlands; Thomas Klijnstra, University of Amsterdam, Netherlands; Gerard Ruijs, University of Amsterdam, Netherlands

**Qualitative differences in the ability to analyse – the example of the Mediterranean refugee crisis**
Ann-Sofie Jägerskog, Stockholm University, Sweden; Malin Tváraňa, Stockholm University, Sweden; Max Strandberg, Stockholm University, Sweden; Mattias Björklund, Stockholm University, Sweden; Bodil Kåsa, City of Stockholm, Sweden; Anita Dalm, Västmanland County, Sweden

**What’s the value of water? Developing the ability to analyse economic issues in social studies**
Mattias Björklund, Stockholm University, Sweden; Malin Tváraňa, Stockholm University, Sweden; Ann-Sofie Jägerskog, Stockholm University, Sweden; Max Strandberg, Stockholm University, Sweden; Eva Malmoist, City of Stockholm, Sweden; Jan Norevik, Ekero municipality, Sweden; Lena Ölin, Ekero municipality, Sweden; Linda Karlander, Ekero municipality, Sweden

**Theories of justice in primary school: Developing students’ critical analyses in social studies**
Malin Tváraňa, Stockholm University, Sweden

### SYMPOSIUM: EMOTION-ELICITING EVENTS IN TEACHER-STUDENT INTERACTIONS

**Chairs**
Astrid Poorthuis, Utrecht University, Netherlands; Helma Kooiien, Research Institute of Child Development and Education, Netherlands

**Discussant**
Anne Christiane Frenzel, University of Munich, Germany

**The Role of Teacher-Student Interactions for Beginning Teachers’ Emotions: Results of a Diary Study**
Karen Aldrup, Leibniz Institute for Science and Mathematics Education, Germany; Uta Kliksmann, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**Teachers’ Emotions And Wellbeing: The Interpersonal Nature and Relevance of High Heart Rate Events**
Monika Donker, Utrecht University, Netherlands; Mariska van den Hove, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Tim Mainhard, Utrecht University, Netherlands

**Teachers' Appraisals and Emotions in Daily Events with Students Varying in Externalizing Behavior**
Jannike de Ruiter, University of Amsterdam, Netherlands; Astrid Poorthuis, Utrecht University, Netherlands; Helma Kooiien, Research Institute of Child Development and Education, Netherlands

**Reflection on Specific Events: A Multiple Case Intervention Study With Teachers in Special Education**
Tessa Weys, KU Leuven, Belgium; Anne-Katrien Koenen, KU Leuven, Belgium; Annet de Vooey, KU LEUVEN, Belgium; Geert Kelchtermans, Katholieke Universiteit Leuven, Belgium; Jantine Spilt, KU Leuven, Belgium
SYMPOSIUM: TEACHER-CHILD INTERACTION IN PRE-SCHOOL AND ITS EFFECTS ON CHILDREN’S LEARNING

Chair
Andrea Wulfschlegler, University of Zurich, Switzerland

Discussant
Miriam Leuchter, University of Koblenz - Landau, Germany

Effective Teaching Practices and Children’s Learning Growth in Early Mathematics Education
Lara Potth, Humboldt-Universität zu Berlin, Germany; Lars Jenßen, Freie Universität Berlin, Germany; Georg Hosoya, Freie Universität Berlin, Germany; Katja Elierts, Humboldt-Universität zu Berlin, Germany; Sigrid Blömeke, University of Oslo, Norway

Pre-school teachers’ learning support and its effects on children’s numerical competence
Andrea Wulfschlegler, University of Zurich, Switzerland; Susanne Kuralt Geeler, Pädagogische Hochschule St.Gallen, Switzerland; Anuschka Meier-Wyder, Hochschule für Erziehungs- und Bildungswissenschaften Zürich, Switzerland; Aizo Heinze, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Miriam Leuchter, University of Koblenz - Landau, Germany; Anke Lindmeier, Leibniz Institute of Science and Mathematics Education (IPN), Germany; Franziska Vogt, University of Teacher Education St.Gallen, Switzerland; Elisabeth Moser Oßmann, University of Zurich, Switzerland

Quantitative and qualitative aspects of educational dialogue: effects on early science learning
Anika Bürgermeister, University of Leipzig, Germany; Gerlinde Grosse, Early Childhood Education Research, Germany; Ueli Studhalter, Pädagogische Hochschule Luzern, Switzerland; Miriam Leuchter, University of Koblenz - Landau, Germany; Henrik Saibach, University of Leipzig, Germany

