WELCOME TO EARLI 2021!

Shortly after the EARLI 2019 conference in Aachen had ended, preparations kicked off for what would have been a wonderful EARLI 2021 conference, hosted by the University of Gothenburg in Sweden. We were particularly keen to return to Gothenburg, previous host of EARLI 1999, as many familiar faces took up their roles in the local organising committee for the second time around. Additionally, EARLI 2021 would be a part of Gothenburg’s own year-round celebrations, marking 400 years since its founding in 1621.

Our Swedish colleagues, with Prof. Roger Säljö at the helm as Conference President, booked venues, made catering arrangements and even planned for keynote sessions in a church! Yet, sadly, the global COVID-19 pandemic decided otherwise. In September 2020, with heavy heart, the EARLI Executive Committee decided to cancel the physical JURE and EARLI 2021 conferences in Gothenburg and pivot entirely towards a virtual conference. We extended the submission deadline, adapted paper types to fit the online reality and embarked on a thorough market research to find the best suited virtual conference platform.

While different than our previous EARLI’s conferences, a fully virtual event still offers those key elements we’ve come to love: the opportunity for members of the EARLI community to present academic findings as well as join in social and networking events, yet now safely from the comfort of home.

We wish you a wonderful time at EARLI 2021!

Note: The details in this programme book were accurate at the time of publishing. However, programme changes may have occurred thereafter. Find out about any changes to the programme via the conference website (EARLI.org/EARLI2021) and in the EARLI 2021 Virtual Event Platform (hosted by PheedLoop).
### PROGRAMME OVERVIEW

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<thead>
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<th>MONDAY – 23.08.21</th>
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<th>WEDNESDAY – 25.08.21</th>
<th>THURSDAY – 26.08.21</th>
<th>FRIDAY – 27.08.21</th>
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<tbody>
<tr>
<td>09:00 – 09:15</td>
<td>Opening Ceremony</td>
<td>Session G</td>
<td>Session Q</td>
<td>Session W</td>
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<tr>
<td>09:00 – 10:00</td>
<td>Policy Makers Panel</td>
<td>Session L</td>
<td>Session O</td>
<td>Session X</td>
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<td>10:00 – 10:45</td>
<td>Fika</td>
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<tr>
<td>10:00 – 10:45</td>
<td>Jacobs Foundation Award Winners Coffee</td>
<td>10:30 – 10:45</td>
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<td>10:45 – 11:45</td>
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<tr>
<td>12:00 – 13:00</td>
<td>Keynotes</td>
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<tr>
<td>13:00 – 14:30</td>
<td>Lunch break</td>
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<tr>
<td>13:30 – 14:15</td>
<td>Lunch with the Professors</td>
<td>Walk with the President</td>
<td>Lunch break</td>
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<tr>
<td>14:30 – 15:30</td>
<td>Presidential Address</td>
<td>Members Meeting</td>
<td>Session S</td>
<td>Session Y</td>
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<tr>
<td>15:00 – 15:30</td>
<td>Awards Ceremony</td>
<td>15:00 – 15:30</td>
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<td>15:30 – 15:45</td>
<td>Guided Meditation</td>
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<td>15:45 – 16:45</td>
<td>Session I</td>
<td>Session N</td>
<td>Session T</td>
<td>Session Z</td>
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<tr>
<td>16:45 – 17:30</td>
<td>Fika</td>
<td>Fika</td>
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<td>Closing Ceremony</td>
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<tr>
<td>16:45 – 17:30</td>
<td>and Café with the EC</td>
<td>and Virtual Tour of Gothenburg</td>
<td>16:45 – 17:30</td>
<td>Greek Cooking Class</td>
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<td>17:30 – 18:30</td>
<td>Session J</td>
<td>Session O</td>
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<tr>
<td>18:45 – 19:45</td>
<td>Session F</td>
<td>Session K</td>
<td>Session P and Cocktail Hour</td>
<td>Session V</td>
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**Fika**

In order to honour the original hosts of the EARLI 2021 conference, we have dotted several “typically Swedish” elements across the conference programme. Coffee breaks have been named “fika” as a nod to the Swedish tradition of having a coffee and sweet treat with colleagues, family or friends. However, fika is much more than having a coffee. It is a social phenomenon, a legitimate reason to set aside a moment for quality time. That is why you will find many social events scheduled during our fika breaks.

**Throughout**

Given the specific nature of a virtual event, many activities can be enjoyed before, during and after the conference. A few days before the start of the conference, you will be offered early access to the EARLI 2021 virtual event. Any pre-recorded content will be available to watch beforehand. Equally, you will already be able to make use of interactive options, such as the networking tables and the chat function. You are also most welcome to visit the Exhibit Hall to engage with our sponsors, as well as the SIG Hall where you can get to know more about the upcoming SIG conferences. A number of sessions will be recorded during EARLI 2021 and made available for on-demand viewing after the event has finished.

*All timings are Central European Summer Time (CEST).*
KEYNOTE SPEAKERS

Prof. Dr. Paul Ashwin
Lancaster University (UK)
Thinking Beyond the Crises: what is a university education for?

Prof. Dr. Ola Erstad
University of Oslo (NO)
Learning Lives and Lived Citizenship - trajectories of participation and future-making

Prof. Dr. Raija Hämäläinen
University of Jyväskylä (FI)
The Challenges of Digitalisation: Innovative Multidisciplinary Methods and Technologies for Enhancing Learning and Professional Development

Prof. Dr. Halszka Jarodzka
Open University (NL)
Vision for Education - How Eye-tracking Helps Us to Understand and to Improve Learning and Instruction

Prof. Dr. Cintia Rodriguez
Autonomous University of Madrid (ES)
Early Manifestations of Executive Functions from the End of the First Year at Infant School, A Pragmatic View

Prof. Dr. James Hiebert
University of Delaware (US)
A Practical Theory of Teaching

Prof. Dr. Tina Seufert
University of Ulm (DE)
Learners’ resources as moderators for instructional design, self-regulation and cognitive load

Prof. Dr. Hilde Van Keer
Ghent University (BE)
“And all at once, summer collapsed into fall”: The Vital, Though Challenging Nature of Self-regulated Learning More Than Ever Acknowledged
The EARLI and JURE 2021 conferences will be hosted on PheedLoop, our virtual conference platform. PheedLoop offers a stable, scalable and reliable conference solution that is incredibly easy to use. Most importantly, PheedLoop offers a full integration with Zoom, which means that all sessions will benefit from the advantages that Zoom has to offer (stable and reliable connection, well known in academia, screensharing, breakout rooms, …) without the need to leave the PheedLoop platform. We are also excited about PheedLoop’s own opportunities to host topic-specific networking tables, a virtual exhibition for sponsors and publishers, pre-recorded and on-demand content to view before or after the event and much more.

We will open the PheedLoop platform a few days before the start of each conference, to allow you to familiarise yourself with the interface, bookmark the sessions you want to attend and start connecting with fellow delegates. You will receive a unique PheedLoop login via the same email address used to purchase your conference registration. Anyone taking up an active role at the conference will be offered access to their “speaker portal” where you can update your profile and upload documents to your sessions. Access to your speaker portal will be offered from the 2nd of August onwards. At that point, presenters of an espresso session will also receive more detailed information on how to add their pre-recorded materials.

In order to ensure a smooth conference experience for both conference attendees and presenters, we will be providing a series of pre-recorded tutorials that walk you through the main functionalities of PheedLoop, our virtual event platform. These recordings will be made available on the conference website throughout the month of July, as well as on the EARLI YouTube channel. For anyone who still has pending questions, we are hosting a live Q and A session to pick up on anything that might still be unclear. These live sessions are scheduled for the 20th of July as well as the 4th and 11th of August. Further details will be shared on the EARLI 2021 conference website. During the conferences themselves, we also have the necessary support mechanisms in place to ensure that your conference experience is as easy as possible. Each session will have a dedicated EARLI helper present to help you get started with your presentation. They will stay on-hand during the entire session to make sure that things run smoothly. For urgent questions, you can use the support chat widget, which will connect you with a member of the EARLI Office.