Development of pre-academic skills and motivation in preschool classroom quality profiles
Jenni Salminen, University of Jyväskylä, Finland; Eija-Paakkinen, University of Jyväskylä, Finland; Anna-Majsa Pohke, Department of Teacher Education, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland

SYMPOSIUM: FOSTERING STUDENTS’ (META-)COGNITION IN DIGITAL LEARNING SCENARIOS

Chair
Ines Debi, University of Salzburg, Austria

Organisers
Ines Debi, University of Salzburg, Austria; Stephanie Moser, Technical University of Munich, Germany

Discussant
Joerg Zumbach, University of Salzburg, Austria

Supporting digital Science Education with Pedagogical Agents
Ines Debi, University of Salzburg, Austria; Joerg Zumbach, University of Salzburg, Austria

Self-Regulation in Flipped Classrooms – A Study on Learning Process, Outcomes and Experiences
Stephanie Moser, Technical University of Munich, Germany; Doris Lewalter, Technical University of Munich (TUM), Germany; Tanja Thurner, Technical University of Munich, Germany; Abin Muff, Bayerische Bereitschaftspolizei, Germany

Can External Artificial Agents Impact Learners’ Self-Regulation During Complex Multimedia Learning?
Roger Azevedo, University of Central Florida, United States; Michelle Taub, University of Central Florida, United States; Megan J. Price, University of Central Florida, United States

Improving self-efficacy and self-concept with a serious game: the importance of in-game feedback
Susanne Narciss, TU Dresden, Germany; Felix Kapp, Technische Universität Berlin, Germany; Pia Spangenberg, Technische Universität Berlin, Germany

SYMPOSIUM: THE RELEVANCE OF STUDENT FEEDBACK IN TEACHER EDUCATION AND TEACHING PRACTICE

Chair
Corinne Wyss, Zurich University of Teacher Education, Switzerland

Organiser
Kerstin Göbel, University of Duisburg-Essen, Germany

Discussant
Jonathan Schweig, RAND Corporation, United States

Using Students’ Feedback to Improve Pre-Service Teachers’ Aspects of Quality of Teaching
Georg Krammer, University College of Teacher Education Styria, Austria; Barbara Pltna, University College of Teacher Education Styria, Austria; Gerlinde Lenske, Universität Koblenz-Landau, Germany; Marlies Matischek, University College of Teacher Education Styria, Austria; Petra Hecht, Pädagogische Hochschule Vorarlberg, Austria; Elisabeth Seethaler, Salzburg University of Education Steyrnitz, Austria; Johannes Mayr, Alpen Adria Universität Klagenfurt, Austria

Does Smartphone-Assisted Student Feedback Affect Teaching Quality?
Hannah Bijlmer, University of Twente, Netherlands; Adrie Voscher, Univ. of Twente, Netherlands

The Perception of Student Feedback to Teachers: Perspectives of Pupils, Teachers and Peers
Corinne Wyss, Zurich University of Teacher Education, Switzerland; Melke Raafnaab, Pädagogische Hochschule Zürich, Switzerland

Attitudes of Pre-Service and In-Service Teachers Towards Student Feedback and Reflection
Kerstin Göbel, University of Duisburg-Essen, Germany; Katharina Neuber, University of Duisburg-Essen, Germany
### Session V: 8  
**Time:** 17:15-18:45  
**Location:** Seminar Room - S03  

**SINGLE PAPER: METACOGNITION**  

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<th>Chair</th>
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<tr>
<td>Gina Camp, Welten Institute - Open University of the Netherlands, Netherlands</td>
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**Metacognitive awareness among university and secondary school students**  
Marloes Nederhand, Erasmus University Rotterdam, Netherlands; Hub Tabbers, Erasmus University Rotterdam, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Remigius (Remy) Rikkers, UCR / Utrecht University, Netherlands  

**Learning Behavior Change: the Role of Narratives**  
Luotong Hui, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Donkers, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands  

**Assessing Metacognition in the Learning Process: Construction of the Inventory MILP**  
Inka Haehrelstein, Martin Luther University Halle-Wittenberg, Germany; Pablo Pirmay-Dummer, Martin Luther University Halle-Wittenberg, Germany  

**The effect of structuring versus reflection-provoking support on students’ shared regulation**  
Lieske De Backer, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Martin Valcke, Ghent University, Belgium  

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### Session V: 9  
**Time:** 17:15-18:45  
**Location:** Seminar Room - S01  

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

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<tr>
<td>Natalia Albornoz, Pontificia Universidad Católica de Chile, Chile</td>
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**Coherence in the context of organizational development – Teacher educators’ perceptions**  
Katharina Heßmann, University of Education Freiburg, Germany; Stefanie Vigerske, University of Education Freiburg, Germany  

**Attitudes towards the applicability of scientific knowledge in educational practice**  
Lisa Stark, Saarland University, Germany; Robin Stark, Saarland University, Germany  

**Beginner Teachers’ conceptions of a successful lesson: structure and implications**  
Guy Durden, University College London, United Kingdom  

**Pre-service teachers’ learning of how to teach specific content in a learning study**  
Joakim Törnqvist Magnusson, University of Gothenburg, Sweden; Angelika Kullberg, University of Gothenburg, Sweden  

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### Session V: 10  
**Time:** 17:15-18:45  
**Location:** Seminar Room - S15  

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY**  

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<td>Lillian Lai, The University of Hong Kong, Hong Kong</td>
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**A Meta-Analysis on Goal Structures and Personal Achievement Goals**  
Lisa Bartach, University of York, United Kingdom; Marko Lüftenegger, University of Vienna, Austria; Sophie Oczokin, University of Vienna, Austria; Jakob-Pietschnig, University of Vienna, Austria  

**Does congruency of an instructional video’s setting with the test setting improve test performance?**  
Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Sabrina Lux, Leibniz-Institut für Wissensmedien, Germany; Vincent Hoogerheide, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Stephan Schwän, Leibniz-Institut für Wissensmedien, Germany  

**Epistemic Principles to Evaluate Theories of Learning and Instruction**  
Clark Chinn, Rutgers University, United States; Mikko Kanulainen, University of Turku, Finland  

**Can eye see what you did? Effects of signaling on the interpretation of dynamic gaze displays**  
Margot van Wermeskerken, Erasmus Medical Center, Netherlands; Juliane Richter, Leibniz-Institut für Wissensmedien, Germany; Tamara Van Gog, Utrecht University, Netherlands; Katharina Schelten, Leibniz-Institut für Wissensmedien, Germany
### Session V: 11 | Time: 17:15-18:45 | Location: Seminar Room - S09

**SINGLE PAPER: TEACHING AND TEACHER EDUCATION**

**Chair**
Judith Warren Little, University of California, Berkeley, United States

**Does Quality of Mathematics Teaching Depend on the Applied Rating Instrument?**
Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland

**Benefits and Drawbacks of the Teacher Echo: Findings from a Video Study**
Detlef Urhahne, University of Passau, Germany; Chunjie Zhu, University of Passau, Germany; Marlene Wagner, University of Passau, Germany

**How students’ reading skills associate with teachers’ reading instruction in Grade 1 classrooms?**
Jenni Ruotsalainen, University of Jyväskylä, Finland; Eija Pekarinen, University of Jyväskylä, Finland; Anna-Maja Poikkeus, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland

**Measuring scaffolding-interaction in authentic classroom environments**
Hanna Mach, Goethe-Universität Frankfurt, Germany; Rico Hermkes, Goethe-Universität Frankfurt, Germany; Gerhard Minnemeier, Goethe-Universität Frankfurt, Germany

### Session V: 12 | Time: 17:15-18:45 | Location: Seminar Room - S06

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT**

**Chair**
Christian Tarchi, University of Florence, Italy

**Understanding collaborative learning of mathematics through positioning theory**
Sonia Felix, University of Lisbon, Portugal

**Potential Influencing Factors for Teachers’ Self-Efficacy Beliefs concerning Inclusive Education**
Frank Hellmich, Paderborn University, Germany; Marvin Felix López, Paderborn University, Germany; Margarita Krockenberg, University of Bielefeld, Germany

**Ethical school leadership in Estonia and Finland: Multiple case studies of exemplary principals**
Eve Essen Schmidt, Tallinn University, Estonia; Elina Kuusisto, University of Humanistic Studies, Netherlands; Katrina Poom-Valits, Tallinn University, Estonia; Kirsi Tira, University of Helsinki, Finland

**Development profiles: How teachers’ collaborative attitudes, knowledge and skills improve?**
Nina Impä, University of Oulu, Finland; Pekko Sikander, University of Oulu, Finland; Samma Jänne, University of Oulu, Finland