One of the advantages of hosting an online event, is the opportunity to provide recorded materials for on-demand viewing even long after the conference has finished. As such, some of the sessions at EARLI or JURE 2021 may be recorded and made available for on-demand viewing within PheedLoop. None of our recordings, apart from the keynotes, will be shared outside of PheedLoop, for which a unique login is required. If you don’t wish to be recorded, we advise you to keep your camera off when attending a session. We also have a take-down policy in place, meaning that any recordings of your image being shared against your wishes, will be taken down immediately upon your request.
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<tr>
<th>ORGANISER</th>
<th>SYMPOSIUM TITLE</th>
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<tbody>
<tr>
<td>Claire Polo</td>
<td>SIG 26: How To Teach Argumentation, Dialogue and Reasoning For Citizenship?</td>
<td>Monday 23.08 10:45 – 11:45</td>
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<tr>
<td>Cornelia Schoor and Yvonne Kammerer</td>
<td>Beyond Mere Content: Contextual and Metatextual Aspects in Multiple Document Comprehension</td>
<td>Monday 23.08 12:00 – 13:00</td>
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<tr>
<td>Dominik E. Froehlich</td>
<td>Advances In Mixed-Methods Social Network Analysis</td>
<td>Monday 23.08 12:00 – 13:00</td>
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<tr>
<td>Crina Damsa</td>
<td>Analytical Approaches On Collaborative Learning With Digital Knowledge Objects</td>
<td>Monday 23.08 14:30 – 15:30</td>
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<tr>
<td>Tobias Feldhoff and Jerich Faddar</td>
<td>Educational Effectiveness and Improvement During COVID-19: Challenges and Lessons</td>
<td>Monday 23.08 15:45 – 16:45</td>
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<tr>
<td>Anique de Bruin</td>
<td>Effort Monitoring and Regulation (EMR): First Findings From a Novel Framework</td>
<td>Monday 23.08 15:45 – 16:45</td>
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<tr>
<td>Jennifer Symonds and Ricardo Böheim</td>
<td>Momentary Situated Engagement, Learning and Performance</td>
<td>Monday 23.08 17:30 – 18:30</td>
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<tr>
<td>Andreas Lachner</td>
<td>What Machine Learning Offers To Learning And Instruction: Potential &amp; Ethical Considerations</td>
<td>Monday 23.08 18:45 – 19:45</td>
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<tr>
<td>Stella Vosniadou</td>
<td>Teacher Learning And Professional Development From a Conceptual Change Perspective</td>
<td>Tuesday 24.08 09:00 – 10:00</td>
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# INVITED SYMPOSIA

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<tbody>
<tr>
<td><strong>Liesje Coertjens and</strong></td>
<td>Learning By Doing Won’t Suffice: What Determines The Quality Of Peer Feedback?</td>
<td>Tuesday 24.08 09:00 – 10:00</td>
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<tr>
<td>Christopher Neil Prilop</td>
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<td>SIG 1</td>
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<tr>
<td><strong>Tim Mainhard</strong></td>
<td>The Potential of Biophysics to Understand Motivation, Engagement and Learning Experiences</td>
<td>Tuesday 24.08 12:00 – 13:00</td>
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<tr>
<td>Emerging Field Group</td>
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<tr>
<td><strong>Nathalie Muller Mirza</strong></td>
<td>Social Interactions and Life Long Learning</td>
<td>Tuesday 24.08 15:45 – 16:45</td>
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<tr>
<td>SIG 10</td>
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<tr>
<td><strong>Ake Ingerman</strong></td>
<td>Learning Study in Prospective Teacher Education</td>
<td>Tuesday 24.08 17:30 – 18:30</td>
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<td>SIG 9</td>
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<tr>
<td><strong>Lisa Bardach</strong></td>
<td>From Heterogeneous Perceptions of Instruction and Student Characteristics to Adaptive Teaching</td>
<td>Tuesday 24.08 17:30 – 18:30</td>
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<tr>
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<tr>
<td><strong>Eveline Gutzwiller-Helfenfinger</strong></td>
<td>Moral and Democratic Education in an Age of Extremism</td>
<td>Tuesday 24.08 18:45 – 19:45</td>
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<td>SIG 13</td>
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<tr>
<td><strong>Simon Beausaert</strong></td>
<td>Developing Connectivity Between Education and Work: Principles and Practices</td>
<td>Wednesday 25.08 09:00 – 10:00</td>
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<td>SIG 14</td>
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<tr>
<td><strong>Mareike Kunter and Robert Klassen</strong></td>
<td>In Search of the ‘Good’ Teacher: Perspectives on Teacher Competence</td>
<td>Wednesday 25.08 12:00 – 13:00</td>
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<tr>
<td><strong>Erika Löfström</strong></td>
<td>Developing Research and Academic Careers in Uncertain Times</td>
<td>Wednesday 25.08 12:00 – 13:00</td>
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<tr>
<td>Eeva Haataja and Halszka Maria Jarodzka Emerging Field Group</td>
<td>New Solutions for Educational Eye-Tracking Research</td>
<td>Wednesday 25.08 15:45 – 16:45</td>
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<td>Stephan Vogel SIG 22</td>
<td>Genes, Brain and Social Contexts: Their Interactions and Implications for Education</td>
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<td>Martin Ubani SIG 19</td>
<td>Religions and Worldviews for 21st Century Citizenship Skills</td>
<td>Wednesday 25.08 18:45 – 19:45</td>
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<tr>
<td>Mikaël De Clercq SIG 4</td>
<td>Enhancing Support in the Transition to Higher Education – In the Light of Student’s Diversity</td>
<td>Thursday 26.08 09:00 – 10:00</td>
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<tr>
<td>Wouter R. van Joolingen SIG 20</td>
<td>Engaging Teachers in Inquiry Learning</td>
<td>Thursday 26.08 09:00 – 10:00</td>
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<tr>
<td>Jennifer Paetsch and Barbara Drechsel SIG 11</td>
<td>University Teacher Education in Times of COVID-19</td>
<td>Thursday 26.08 12:00 – 13:00</td>
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<tr>
<td>Piet Van den Bossche EARLI Journals</td>
<td>Meet the EARLI Editors</td>
<td>Thursday 26.08 14:30 – 15:30</td>
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<tr>
<td>Leen Catrysse and Ellen Kok SIG 27</td>
<td>The Pitfalls and Promises of Online Collection of Process Data</td>
<td>Thursday 26.08 15:45 – 16:45</td>
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<tr>
<td>Antti Rajala and Giuseppe Ritella SIG 25</td>
<td>Re-theorizing Learning and Research Methods in Learning Research</td>
<td>Thursday 26.08 15:45 – 16:45</td>
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<tr>
<td>Teresa Limpo and Guido Nottbusch SIG 12</td>
<td>The Role of Non-Academic Skills in Writing</td>
<td>Thursday 26.08 15:45 – 16:45</td>
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<tr>
<td><strong>Tieme Janssen</strong>&lt;br&gt;Emerging Field Group</td>
<td>Educational Neuroscience: a Journey from the Lab to the Real-World, and Back…</td>
<td>Thursday 26.08 17:30 – 18:30</td>
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<td><strong>Marc Sarazin</strong>&lt;br&gt;SIG 17</td>
<td>Tidying the Toolbox: Trials, Tribulations and Triumphs in Research on Learning and Education</td>
<td>Thursday 26.08 18:45 – 19:45</td>
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<td><strong>Becky Bergman</strong>&lt;br&gt;SIG 21</td>
<td>Beyond the Pandemic: Shaping of Futures in (Even More?) Diverse Educational Settings</td>
<td>Friday 27.08 09:00 – 10:00</td>
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<tr>
<td><strong>Anastasiya Lipnevich and Naomi Winstone</strong>&lt;br&gt;Emerging Field Group</td>
<td>Learner-Centered Processes in Feedback Across Contexts: Theoretical and Empirical Findings</td>
<td>Friday 27.08 09:00 – 10:00</td>
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<tr>
<td><strong>Alberto Cattaneo, Martin Merkt and Moritz Sahlender</strong>&lt;br&gt;SIG 6</td>
<td>The Impact of Different Educational Technology Designs on Learning in Work-Related Contexts</td>
<td>Friday 27.08 09:00 – 10:00</td>
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<tr>
<td><strong>Pirjo Aunio</strong>&lt;br&gt;SIG 15</td>
<td>Validity and Reliability Evidence of Measures Used to Screen Learning Difficulties in Maths</td>
<td>Friday 27.08 12:00 – 13:00</td>
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<tr>
<td><strong>Janneke van de Pol and Charlotte Dignath</strong>&lt;br&gt;SIG 16</td>
<td>How Teachers Think About SRL and Judge SRL in Students</td>
<td>Friday 27.08 14:30 – 15:30</td>
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<tr>
<td><strong>Fani Lauermann, Hanna Jarvenoja, Julia Morinaj and Martin Daumiller</strong>&lt;br&gt;SIG 8</td>
<td>The Life and Legacy of Stuart A. Karabenick: “Acquired Wisdom? More like Lessons Learned”</td>
<td>Friday 27.08 15:45 – 16:45</td>
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</table>
The EARLI 2021 Conference programme is packed with social activities to provide formal and informal spaces for conference delegates to meet, network and relax between sessions. As we are aware that a virtual conference cannot emulate the same type of coincidental meetings that might occur at a live conference, our social events calendar offers both highly informal get-togethers (cocktail hour, show your pet networking table) as well as moderated activities (quiz, treasure hunt) and formal spaces for networking (Café with the EC, Lunch with Professors).