### Session V: 13 | Time: 17:15-18:45 | Location: Seminar Room - S04

**SINGLE PAPER: FACILITATING PRODUCTIVE CLASSROOM CONVERSATIONS IN COMPUTER-SUPPORTED LEARNING ACTIVITIES**

**Chair**
Anniken Furfberg, University of Oslo, Norway

**Developing a model for teacher professional digital competence**
Annika Lantz-Andersson, University of Gothenburg, Sweden; Mona Lundin, Göteborg university, Sweden; Ewa Skantz Åberg, University of Gothenburg, Sweden; Pia Williams, Göteborg university, Sweden

**Teaching and learning in a technology-rich makerspace: The meaning of social objects**
Kristina Kumpulainen, University of Helsinki, Finland; Anu Kajamäki, University of Helsinki, Finland; Antti Rajala, University of Helsinki, Finland

**Interactive whiteboard activities as means for facilitating productive whole-class conversations**
Kenneth Silseth, University of Oslo, Norway; Anniken Furfberg, University of Oslo, Norway

**Facilitating participation in productive class dialogues with educational microblogging**
Ingvi Ramsussen, University of Oslo, Norway; Ole Smendal, Department of Education, Norway; Paul Warner, University of Cambridge, United Kingdom; Jo Inge Johansen Freytag, University of Oslo, Norway; Victoria Cook, University of Cambridge, UK, United Kingdom; Louis Major, University of Cambridge, United Kingdom
**FRIDAY, 16 AUGUST 2019**

<table>
<thead>
<tr>
<th>Session V: 14</th>
<th>Time: 17:15-18:45</th>
<th>Location: Seminar Room - S05</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: APPROACHES FOR INTEGRATION OF REFUGEES IN EDUCATION IN HOST COUNTRIES</strong></td>
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<td><strong>Chair</strong> Ron Pat-El, Open University, Netherlands</td>
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| The role of social and cultural capital in the education of newcomer English learners  
  Rabia Hos, University of Rhode Island, United States |
| Free digital education for migrants and refugees in Europe: views from learners and stakeholders  
  Jonathan Castaño, European Commission - Joint Research Centre, Spain |
| Specific Factors for Refugees Dropping Out of an Online Study Program  
  Roland Happ, Johannes Gutenberg University Mainz, Germany; Franziska Reinhardt, Johannes Gutenberg-Universität Mainz, Germany; Olga Zlatkin-Troitschanskaia, Johannes Gutenberg-Universität Mainz, Germany; Sarah Neß-Müller, Johannes Gutenberg-Universität, Germany |
| Student Support in the Context of MOOC-based Online Education for Refugees  
  Patricia Arnold, Munich University of Applied Sciences, Germany; Belma Halko, Munich University of Applied Sciences, Germany |

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<thead>
<tr>
<th>Session V: 15</th>
<th>Time: 17:15-18:45</th>
<th>Location: Seminar Room - S14</th>
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<tr>
<td><strong>SINGLE PAPER: LEARNING ANALYTICS</strong></td>
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<td><strong>Chair</strong> Mari-Paaulina Vainikainen, Tampere University, Finland</td>
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| Profiles of learning activity emotions: how boredom and enjoyment stand out  
  Dirk Tempelaar, Maastricht University, Netherlands |
| Learning analytics: The paradox of compassionate teaching  
  Marion Blumenstein, University of Auckland, New Zealand; Steve Leichtweis, The University of Auckland, New Zealand |
| Self-regulation in 429 Math exercises over seven weeks of learning: a cluster analysis  
  Bart Rinettes, Open University, United Kingdom; Dirk Tempelaar, Maastricht University, Netherlands; Quan Nguyen, Open University, United Kingdom; Allison Littlejohn, Open University, United Kingdom |
| Logfile and protocol-based analysis of domain-specific problem-solving processes  
  Felix Walker, Technical University of Kaiserslautern, Germany; Andrea Faadh-Becker, Technical University of Kaiserslautern, Germany |