Additionally, the PheedLoop platform provides its own built-in functionalities for easy exchange between delegates. You can connect and chat with any of the other delegates through the chat-function. Once you are connected, you can even join them in a one-on-one video call.

Each session as well as the conference lobby has its own chat-widget, where you can share your thoughts and questions even before the conference has started.

Lastly, check out our networking tables, open all throughout the conference. Drop in on any of the discussions and meet with up to 24 colleagues at any time.

**Jacobs Foundation Award Winners Coffee**
Monday, 23 August at 10:00 CEST
An informal coffee break for all of the Jacobs Foundation Presenter / Attendee Award Winners. This session is invite-only and will be chaired by EARLI President Debra Myhill.

**Lunch with Professors**
Monday 23 and Friday 27 August at 13:30 CEST
The Lunch with Professors offers junior and early career researchers the opportunity to meet and discuss with experts in their field of research. Consult the full schedule on the EARLI 2021 conference website and join the discussion!

**Café with the EC**
Monday 23 August at 16:45 CEST
Join the EARLI Executive Committee for an informal chat on EARLI’s future policies.

**Cinnamon Buns: a Bakery Lesson**
Tuesday, 24 August at 10:30 CEST
Join the team of the University of Gothenburg as they attempt to bake the traditional “kanelbulle” also known as the typically Swedish cinnamon bun. This is a pre-recorded session. Particularly adventurous home-bakers are invited to join the Cinnamon Buns “Show and Eat” on Wednesday 25 August at 16:45 CEST, where you can show and taste your own cinnamon buns.

**Walk with the President**
Tuesday, 24 August at 13:00 CEST
Time to stretch your legs! EARLI President Debra Myhill goes for a walk in the local countryside and invites you to do the same. Share your pictures of your walk on Twitter or Instagram, with #EARLI2021, and see them popping up in the PheedLoop lobby!

**Treasure Hunt**
Wednesday, 25 August at 13:30 CEST
Join SIG Coordinator Nina Bonderup Dohn on a treasure hunt! To not spoil the fun, precise instructions on what the treasure is and how to perform the hunt will only be disclosed at the event itself.

**Cocktail Hour**
Wednesday, 25 August at 18:45 CEST
Time to relax after a full day of sessions! Join us in a fun social event and meet your colleagues in an informal setting. Bring your favourite drink and some pictures of your hometown!

**“Is it all Greek to you?” (Quiz)**
Thursday, 26 August at 10:15 CEST
Through an interactive and amusing quiz, you will find out which words you already know/use that derive from Greek and learn what to expect from the next EARLI conference venue. At the end, you will even be able to pronounce the conference theme in Greek!

**EARLI Masterminds Quiz**
Thursday 26 August at 13:30 CEST
Are you the real EARLI Mastermind?
SOCIAL EVENTS

Prove that you know everything there is to know about EARLI, the association’s history and its most notable members. This quiz is hosted by Bart Rienties, a previous EARLI Keynote Speaker himself!

Greek Cooking Class
Thursday, 26 August at 16:45 CEST
Greek cuisine is one of the country’s most referred to characteristics, especially known for its healthy ingredients and variety of vegetables. Learn how to make a simple yet tasty Greek salad with food blogger Dimitris Koparanis! He will offer tips and tricks on how to prepare the popular Choriatiki Salad.

EARLI 2023 @ Thessaloniki
Friday, 27 August at 10:15 CEST
As the end of the EARLI 2021 conference draws near, we are taking a first look at the next conference venue, the wonderful city of Thessaloniki in Greece!

Guided Meditation
Daily at 15:30 CEST
In need of some relaxation and meditation between conference sessions? Experienced Yogi Diana Vilan provides a different set of stretching, relaxing and meditative exercises each conference day. These videos are pre-recorded and will be available throughout.

SIG VISIBILITY

The EARLI Special Interest Groups are the backbone of the EARLI scientific community. As many of our 26 SIGs had to cancel their 2020 conferences due to the COVID-19 pandemic, we are happy to increase visibility for the 2022 SIG conferences. Each SIG conference offers tremendous benefits for EARLI members to meet with colleagues who are working within similar fields of research. You can find out all about the 2022 SIG conference in three ways:

SIG Exhibition Hall
Similar to our Publishers and Sponsors Exhibition, visit the “SIG Hall” in the PheedLoop platform to find out more about the upcoming SIG 2022 conferences. A selection of SIGs will be hosting their own SIG booth, where you can find more information about the conference themes, locations and dates. Some SIGs are even hosting a live, drop-in session where you can chat with the SIG coordinators directly. The following SIGs can be found in the SIG Hall: SIG 1, SIG 13, SIG 16, SIG 20, SIG 21, SIG 22 and SIG 24.

SIG Networking Table
Want to find out more about a SIG, their activities and their topic? Join them for a live talk at the SIG networking table (found under “networking” in PheedLoop). The tables are opened throughout the conference; specific timings of when the SIG coordinators are present are posted in the description of the networking table. Find the following SIGs here: SIG 1, SIG 3, SIG 4, SIG 6, SIG 7, SIG 8, SIG 18, SIG 19, SIG 24, SIG 25 and SIG 27.

SIG Lobby Banner
In the PheedLoop lobby, you will find a carroussel of SIG conference flyers, visible before, during and after the EARLI 2021 conference.

SIG Meetings
Lastly, each of our SIGs will be hosting their own SIG meeting, in which both formal and informal matters are discussed with current and prospective members of the SIG. You can consult the full calendar of SIG meetings here. These meetings are open for anyone to join!
# SIG MEETINGS

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<td>Monday 30th of August 2021</td>
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<td></td>
<td>10:00 - 12:00 (CEST)</td>
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<tr>
<th>02</th>
<th>COMPREHENSION OF TEXT AND GRAPHICS</th>
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<tr>
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<td>Monday 30th of August 2021</td>
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<td>16:00 - 18:00 (CEST)</td>
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<tr>
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<tr>
<th>Position</th>
<th>Name</th>
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<tr>
<td>PRESIDENT</td>
<td>Prof. Debra Myhill</td>
<td>University of Exeter</td>
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<tr>
<td>PRESIDENT-ELECT</td>
<td>Prof. Eleni A. Kyza</td>
<td>Cyprus University of Technology</td>
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<tr>
<td>SECRETARY-TREASURER</td>
<td>Dr. Tijs Rotsaert</td>
<td>Ghent University</td>
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<td>ORDINARY MEMBERS</td>
<td>Prof. Crina Damsa</td>
<td>University of Oslo</td>
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<td>Prof. Sofia-Eleftheria Gonida</td>
<td>Aristotle University of Thessaloniki</td>
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<td>Prof. Hanke Korpershoek</td>
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<td>EX-OFFICIO MEMBERS</td>
<td>Prof. Roger Säljö</td>
<td>University of Gothenburg</td>
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<td>Prof. Lars-Erik Malmberg</td>
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<td>Lisa Vanhaeren</td>
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<td>Ruben Hendrickx</td>
<td>Community Manager</td>
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<td>Lore Verschakelen</td>
<td>Association Assistant</td>
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<td>Tonia Davison</td>
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<td>Stef Heremans</td>
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# EARLI 2021 ORGANISERS

## INTERNATIONAL AND LOCAL ORGANISING COMMITTEE

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<th>Position</th>
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<td><strong>EARLI 2021 President</strong></td>
<td>Prof. Roger Säljö</td>
<td>University of Gothenburg</td>
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<td><strong>EARLI 2021 Conference Management Team</strong></td>
<td>Jonas Emanuelsson</td>
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<td>Ilse Hakvoort</td>
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<td>Hoda Ashjari</td>
<td>University of Gothenburg</td>
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<td>Åke Ingerman</td>
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<td>Debra Myhill</td>
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University of Gothenburg |  
Hoda Ashjari  
University of Gothenburg |  
Andria Agesilaou  
Cyprus University of Technology |  
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Roskilde University |  
Valentina Reitenbach  
University of Wuppertal |  
Roosa Yli-Pietilä  
Tampere University |
**Policy Makers Panel: 1**  
**Time:** 09:15-10:00  
**Location:** Auditorium A