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<th>Session V: 16</th>
<th>Time: 17:15-18:45</th>
<th>Location: Seminar Room - S10</th>
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<td><strong>SINGLE PAPER: SELF-REGULATION</strong></td>
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<td><strong>Chair</strong> Caroline Mansfield, University of Notre Dame Australia, Australia</td>
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| How do students learn? Learning Strategies and Motivation  
  Anne Frieda Doris Kibbi, Ulm University, Germany; Ulike Nett, Augsburg University, Germany; Lisa Respondek, Ulm University, Germany; Tina Seufert, Ulm University, Germany |
| A transitional academic year to higher education: challenges, experiences and strategies at the FYUP  
  Javier Fernández, Universidad Autonoma de Madrid, Spain; Ernesto Panadero, Universidad Autonoma de Madrid, Spain; Daniel García, Universidad Europea de Madrid, Spain |
| Do Friends have Similar Levels of Academic Motivation at School? A Social Network Study  
  Laura Burgess, University of Reading, United Kingdom; Carolyn McNabb, University of Reading, United Kingdom; Patricia Riddell, University of Reading, United Kingdom; Amy Fancourt, BrainCanDo Centre for Research, Queen Anne's School, United Kingdom; Kou Murayama, University of Reading, United Kingdom |
| Perceived autonomy support as multifaceted environmental antecedent of achievement emotions  
  Stefan Markus, University of Wuppertal, Germany |
Abstracts
Abstracts are available on the EARLI 2019 conference website at earli.org/EARLI2019 (See “Programme”), as well as in the EARLI 2019 Guidebook app.

Afterparty
We offer an open afterparty after the EARLI gala dinner for all delegates, on Friday (August 16th - 22:30)! The EARLI 2019 afterparty gives all delegates the opportunity to join the informal part of the evening. Entrance is free, you will only have to pay for your drinks. The afterparty will take place at Pontstrasse 72 – only a three minutes’ walk from the Coronation Hall. We are looking forward to a great party!

Airport transportation
There are a myriad of airports to choose from spread across several countries – Maastricht Aachen (MST) in the Netherlands, Cologne (CGN), Frankfurt (FRA) and Düsseldorf (DUS) in Germany or Brussels (BRU) in Belgium, – each of which offer a good railway or bus connection to the city (approximately 1,5 hours from each airport. Train or bus tickets can be bought online at bahn.com. Some tickets can only be bought at the railway station.

ATM
The closest ATM location is in front of the Mensa Academica, address Pontwall 1.

Accessibility
The C.A.R.L. building is equipped with ramps and toilet facilities specifically for people using wheelchairs. If you require assistance or guidance for part of, or throughout the conference, contact the main information desk at the C.A.R.L. building any time during the conference.

Bike rental
Delegates can rent a bicycle throughout the conference via ‘Swapfiets’ (please note that the contingent of bikes is limited). For a fixed fee of € 17.50 (€ 15 for students) delegates will be provided with a bicycle for the whole week. The bicycle can either be picked up at the Swapfiets shop close to the conference venue (address: Pontstrasse 133) or be brought to a desired address in Aachen. Since Swapfiets usually rents bicycles for at least a month, delegates will have to sign a contract for one month, which can be terminated immediately for the end of August. If you are interested in renting a bike, please register via following link: https://swapfiets.de/en/offer/aachen.

Please enter the address where you will be staying during the conference and type “EARLI” in the comment box. Please be aware that Swapfiets does not rent bicycle helmets. During the conference (see Opening Hours), you may use the bicycle garage beneath the C.A.R.L. building for free.

Break express
Before each keynote session, we offer a 5 to 7-minutes activity break in Lecture Hall H01, which is led by qualified trainers from the university sports centre (start at 13:35). The exercises include loosening, stretching, relaxing and strengthening exercises, especially for the shoulder, neck and back muscles.

Catering
On-site catering is included in the EARLI 2019 registration fee. Coffee and water will be available throughout the conference, allowing you to catch up with colleagues for a drink at any time of the day. EARLI highly values your time, which we realise is often too limited at our conference. Therefore, lunches at EARLI 2019 will be fully flexible, allowing you to plan your lunch depending on your individual conference schedule. You can enjoy lunch at the University Mensa, address: Pontwall 3, throughout the conference from 11:15 to 14:30. The Mensa serves warm and cold dishes catered to suit specific dietary needs (vegetarian, lactose-free, gluten-free…). If you prefer a quick lunch on site, a limited amount of lunch bags will be available from 11:00 each conference day at a first come, first serve basis in the C.A.R.L. cafeteria.

Use your lunch vouchers provided in your nametag to get your lunch. At the University Mensa, you will be offered one main dish, one dessert and one drink for your voucher (other combinations are not possible).

Delegates who would like to purchase more than a lunch voucher provides, can do so by using a Guest Card (paying cash or card is not possible in the Mensa). Guest Cards can be ordered at the Infopoint of the Mensa.
Closing Ceremony
The EARLI 2019 closing ceremony will take place during the gala dinner at the Aachen Coronation Hall on Friday, August 16th. Delegates who purchased a dinner ticket beforehand will celebrate the end of the conference and welcome EARLI 2021.