**POLICY MAKERS PANEL: UNIVERSITIES FOR THE FUTURE: THE CONTRIBUTION OF RESEARCH IN LEARNING AND INSTRUCTION**

**Chair**  
Debra Myhill, University of Exeter, United Kingdom

*Universities for the Future: The Contribution of Research in Learning and Instruction*

Sari Lindblom, University of Helsinki, Finland; Ian Dunn, Coventry University, United Kingdom; Pam Fredman, International Association of Universities, Sweden; Hilligje van t Land, International Association of Universities (IAU), France

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

**WORKSHOP: SHAPE YOUR OWN PROFESSIONAL FUTURE THROUGH GUIDED REFLECTION EXERCISES**

*Shape your own professional future through guided reflection exercises*

Christel Lutz, University Utrecht, Netherlands; Merel van Goch, Utrecht University, Netherlands; Vicki Baker, Albion College, United States

**Session A: 2**  
**Time:** 10:45-11:45  
**Location:** Session Room 3

**WORKSHOP: MAKING PEDAGOGICAL AND ASSESSMENT DECISIONS THAT PRIORITIZE STUDENTS’ INTRINSIC MOTIVATION**

*Making Pedagogical and Assessment Decisions that Prioritize Students’ Intrinsic Motivation*

Lia Daniels, University of Alberta, Canada

**ANNOTATIONS:**

THIS SESSION HAS BEEN MOVED TO F16 ON MONDAY 23RD OF AUGUST, 18:45 - 19:45 CEST.

**Session A: 3**  
**Time:** 10:45-11:45  
**Location:** Session Room 12

**WORKSHOP: HOW TO DEAL WITH NON-SIGNIFICANT P-VALUES AND MAKE THEM INFORMATIVE: EQUIVALENCE TESTING**

*How to deal with non-significant p-values and make them informative: equivalence testing*

Christian Thurn, ETH Zurich, Switzerland; Peter Edelsbrunner, ETH Zurich, Switzerland
**Session A: 4**  
**Time: 10:45-11:45**  
**Location: Session Room 8**

**ESPRESSO PAPER: HIGHER EDUCATION**

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

- **Programmatic assessment in seven different domains in higher professional education**  
  Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Tamara van Schilt Mol, Hogeschool van Arnhem en Nijmegen, Netherlands; Coes van der Vleuten, Maastricht University, Netherlands

- **Assessment design decisions in practice: Profile identification in approaches to assessment design**  
  Javier Fernández, Universidad Autonoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain; Daniel García Pérez, European University of Madrid, Spain; Lere Pinedo, Universidad de Deusto, Spain

- **Stress and burnout? University staff’s experiences of teaching**  
  Vivi Virtanen, Hame University of Applied Sciences, Finland; Telle Halikari, University of Helsinki, Finland; Mari Murtonen, University of Turku, Finland; Anna Parpala, University of Helsinki, Finland; Lisa Postareff, HAMK University of Applied Sciences, Finland

- **The positive impact of teaching on research in Life Sciences**  
  Jaanika Blomster, University of Helsinki, Finland; Vivi Virtanen, Hame University of Applied Sciences, Finland; Henna Askainen, University of Helsinki, Finland; Lauri Kontula, The University of Helsinki, Finland; Janna Pihlakainen, The University of Helsinki, Finland

- **Transformative experiences of novice academics in an online faculty mentoring program**  
  Helga Dorner, Eotvos Lorand University, Hungary; Gorana Misic, Bard College Berlin, Germany; Margaryta Rymarenko, Central European University Vienna, Austria

- **Reading comprehension of students with special educational needs in general education classrooms**  
  Beata Szenczi, Eotvos Lorand University, Hungary; Tibor Vigh, University of Szeged, Hungary; Agota Szekeres, Eotvos Lorand University, Hungary; Gabriella Zentai, University of Szeged, Hungary

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**Session A: 5**  
**Time: 10:45-11:45**  
**Location: Session Room 6**

**ESPRESSO PAPER: ACHIEVEMENT**

**Chair**  
Mònica Feixas, Zurich University of Teacher Education, Switzerland

- **Achievement Emotions Mediate the Link between Goal Failure and Goal Revision**  
  Maria Theobald, DIPF | Leibniz Institute for Research and Information in Education, Germany; Jasmin Brotwieser, DIPF | Leibniz Institute for Research and Information in Education, Germany; Kou Murayama, University of Reading, United Kingdom; Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany

- **SES and kindergarteners' math achievement: a multifaceted effect**  
  David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rebecca Bull, Macquarie School of Education, Macquarie University, Australia; Kerry Lee, The Education University of Hong Kong, Hong Kong

- **Investigating SEN and SES – separate or confounded?**  
  Jenny Lenkeit, University of Potsdam, Germany; Michel Knippe, Humboldt-University of Berlin, Germany; Antje Ehler, University of Potsdam / University of Johannesburg, Germany; Anne Hartmann, University of Potsdam, Germany; Nadine Spörer, University of Potsdam, Germany

- **The black box revelation of instructional practices: a multi-level analysis of the transition to HE**  
  Mikael De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l’Enseignement Supérieur (ARES), Belgium; Justine Jacquemart, Université catholique de Louvain (UCL), Belgium

- **Effects of Peer- and Self-Assessment on Strategy Variability and Performance of Low Performer**  
  Sandra Zulliger, Institute for Diversity in Education, Switzerland; Buholzer Alois, Institute for Diversity in Education, Switzerland; Stella Bollmann, University of Teacher Education of Lucerne, Switzerland; Merte Ruehrmann, University of Teacher Education of Lucerne, Switzerland
Session A: 6  |  Time: 10:45-11:45  |  Location: Session Room 16

**ESPRESSO PAPER: ATTITUDES AND BELIEFS**

**Chair**
Ylva Lindberg, Jönköping University, Sweden

Motivation Towards Creativity: The Importance of Need Satisfaction and Perceived Value of Creativity
Marek Urban, Jan Evangelista Purkyně University, Czech Republic; Ondra Pesout, J. E. Purkyně University, Czech Republic; Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Jiří Kombrza, J. E. Purkyně University, Czech Republic

Relevance—a Multidimensional Construct—and its Relation to Affective Constructs in Physics Courses
Almer Gungor, KU LEUVEN, Belgium; Mieke De Cock, KU LEUVEN, Belgium

Collegial casework in inclusive teacher education: A self-efficacy tool for pre-service teachers?
Scarlett Madeline Kobs, Humboldt Universität zu Berlin, Germany; Saskia Liebner, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Simon Wagner, University of Potsdam, Germany; Franziska Rogge, University of Potsdam, Germany; Karsten Krauskopf, University of Applied Sciences Potsdam, Germany; Michel Knigge, Humboldt University Berlin, Germany

Teacher students' personal worldviews and career motives – how are they related?
Laura Hirsto, University of Eastern Finland, Finland

Online and offline youth participation in Hong Kong’s anti-extradition bill social movement
Frank Reichert, The University of Hong Kong, Hong Kong; Anna Fiedler, The University of Hong Kong, Hong Kong

Fostering preservice teachers’ beliefs and motivation for engaging with research methods
Helene Zeeb, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany

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

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

**Chair**
Inge Molenaar, Radboud University Nijmegen, Netherlands

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

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

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

**Chair**
Fabian Zehner, DIPF | Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany

“T’m Tired of Black Boxes”: Emotional Experiences When Teaching Digitally in a Time of Pandemic
Anne Christiane Frenzel, University of Munich, Germany; Anton Marx, Ludwig Maximilians-Universität, Germany; Carolin Schwab, Ludwig-Maximilians-Universität (LMU), Germany

Temporal Dynamics Between Faculty Goals, Work-stress, and Performance in Teaching and Research
Martin Daumiller, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

Faculty Grit: How Long-term Passion and Perseverance Relates to Teaching and Research Success
Jordan Jaeger, University of North Dakota, United States; Chia-lin Chang, University of North Dakota, United States; Robert Stupnisky, University of North Dakota, United States
### Session A: 9  
**Time:** 10:45-11:45  
**Location:** Session Room 4

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

| Chair | The process of learning scientific reasoning: a latent transition analysis  
Erika Schlatter, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Ard Lazonder, Radboud University, Netherlands  
Scientific reasoning and physics understanding: A 5-year longitudinal study across elementary school  
Susanne Koerber, University of Education Freiburg, Germany; Christopher Osterhaus, University of Vechta, Germany; Kristin Nyberg, University of Education Freiburg, Germany  
Concurrent and longitudinal relations between mathematics anxiety and performance in Grade 1 and 2  
Riikka Mononen, University of Oslo, Norway; Markku Niemivirta, University of Eastern Finland, Finland; Johan Korhonen, Åbo Akademi University, Finland; Marcus Lindskog, Uppsala University, Sweden; Anna Tapola, University of Helsinki, Finland |
|---|---|