Conference app
The EARLI 2019 Conference app is the best way to stay up to date with the latest programme changes and create your personal conference itinerary. The app is hosted by Guidebook and can be downloaded free of charge in the App Store or Google Play Store. Install the Guidebook app and enter the passphrase “earli2019” to download the EARLI 2019 Conference app.

Conference assistants
EARLI 2019 conference assistants are available during the conference. Assistants can answer questions about wayfinding, guide you through the building and to events, help you set up your presentation, etc. Assistants will be wearing blue t-shirts with the EARLI logo.

Conference venue
The conference venue is located at the C.A.R.L. building of the RWTH Aachen University (address: Classenstrasse 11).

Contact information during the conference.
Main information desk: Foyer in the C.A.R.L. building (ground floor).
EARLI Office: Room S08, second floor at the C.A.R.L. building. See EARLI Office for more information.

Doctoral Consortium Lunch
The Doctoral Consortium Lunch meeting is meant for PhD students who are in the final stages of their doctoral studies, or Junior Researchers who have recently earned their doctoral degree. The meeting focuses on sharing information and experiences about the Mentoring Grant. The Doctoral Consortium Lunch meeting will take place on Monday August 12th in the Institute of Education (address: Eilfschornsteinstrasse 7, room 101, at 12:15 - 13:15). Pre-registration is required.

EARLI Office
The EARLI Office is located in room S08, second floor at the C.A.R.L. building. The opening hours for the EARLI office are as follows:
Monday August 12th 7:30-17:00
Tuesday August 13th 8:00-17:00
Wednesday August 14th 8:00-17:00
Thursday August 15th 8:00-17:00
Friday August 16th 8:00-17:00

Emergency
In case of a non-life-threatening emergency, two paramedics will be available throughout the conference. They can be found on the ground floor of the Foyer in the C.A.R.L. building, next to the registration desk. In case of a life-threatening emergency (medical, fire, police), call number 112 from any European mobile phone and inform a conference assistant at the main information desk.

Exhibition
The exhibition area is located on the ground floor of the C.A.R.L. building. The exhibition is open from Tuesday until Friday.
Tuesday August 13th 8:30-17:30
Wednesday August 14th 8:30-17:30
Thursday August 15th 8:30-17:30
Friday August 16th 8:30-17:30
Floorplans

C.A.R.L. Ground Floor

C.A.R.L. First Floor

C.A.R.L. Second Floor
**Gala Dinner**
The EARLI 2019 Gala Dinner will be served at the Aachen Coronation Hall in Aachen’s town hall, address: Markt, 52062 Aachen. We warmly welcome all guests on Friday August 16th from 19.30 onwards, for a tasteful and pleasant dining experience with local dishes and lively entertainment. The EARLI 2019 Gala Dinner is already sold out! If you purchased a dinner ticket, you will find the voucher with your nametag. After the Gala Dinner, we offer an open afterparty for all delegates, on Friday (August 16th - 22:30). The afterparty will take place at Pontstrasse 72 – only a three minutes’ walk from the Coronation Hall. See Afterparty for more information.

**Guided Tours**
Delegates who would like to learn anecdotes, legends and stories about the historical centre, the town hall, cathedral, Aachen’s architecture, or the Route Charlemagne, can obtain information and book a ticket for public guided tours through Aachen via aachen-tourismus.de/en/. Delegates can also book guided tours and tickets through the cathedral and the cathedral treasury. Tickets for guided tours in the cathedral and the treasury are only available in the Dominformation (address Johannes-Paul-II.-Strasse 1). Group Tours for the Cathedral require advance reservation at: tour@aacheneredom.de.

**Information Desk**
The main EARLI information desk is located on the ground floor of the C.A.R.L. building. Other information desks are located on the first and second floor as well. All information desks are open throughout the conference.

**Internet Access**
The wireless network “Eduroam” is accessible throughout the conference. A username and password for the wireless network “RWTH-guests” is printed on your nametag. Our wireless networks are accessible in all of the RWTH Aachen University buildings.

To use the guest account:
- Connect to the WLAN “RWTH-guests”
- Try to visit any website
- Follow the link to the guest login
- Use the login and password from your name-tag

**Keynote presentations**
The keynote presentations will be held from Wednesday, August 14th, to Friday, August 16th, at 13:45-15:15 in the lecture halls H01, H02 and H03 in the C.A.R.L. building. Please see the timetable for more information.