### Session A: 10  
**Time:** 10:45-11:45  
**Location:** Session Room 14

**SINGLE PAPER: ATTITUDES, BELIEFS AND TEACHER PROFESSIONAL DEVELOPMENT**

| Chair | The role of departmental leadership for PLC characteristics, depending on teacher beliefs.  
Jasja Valckx, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium; Geert Devos, Ghent University, Belgium  
Moritz Börnert-Ringleb, Leibniz University Hannover, Germany; Gino Casale, University of Wuppertal, Institute for Educational Research, Germany; Dr. Clemens Hillenbrand, University Oldenburg, Institute for Special Education and Rehabilitation, Germany  
At the crossroad of child rights participation and Q methodological studies  
Renske de Leeuw, Saxion University of Applied Sciences, Netherlands; Adrian Lundberg, Malmö University, Sweden; Renata Alani, University of Melbourne, Australia |
|---|---|

### Session A: 11  
**Time:** 10:45-11:45  
**Location:** Session Room 5

**SINGLE PAPER: CONCEPTUAL CHANGE**

| Chair | Reducing Developmental Psychology Misconceptions Via Refutational Teaching at University  
Stephanie Pieschl, Technical University of Darmstadt, Germany; Nicola Vivienne Glumann, Technische Universität Darmstadt, Germany  
University teachers’ professional vision, misconceptions, experience and pedagogical training  
Neea Heinonen, University of Helsinki, Finland; Nina Katajajuuri, University of Helsinki, Finland; Mari Murtonen, University of Turku, Finland; Ilona Stödervik, University of Helsinki, Finland  
Does information literacy moderate the effectiveness of conceptual change to reduce misconceptions?  
Nicola Vivienne Glumann, Technische Universität Darmstadt, Germany; Stephanie Pieschl, Technical University of Darmstadt, Germany |
|---|---|
### Session A: 12
**Time:** 10:45-11:45  
**Location:** Session Room 11

#### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, TEACHING AND INSTRUCTION
**Chair:** Joost Jansen in de Wal, University of Amsterdam, Netherlands

- **Brain activity correlates of domain-specific knowledge in diagram use for math word problem solving**
  Hiroaki Ayabe, National Institute for Physiological Sciences, Japan; Emmanuel Manalo, Kyoto University, Japan; Satoru Yokoyama, Saitama University, Japan; Michio Nomura, Kyoto University, Japan

- **Promoting the Acquisition of Core Practices: Contrasting Direct Instruction With Productive Failure**
  Imke Broid, Universität Freiburg, Germany; Arie Prinz, University of Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany

- **What Makes a Good Teacher? A Practice-Based Conceptualization of University Teacher Expertise**
  Esther van Dijk, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Manon Kluijtmans, UMC Utrecht, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands; Marieke van der Schaaf, University Medical Center Utrecht, Netherlands

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

#### SINGLE PAPER: SOCIAL INTERACTION
**Chair:** Mirjami Ikonen, University of Eastern Finland, Finland

- **Differences in the quality of interaction in nurseries and relation to child development**
  Mailina Petritsch, Karl-Franzens University of Graz, Austria; Tanja Sonnleithner, Karl-Franzens-University of Graz, Austria

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

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

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

#### INVITED SYMPOSIUM: SIG 26: HOW TO TEACH ARGUMENTATION, DIALOGUE AND REASONING FOR CITIZENSHIP?
**Chair:** Claire Polo, ECP Laboratory, France  
**Discussant:** Michael Baker, CNRS - Telecom Paris, France

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

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

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

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

#### SINGLE PAPER: EXPERIMENTAL STUDIES AND COGNITIVE SKILLS
**Chair:** Angel Torres-Toukoumidis, Universidad Politecnica Salesiana, Ecuador

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

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

- **The motor–executive function link in children with typical and poor visual-motor integration skills**
  Michelle N. Maurer, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland
Session B: 2
Time: 12:00-13:00
Location: Session Room 7

SINGLE PAPER: ONLINE LEARNING AND EDUCATIONAL TECHNOLOGY

Chair
Eleni Sinakou, University of Antwerp, Belgium

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

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

ICT usage in educational settings among youngsters in Estonia in the background of COVID-19 pandemic
Gertha Teidla-Kuntsön, Tallinn University, Estonia; Merike Sisask, Tallinn University, Estonia; Halliki Põlda, Tallinn University, Estonia

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

SINGLE PAPER: EDUCATIONAL TECHNOLOGY

Chair
Nicola Vivienne Glumann, Technische Universität Darmstadt, Germany

Learning with a Pedagogical Agent: does the Task Specificity of Self-efficacy Measure Matter?
Kate Xu, Open University of the Netherlands, Netherlands; Xiaoxia "Silvia" Huang, Western Kentucky University, United States; Sascha Schneider, Chemnitz University of Technology, Germany; Liia Lin, East China Normal University, China

Simulation Enhanced Interprofessional Health Education and Professional Identity Development
Hadil Elsayed, University of Gothenburg, Sweden; Markus Nivala, University of Gothenburg, Sweden; Liisa Carlzon, Simulatorcentrum i Väst, Sahlgrenska University Hospital, Sweden

Temporal analysis procedure for computer-supported collaborative learning: Literature review
Joni Länsä, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Pekka Koskinen, University of Jyväskylä, Finland; Jouni Viiri, University of Jyväskylä, Finland; Emilia Lampi, University of Jyväskylä, Finland

Session B: 4
Time: 12:00-13:00
Location: Session Room 18

SINGLE PAPER: WRITING AND LITERACY

Chair
Christian M. Stracke, Open University of the Netherlands, Netherlands

Student and Teacher Feedback Literacy and Engagement with Written Feedback in EFL writing
Abderrahim Mamad, University of Szeged, Doctoral School of Education, Hungary; Tibor Vígh, University of Szeged, Hungary

An Exploratory Study on how Myanmar EFL Students Benefit from Grammarly Feedback
Nang Kham Thi, University of Szeged, Doctoral School of Education, Hungary

Teachers' Assessment of Multiple Text Integration
Liron Primor, Hemdat Academic College, Israel; Sarit Barzilai, University of Haifa, Israel

Session B: 5
Time: 12:00-13:00
Location: Session Room 6

SINGLE PAPER: WRITING, LITERACY AND SELF-REGULATION

Chair
Megan Wiedbusch, University of Central Florida, United States

Assessing Self-Regulation in Grade 1 Writers: A Reliability and Validity Study
Ashley Biddell, Western University, Canada; Perry Klein, The University of Western Ontario, Canada; Jill Dombro, Western University, Canada; Christine Gliese, Western University, Canada; Kristen Sha, Western University, Canada; Serena Thompson, Western University, Canada

Scaffolding Students’ Revision Processes with Prior-Strategy Instruction and Formative Feedback
Salome Wagner, University of Tübingen, Germany; Andreas Lachner, University of Tübingen; Department of Educational Science, Germany; Matthias Niécoles, University of Freiburg, Germany; Christian Burkhart, University of Freiburg, Germany; Leonie Jacob, University of Tübingen, Germany

The impact of facial expressions of emotion on self-regulation during self-reflective writing
Michelle Taub, University of Central Florida, United States; Joel Schneier, University of Central Florida, United States
Session B: 6  |  Time: 12:00-13:00  |  Location: Session Room 8

**SINGLE PAPER: MOTIVATION AND TEACHER EFFECTIVENESS**

**Chair**
Becky Bergman, Chalmers University of Technology, Sweden

**A simulated teaching intervention boosts preservice teacher self-efficacy and classroom readiness**
Jade Rushby, The University of New South Wales, Australia; Robert Klassen, University of York, United Kingdom

**How does the learning environment affect the emotional exhaustion of beginning teachers?**
Stefanía Saacke, DZHW - German Centre for Higher Education Research and Science Studies, Germany; Claudia Menge, German Centre for Higher Education Research and Science Studies (DZHW), Germany; Andreas Ortnerburger, DZHW - German Centre for Research on Higher Education and Science Studies, Germany

**How do university lecturers express their emotions in class? Evidence from an event-sampling study.**
Katharina Thes, District of Lippe, Germany; Robert Kordts, University of St.Gallen, Norway

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Session B: 7  |  Time: 12:00-13:00  |  Location: Session Room 10

**SINGLE PAPER: INQUIRY LEARNING AND REASONING**

**Chair**
Petra Weckström, Örebro University, Sweden

**Exploring pre-service teacher moves for supporting student reasoning utilizing a scriptwriting task**
Victoria Shure, Humboldt-Universität zu Berlin, Germany

**Misinformation is Contagious: Learning to Detect Misinformation Through an Online Game**
Sarit Barzilai, University of Haifa, Israel; Danna Tal-Savir, University of Haifa, Israel; Fayez Abed, University of Haifa, Faculty of Education, Israel; Shir Mos-Hagari, University of Haifa, Israel; Na’ama Góldik, University of Haifa, Israel; Chad Davidow, University of Haifa, Israel; Ina Tafton, University of Haifa, Israel

**Exploring hypothetical question trajectories as support for guiding student questioning**
Harry Stokhof, HAN University of Applied Sciences, Netherlands; Helma Colbekkink-Marchand, Radboud University, Department of Teacher Education & HAN University of Applied Sciences, Netherlands

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Session B: 8  |  Time: 12:00-13:00  |  Location: Session Room 5

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

**Chair**
Mengsi Liu, The University of Tokyo, Japan

**Reducing MA of school children: A systematic review of intervention research**
Miriam Balt, Leibniz Universität Hannover, Germany; Moritz Börnert-Ringleb, Leibniz University Hannover, Germany; Lars Orbach, Federal University of Minas Gerais, Brazil

**Triangulating measurements of student participation during class**
Charlotte Baer, Sankt Gallen University of Teacher Organisation, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland; Doris Kunz Heim, PH FHNW, Switzerland

**Anxiety and reading self –concept of primary school children with learning disabilities**
FOTINI POLYCHRONI, NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, Greece; Alexander-Stamatios Antoniou, National & Kapodistrian University of Athens, Greece; Olga Kofa, National and Kapodistrian University of Athens, Greece

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Session B: 9  |  Time: 12:00-13:00  |  Location: Session Room 9

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

**Chair**
Theresa Wilkes, Saarland University, Germany

**Effects of sequencing and prompting on learning with contrastive video modelling examples**
Theresa Wilkes, Saarland University, Germany; Lisa Stark, Saarland University, Germany; Kati Trempler, University of Wuppertal, Germany; Robin Stark, Saarland University, Germany

**Novice and expert teachers’ noticing of classroom management events in two formats of instruction**
Rebekka Stahnke, TU Dortmund University, Germany; Sigrid Blömeke, Centre for Educational Measurement (CEMO), Norway

**Structure and predictors of instructional quality in private tutoring**
Katrin Gull, Leibniz Institute for Science and Mathematics Education, Germany; A. Katharina Peters, no institutional affiliation, Germany; Janina Roloff-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany
### Session B: 10 | Time: 12:00-13:00 | Location: Session Room 12

**WORKSHOP: BRINGING THIAGI TO THE CLASSROOM: REDUCING STEREOTYPE-THREAT BY PROMOTING REFLECTION IN CRT**

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<tr>
<th>Presenter</th>
<th>Institution</th>
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<tr>
<td>Tabea Berberena</td>
<td>University of Stuttgart, Germany</td>
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<td>Maria Wirzberger</td>
<td>University of Stuttgart, Germany</td>
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### Session B: 11 | Time: 12:00-13:00 | Location: Session Room 17

**WORKSHOP: ACTIVE LEARNER PARTICIPATION IN THE CO-CREATION OF EDUCATION: CHALLENGES, APPROACHES AND TIPS**

<table>
<thead>
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<th>Presenter</th>
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<tbody>
<tr>
<td>Karen Könings</td>
<td>Maastricht University, Netherlands</td>
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<tr>
<td>Shireen Suliman</td>
<td>Hamad Medical Corporation, Qatar</td>
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<td>Raghdah Al-Bualy</td>
<td>Oman Medical Specialty Board, Oman</td>
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<tr>
<td>Subha Ramani</td>
<td>Brigham and Women’s Hospital, Harvard Medical School, Harvard Macy Institute, United States</td>
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### Session B: 12 | Time: 12:00-13:00 | Location: Session Room 11

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

**Chairs**

Yvonne Kammerer, Knowledge Media Research Center, Germany; Cornelia Schoor, University of Bamberg, Germany

**Organisers**

Cornelia Schoor, University of Bamberg, Germany; Yvonne Kammerer, Knowledge Media Research Center, Germany

**Discussant**

Mônica Macedo-Rouet, University of Paris 8, France

**Discourses**

**Upper Secondary School Students as Critical Online Readers**

Carla Kilt, Tampere University, Finland; Ivar Braten, University of Oslo, Norway; Holge Stromso, University of Oslo, Norway; Michelle Schira Hageman, University of Ottawa, Canada; Anne Jyrkiläinen, Tampere University, Finland; Eija Räkkönen, University of Jyväskylä, Finland

**Students’ Reasoning About Domain Perspectives When Learning from Multiple Texts**

Alexandra List, The Pennsylvania State University, United States; Hongcui Du, The Pennsylvania State University, United States; Bailing Lyu, The Pennsylvania State University, United States

**Performing a high and low-stakes integration task: Effects on essay completion and perceived effort**

Raquel Cerdan, University of Valencia, Spain; Ignacio Mañez, University of Valencia, Spain; Tobias Richter, University of Würzburg, Germany

**Context and consistency effects when reading multiple documents**

Cornelia Schoor, University of Bamberg, Germany; Jean-François Rouet, University of Poitiers, France; MaryAnne Britt, Northern Illinois University, United States

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

**COLLABORATIVE WORKSPACE: PRESERVICE AND NOVICE LANGUAGE TEACHERS’ DEVELOPMENT OF SUMMATIVE ASSESSMENT LITERACY**

**Preservice and novice language teachers’ development of summative assessment literacy**

Ali Yıldırım, University of Gothenburg, Sweden; Birgitta Frijjedahl, Department of Language Education, Stockholm University, Sweden; Anne Dragemark Oscarson, University of Gothenburg, Sweden; Raili Hilden, University of Helsinki, Finland
## Session B: 14
**Time:** 12:00-13:00  
**Location:** Session Room 16

### ROUNDTABLE: CITIZENSHIP EDUCATION

**Chair**  
Frederik Damerau, Center for Journalism and Democracy at Leipzig University, Germany

**Intertwining Competence in Journalism and Democracy, An Interdisciplinary Approach to a New Model**  
Frederik Damerau, Center for Journalism and Democracy at Leipzig University, Germany; Christopher Pollak, Center for Journalism and Democracy at Leipzig University, Germany; Juliane Pfeiffer, Center for Journalism and Democracy at Leipzig University, Germany

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

**Young Adults’ Intuitive Conceptions of the Pension System in Germany: An Interview Study**  
Ronja Baginski, University of Mannheim, Germany; Julia Schultheis, University of Mannheim, Germany; Carmela Aprea, University of Mannheim, Germany

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## Session B: 15
**Time:** 12:00-13:00  
**Location:** Session Room 15

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

**Chair**  
Alla Hemi, Bar Ilan University, Israel

**Organiser**  
Dominik E. Froehlich, University of Vienna, Austria

**Discussant**  
Laura Monique Thomas, Ghent University, Belgium

**Exploring Online Social Networks of Educational Leaders in Times of COVID-19**  
Martin Rehm, Pädagogische Hochschule Weingarten, Germany

**Ethnographic MMSNA: linking actor agency, social structure, and the ‘thingness’ of networks**  
Marc Sarazin, University of Edinburgh, United Kingdom; Natasa Pandi, University of Edinburgh, United Kingdom

**Is social network analysis inherently mixed and multilevel?**  
Victoria Murphy, Open University, United Kingdom

**Case Comparison Tables in SNA**  
Dominik E. Froehlich, University of Vienna, Austria

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

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

**Chair**  
Marc Sarazin, University of Edinburgh, United Kingdom

**Teacher expectations and emotions concerning students with special needs or immigrant background**  
Ineke Pit-ten Cate, University of Luxembourg, Luxembourg; Mireille Krischler, Universität Trier, Germany

**Effects of negative stereotypes on performance and social relations of immigrant students**  
Sarah E. Martiny, UiT The Arctic University of Norway, Norway; Laura Froehlich, FernUniversität in Hagen, Germany