**Leisure and Excursions**
For more information about Aachen and its surroundings please have a look at the Aachen Tourism website (aachen-tourismus.de/en/) or visit the Tourist Info, address: Friedrich-Wilhelm-Platz.

**Lockers**
Delegates can use the lockers on the ground floor of the Foyer in the C.A.R.L. building. 520 lockers in different sizes are available throughout the conference. To use a locker, a 1- or 2-Euro coin must be inserted as a pledge.

**Lost Property**
In case you lose something during the conference, please contact any of the conference assistants or the EARLI Information Desk.

**Lunch with Professors**
The Lunch with Professors offers young researchers the opportunity to discuss with experts from their field of interest during an informal lunch. The event will take place on Tuesday August 13th and Wednesday August 14th from 12:15 - 13:15 at the Institute of Education (Eilfschornsteinstrasse 7, room 121). Pre-registration is required.

**Members’ Meeting**
All conference attendees and EARLI members are invited to take part in this assembly meeting. The current EARLI Executive Committee and the EARLI President will report on the activities of the EARLI community over the past two years, and expand on its future plans and initiatives. This meeting will take place on Wednesday August 14th from 17:15 – 18:45 in lecture hall H03.

**Merchandise**
RWTH Aachen University merchandise is available at the RWTH Shop in the main building of the university, address: Templergraben 55. A booth, which exclusively offers RWTH Aachen University merchandise, will be located in the C.A.R.L. building on the
ground floor on Wednesday, August 14th, from 10:00 - 15:00.

**Nametags**
Your nametag will be given to you with your conference materials upon registration. Please wear your nametag at all times to guarantee entrance to all areas of the conference. Please visit the Main Information Desk at the C.A.R.L building if you lose your nametag. We also encourage you to return your lanyard and nametag upon leaving the conference. You will find dedicated collection boxes dotted around the venue. EARLI will reward a number of participants who handed in their nametags with a free EARLI membership for 2020!

**Opening Ceremony**
The Opening Ceremony of the EARLI 2019 conference will take place in the lecture hall H01 in the C.A.R.L. building on Monday August 12th between 9:45 - 10:30. Join us for the opening of the EARLI conference and useful conference information.

**Opening Hours**
The opening hours of the C.A.R.L. building are as follows:
- Monday August 12th: 6:30-23:00
- Tuesday August 13th: 6:30-20:00
- Wednesday August 14th: 7:30-19:30
- Thursday August 15th: 7:30-19:30
- Friday August 16th: 7:30-19:30

Delegates must leave the building before the closing hour.

**Opening Reception**
The Opening Ceremony of the EARLI 2019 conference will take place in the Foyer of the C.A.R.L. building on Monday August 12th between 19:00 - 22:00.

**Parking**
For delegates who will travel to Aachen by car we offer parking tickets for the Parking Zone close to the conference venue. For €9 per day you are permitted to park at RWTH parking spaces within the Parking Zone U. We recommend the RWTH Car Park, which is only a 5-minute walk from the C.A.R.L. building, address: Professor-Pirlet-Strasse 10. Delegates, who have ordered a ticket beforehand, can pick up and pay their parking ticket at the main information desk.

Delegates who will be using a bike throughout the conference (See Bike rental) may use the bicycle garage beneath the C.A.R.L. building for free.

**Photocopying**
The closest copy shops are located at Wuellnerstrasse 6 (Audimax-Kopiercenter), Templergraben 32 (UniCopy) and Templergraben 44 (Copy 2000).

**Policy Making Session**
Education is more important than ever. The conference theme “Thinking Tomorrow’s Education: Learning from the past, in the present and for the future” pushes the evidence-based discussion of ongoing learning forward. In this EARLI panel, key questions on how to bridge the gap between educational research and policy-making are discussed by outstanding representatives of policy-makers and educational scientists.

**Post Office**
The nearest post office is located at the Postamt Pontdriesch, address: Pontdriesch 4.

**Presidential Address & Awards**
The EARLI 2019 Presidential Address and Awards Ceremony “Researching socially shared regulation in learning” will take place on Monday August 12th between 17:15 – 18:45 in Lecture Hall H03. During this session, EARLI President Prof. Dr. Sanna Järvelä will address the EARLI community. The EARLI Awards winners (Erik De Corte Award, Oeuvre Award and Outstanding Publication Award) will also be announced during this session.

**Programme Changes**
Changes will be posted outside of the affected rooms, at the Main Information Desk, at the Screens in the Foyer of the C.A.R.L. building and via the conference app.