**Effects of stereotype threat in learning situations for students with migration background**  
Sabrina König, TU Dortmund University, Germany; Justine Stang, TU Dortmund University, Germany; Bettina Hannover, Freie Universität Berlin, Germany; Lysann Zander, Leibniz Universität Hannover, Germany; Oliver T. Wolf, Ruhr-Universität Bochum, Germany; Nele McElvany, TU Dortmund University, Germany

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

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

**Chair**  
Thomas Martens, Medical School Hamburg, Germany

**Innovative professional potential in the interaction between newly-qualified teachers and schools**  
Julia van Leeuwen, Radboud Teachers Academy, Radboud University Nijmegen, Netherlands; Harmen Schaap, Radboud University Nijmegen, Netherlands; Femke Geijsel, Radboud University Nijmegen, Netherlands; Paulien Meijer, Radboud University Nijmegen, Netherlands

**Towards creating an expansive learning environment for pre-service teachers**  
Adeline Yueh Sze Goh, Universiti Brunei Darussalam, Brunei Darussalam; Desmond Chia Chun Tan, Universiti Brunei Darussalam, Brunei Darussalam

**Exploring deep-level characteristics of student teacher collaboration in practicum**  
Marco Galle, Zurich University of Teacher Education, Switzerland; Annelies Kreis, Zurich University of Teacher Education, Switzerland
# Session C:
## Time: 14:30-15:30
## Location: Session Room 3

### SINGLE PAPER: ACHIEVEMENT

**Chair**
Thorsten Scheiner, Australian Catholic University, Australia

**Deeper learning in lectures: A comparison of generating questions vs. paper writing**
Natalie Enders, Universität Hildesheim, Germany; Pamela Baess, University of Hildesheim, Germany

**Instructional quality: validity, comparability and the relationship to student outcomes.**
Bas Senden, ILS, University of Oslo, Norway; Trude Nilsen, University of Oslo, Norway; Nani Teig, University of Oslo, Norway

**Acquiring the Art of Conducting: Deliberate Practice as Part of Professional Learning**
Simon Schmidt, Universität Regensburg, Germany; Manuel Laengler, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany

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

### SINGLE PAPER: COMMUNITIES OF PRACTICE

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

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

**Academic development courses in HE – a retrospective approach for future training practices**
Sylvi Vigmo, University of Gothenburg, Sweden; Margareta Jermås, University of Gothenburg, Sweden

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

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

### SINGLE PAPER: SOCIAL INTERACTION AND TEACHING

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

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

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

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

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

### SINGLE PAPER: COMMUNITIES OF PRACTICE

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

**Trajectories of teacher agency in the professional community and association to experienced burnout**
Jenni Sullanmaa, Tampere University, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Tiina Soini-Ikonen, Tampere University, Finland

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

**Sustainable school development in a digitalized world: Results from interviews in networked schools**
Anna Heinemann, University of Duisburg-Essen, Germany; Marco Hasselkuß, University of Duisburg-Essen, Germany; Manuela Endberg, University of Duisburg-Essen, Germany
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<td><strong>SINGLE PAPER: COLLABORATIVE LEARNING AND VIDEO ANALYSIS</strong></td>
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<td><strong>Chair</strong></td>
<td>Marieke Thurlings, Eindhoven University of Technology, Netherlands</td>
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<td><strong>Linking students’ reports on motivation to the level of interaction during collaborative learning</strong></td>
<td>Tatiana Shubina, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Kristiina Mänty, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland</td>
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<td><strong>Strategic activities in co- and socially shared regulation of emotions</strong></td>
<td>Kristiina Mänty, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tiina Törmänen, University of Oulu, Finland; Sanna Jarvelä, University of Oulu, Finland</td>
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<td><strong>8th graders’ ideas of contributing to sustainability – a study of students’ talk and microblogging</strong></td>
<td>Kari Anne Rednes, University of Oslo, Norway</td>
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<tr>
<td><strong>SINGLE PAPER: INSTRUCTIONAL DESIGN AND COMPREHENSION OF TEXT AND GRAPHICS</strong></td>
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<td><strong>Chair</strong></td>
<td>Antonia Zachariou, University of Roehampton, United Kingdom</td>
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<td><strong>Fostering upper secondary school students’ sourcing during online inquiry</strong></td>
<td>Elna Hämäläinen, University of Jyväskylä, Finland; Carita Kilii, Tampere University, Finland; Eija Räikkönen, University of Jyväskylä, Finland; Minna Lakkala, University of Helsinki, Finland; Lisa Ikonen, University of Helsinki, Finland; Auli Toor, University of Helsinki, Finland; Mika Marttunen, University of Jyväskylä, Finland</td>
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<td><strong>Measuring and monitoring multiple document comprehension with a Dutch version of the MDC-instrument</strong></td>
<td>Hub Tabbers, Erasmus University Rotterdam, Netherlands; Carolin Hahnel, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Cornelia Schoor, University of Bamberg, Germany</td>
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<td><strong>SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, MOTIVATION AND EMOTION</strong></td>
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<td><strong>Chair</strong></td>
<td>Marta Koć-Januchta, Linköping University, Sweden</td>
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<td><strong>Self-effective scientific reasoning? Differences between primary and secondary school students</strong></td>
<td>Kristin Nyberg, University of Education Freiburg, Germany; Susanne Koerber, University of Education Freiburg, Germany; Christopher Cesterhaus, University of Vechta, Germany</td>
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<td><strong>Gender and temperament differences in task avoidance during the transition to lower secondary school</strong></td>
<td>Riikka Hirvonen, University of Eastern Finland, Finland; Jaana Viltaranta, University of Eastern Finland, Finland; Noona Kiuru, University of Jyväskylä, Finland</td>
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<td><strong>Parental involvement in children’s homework: The role of parent motivational beliefs and affect</strong></td>
<td>Konstantina Falanga, Aristotle University of Thessaloniki, Greece; Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece</td>
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<th>Session C: 10</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 17</th>
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<tr>
<td><strong>SINGLE PAPER: DEMOCRATIC EDUCATION AND EDUCATIONAL POLICY</strong></td>
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<td><strong>Chair</strong></td>
<td>Carina Lüke, University of Würzburg, Germany</td>
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<tr>
<td><strong>How Do Schools Affect Inequalities in Political Participation: Compensation of Social Disadvantage?</strong></td>
<td>Daniel Deimel, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany</td>
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<tr>
<td><strong>Dialogue and critical thinking as prevention against antidemocratic attitudes</strong></td>
<td>Kristin Endresen-Maharaj, University of Agder, Norway; Ase Haraldstad, University of Agder, Norway; Aaslaug Kristiansen, University of Agder, Norway</td>
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<tr>
<td><strong>Building an Inclusive Education System: Implications from a Therapy Support Project in Ireland</strong></td>
<td>Emer Ring, Mary Immaculate College, Limerick, Ireland; Lisha O’Sullivan, Mary Immaculate College, Ireland</td>
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Session C: 11  |  Time: 14:30-15:30  |  Location: Session Room 18

**SINGLE PAPER: WRITING AND LITERACY**

**Chair**
Christine Rubie-Davies, University of Auckland, New Zealand

**The effects of summarising texts on text comprehension and subjective ratings of understanding.**
Amy Peters, University of Southampton, United Kingdom

**Do UK university students with and without dyslexia have different beliefs about writing?**
Sophie Hall, University of Southampton, United Kingdom

**Academic agency and responsibility through writing processes**
Ylva Lindberg, Jönköping University, Sweden; Sangeeta Bagga-Gupta, Jönköping University, Sweden

Session C: 12  |  Time: 14:30-15:30  |  Location: Session Room 5

**INVITED SYMPOSIUM: E-CER: ANALYTICAL APPROACHES ON COLLABORATIVE LEARNING WITH DIGITAL KNOWLEDGE OBJECTS**

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

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

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

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

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

**Co-creation of knowledge objects in undergraduate education – a qualitative analytical approach**
Crina Damsa, University of Oslo, Norway; Rachelle Esterhazy, University of Oslo, Norway; Monika Nerland, University of Oslo, Norway

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

Session C: 13  |  Time: 14:30-15:30  |  Location: Session Room 1

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

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

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

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

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

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

**Do Cultural Background and SES Affect Preschoolers’ Scientific Curiosity?**
Ornit Spektor-Levy, Bar-Ilan University, Israel; Aisha Alzaro, Bar Ilan University, Israel; Yael Kesner Baruch, Beit Berl College, Kfar Saba, & Levinisky College of Education, Tel Aviv, Israel, Israel; Taly Shechter, Bar-Ilan University, Israel