**Programme book**
Delegates who purchased a printed programme book with their registration ticket, can pick up their book right next to the registration desk. There is a limited amount of programme books, which can be purchased on site at a small surcharge of €10. The conference books are printed on recycled paper.
Public Transportation
The C.A.R.L. building of the RWTH Aachen University is close to the Aachen city centre. It is easiest to walk, because the city centre is a pedestrian zone. The C.A.R.L. building is located 300 meters away from the railway station “Aachen West”. The bus station “Audimax” is located right in front of the C.A.R.L. building. Please note that the railway station “Aachen West” is not barrier-free. All buses are equipped with a lowering function as well as folding ramps for wheelchairs. Bus tickets can be purchased inside the bus from the bus driver paying cash. Route search for local bus routes is available on the internet at aseag.de OR bahn.com/en.

Registration
The EARLI conference registration at the Foyer of the C.A.R.L. building (ground floor) will be open as follows:

- Monday August 12th: 7:30-17:00
- Tuesday August 13th: 8:00-17:00
- Wednesday August 14th: 8:00-17:00
- Thursday August 15th: 8:00-17:00
- Friday August 16th: 8:00-17:00

From Wednesday August 14th onwards, the registration desk moves to the main information desk. For any queries regarding registration or payments contact the EARLI Office, room S08, second floor at the C.A.R.L. building.

Running with Presidents
On Wednesday, August 14th, delegates can join the EARLI president Sanna Järvelä as well as the former EARLI presidents Sari Lindblom and Hans Gruber on their morning run. The 5 - 7 kilometre run will start at 7:00 at the Ponttor. All delegates are welcome.

SIG Coordinators’ Meeting
All outgoing and new SIG Coordinators are invited to take part in the Biennial SIG Coordinators Meeting, on Monday, August 12th from 08.00 - 09.30. This meeting will take place in the C.A.R.L. building, room H08.

SIG Meetings and Dinners
All SIG meetings will take place on Tuesday August 13th between 17:15 - 19:15. Meetings of SIGs with odd numbers (1, 3, 5, etc.) will take place between 17:15 - 18:15, while the meetings of SIGs with even numbers (2, 4, 6, etc.) will take place between 18:15 - 19:15. All SIG meetings will be followed by SIG dinners.

Smoking
Smoking is prohibited in all conference venues.

Social Events
See Afterparty, Break Express, Doctoral Consortium, Gala Dinner, Lunch with Professors, Members Meeting, Opening Ceremony, Opening Reception, Presidential Address and Awards, Running with Presidents SIG Business Meetings and Dinners.

Social Media
Follow us on Twitter, Facebook (@EARLI2019) and Instagram (@earli.office) for all the latest updates and impressions. Share your thoughts, photos and videos using #JURE2019 and #EARLI2019.

Sport facilities
Only 500 metres from the C.A.R.L. building, the Königshügel (kings hill) is located, address: Professor-Pirlet-Strasse. Around the natural grass pitch of the stadium there is a 400-metre ash track which can be used freely. Right next to the ash track you can find a path (Finnbahn) which consists of a mineral base layer, an intermediate layer of sand and a top layer of wood chips. It has a specific system with drainage adapted to the soil conditions. The total length of the section is 1,150 metres. At the edge of the ash track, two outdoor fitness facilities can be used which are equipped with a calisthenics station and approximately 100 square meters of fall protection mats.

Sustainability
To lower the environmental impact of our conference, we are taking a number of steps to reduce waste and offer eco-friendly alternatives to your conference experience. Each delegate will receive a special EARLI 2019 reusable water bottle in their conference bag, instead of using plastic cups for water breaks. Reusable coffee mugs will replace throwaway plastic or paper mugs for your daily caffeine fix. Additionally, printed programme books will be offered at a small surcharge or € 10 to those who prefer a hard copy (to be purchased together with your registration ticket). The EARLI 2019 conference app offers an environmentally friendly alternative to check the last updates to the conference programme!
Taxi
Company: Taxi TAAV
Bookings and orders: +49 241 666 66

Company: Minicar AC
Bookings and orders: +49 241 900 700

Tip in restaurants
In Germany, the rule of thumb is: you should, but you don’t have to. The service charges are included in the price. However, there should be a good tip for a good service. If you follow the 5-10% rule, you are on the safe side.

Tourist Information
For more information, please have a look at the Aachen Tourism website (aachen-tourismus.de/en/) or visit the Tourist Info, address Friedrich-Wilhelm-Platz.