**Creativity in children as a situated skill**
Paul Leseman, Utrecht University, Netherlands; Marloes van Dijk, Utrecht University, Netherlands; Honghong Bai, Utrecht University, Netherlands; Elma Blom, Utrecht University, Netherlands; Hanna Mulkur, Utrecht University, Netherlands; Evelyn Kroesbergen, Radboud University, Netherlands

Session C: 14  |  Time: 14:30-15:30  |  Location: Session Room 6

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

**The Development of an Evaluation Framework in the Context of the “Schools as Living Labs” Project**
Yoani Pavliou, University of Cyprus, Cyprus; Marios Papasavvidou, University of Cyprus, Cyprus; Pavlos Koutlouris, Ellinogermaniki Agogi, Greece; Zacharias Zacharia, University of Cyprus, Cyprus; Sofoklis Sotiriou, Ellinogermaniki Agogi, Greece
### Session D: 1
**Time:** 15:45-16:45  
**Location:** Session Room 6

**SINGLE PAPER: MIXED-METHODS RESEARCH**

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

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<tr>
<th>Title</th>
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<tr>
<td>Social Media contributes to a Sense of Community?! – A Case Study on Twitter</td>
<td>Martin Rehm, Pädagogische Hochschule Weingarten, Germany; Daly Alan, University of California, San Diego, United States; Peter Bjorklund Jr., University of California, San Diego, United States</td>
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<td>The student-curriculum interplay: Diverse content in instructional materials and student performance</td>
<td>Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Jana Vietze, Erasmus University Rotterdam, Netherlands; Joran Jongerling, Erasmus University Rotterdam, Netherlands; Rinotha Senathirajah, Erasmus University Rotterdam, Netherlands; Regina Sturmano, Erasmus University Rotterdam, Netherlands</td>
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<td>Development of Meta-Discourse through Portfolio Reflection in a Knowledge Building Environment</td>
<td>Yuyao Tong, The University of Hong Kong, China; Carol Chan, The University of Hong Kong, Hong Kong</td>
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### Session D: 2
**Time:** 15:45-16:45  
**Location:** Session Room 12

**SINGLE PAPER: SPECIAL PRIMARY EDUCATION**

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

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<tr>
<th>Title</th>
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<tr>
<td>Individual prerequisites for children’s attitudes towards peers with social-emotional disabilities</td>
<td>Marwin Felix Loeper, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany</td>
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<td>Determinants for teachers’ intentions to manage heterogeneity in (non-)inclusive primary education</td>
<td>Gamze Görel, Paderborn University, Germany; Marwin Felix Loeper, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany</td>
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<tr>
<td>Students’ Online Reading Performance among Different Learners and their Reading Habits</td>
<td>Laura Kannainen, University of Jyväskylä, Finland; Cartia Kii, Tampere University, Finland; Jukka Uhainen, University of Jyväskylä, Finland; Askol Toivanen, University of Jyväskylä, Finland; Mikko Ano, University of Jyväskylä, Finland; Paavo H.T. Leppänen, University of Jyväskylä, Finland</td>
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### Session D: 3
**Time:** 15:45-16:45  
**Location:** Session Room 5

**SINGLE PAPER: READING COMPREHENSION AND LITERACY**

**Chair**  
Karen Könings, Maastricht University, Netherlands

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<tr>
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<tbody>
<tr>
<td>A construct modeling approach for a more valid and reliable embedded reading assessment</td>
<td>Brent Duckor, San Jose State University, United States; Ágnes Hódi, MTA-SZTE, Hungary</td>
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<tr>
<td>READING STRATEGIES AND READING ACHIEVEMENTS IN THE MIDDLE SCHOOL: KAZAKHSTANI YOUNG LEARNERS</td>
<td>Aigul Akhmetova, University of Szeged, Doctoral School of Education, Hungary; Gaysha Imambayeva, Innovative Eurasian University, Kazakhstan; Benő Csapó, University of Szeged, Hungary</td>
</tr>
<tr>
<td>A first step of a new acquired reading skills assessment of adult Hungarian aphasic patients</td>
<td>Orsolya Kis, University of Szeged Doctoral School of Education, Hungary; Janos Steklacs, University of Pécs, SzIE, Kaposvár, Hungary</td>
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### Session D: 4
**Time:** 15:45-16:45  
**Location:** Session Room 10

**SINGLE PAPER: COGNITIVE DEVELOPMENT**

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

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<tr>
<td>Media use of toddlers and implications for sleep: a differentiated story</td>
<td>Sigrid Hacoal-Wimmer, University of Graz, Austria; Marina Egmaier, Institute of Psychology, University of Graz, Austria; Helmut Lackner, Otto Loewi Research Center, Medical University Graz, Austria; Lars Eichen, University of Graz, Austria; Ilona Papousek, Institute of Psychology, University of Graz, Austria; Karoline Rettenbacher, Institute of Psychology, University of Graz, Austria; Christian Rominger, Institute of Psychology, University of Graz, Austria; Catherine Walter-Laager, Department of Educational Sciences, University of Graz, Austria; Manuela Paechter, University of Graz, Austria</td>
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<tr>
<td>Inclusive education of students with general learning difficulties: A meta-analysis</td>
<td>Sonja Krämer, Christian-Albrechts-University of Kiel, Germany; Jens Möller, Christian-Albrechts-University of Kiel, Germany; Frederike Zimmermann, Kiel University, Germany</td>
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<td>Relations Between Socioeconomic Status, Stress, Parenting, and Working Memory</td>
<td>Kerry Lee, The Education University of Hong Kong, Hong Kong</td>
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### Session D: 5  |  Time: 15:45-16:45  |  Location: Session Room 13

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

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

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

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

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

### Session D: 6  |  Time: 15:45-16:45  |  Location: Session Room 2

**SINGLE PAPER: ARTIFICIAL INTELLIGENCE**

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

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

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

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

### Session D: 7  |  Time: 15:45-16:45  |  Location: Session Room 4

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

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

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

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

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

### Session D: 8  |  Time: 15:45-16:45  |  Location: Session Room 11

**SINGLE PAPER: PHENOMENOGRAPHY AND MATHEMATICS**

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

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

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

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

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

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

**Validating the Community of Inquiry Framework in the COVID-19 Semester: A Mixed-Method Study**  
Mutlu Sen Akbulut, Bogazici University, Turkey; Duygu Umutfu, Bogazici University, Turkey; Diler Onen, Bogazici University, Turkey; Serkan Arkan, Bogazici University, Turkey

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

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

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

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

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

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

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

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

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

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

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

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

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

**Chairs**  
Tobias Feldhoff, Johannes Gutenberg University of Mainz, Germany; Jerich Faddar, University of Antwerp, Belgium

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

**Steering relations and school improvement. Covid-19-related changes in Dutch primary schools.**  
Amoudi Gude Groot Boeverberg, Radboud University Nijmegen, Netherlands; Marlies Honingh, Radboud University Nijmegen, Netherlands; Femke Geijssel, Radboud University Nijmegen, Netherlands; Floor Basten, Open University of the Netherlands, Netherlands

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

**Students motivation and well-being during and after the lockdown: Lessons for the future**  
Sébastien Delissé, Université catholique de Louvain (UCL), Belgium; Nolérie Baudoin, Université catholique de Louvain (UCL), Belgium; Dominique Latfontaine, Université de Liège, Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium; Ariane Baye, University of Liège, Belgium; Françoise Crepin, Université de Liège, Belgium
### Session D: 13  
**Time: 15:45-16:45**  
**Location: Session Room 18**

**COLLABORATIVE WORKSPACE: UNIVERSITY TEACHER AND STUDENT WELL-BEING: INTERRELATIONS, IMPACT OF COVID-19, AND FUTURE DIRECTIONS**

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

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

### Session D: 14  
**Time: 15:45-16:45**  
**Location: Session Room 3**

**ROUNDTABLE: EXPERIMENTAL STUDIES**

**Chair**  
Fitria Arifiyanti, University of Szeged, Doctoral School of Education, Hungary

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

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

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

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

### Session D: 15  
**Time: 15:45-16:45**  
**Location: Session Room 15**

**INVITED SYMPOSIUM: EFG: EFFORT MONITORING AND REGULATION (EMR): FIRST FINDINGS FROM A NOVEL FRAMEWORK**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### Session E: 2
**Time:** 17:30-18:30  
**Location:** Session Room 2

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

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

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

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

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

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

**Teachers’ work engagement and burnout profiles**  
Anni Holmström, University of Turku, Finland; Marijaana Veermans, University of Turku, Finland; Heta Tuominen, University of Turku, Finland

**Supporting well-being of academic staff through a University Teaching Qualification programme**  
Inken Gast, Maastricht University, Netherlands; Madelief Neelen, University of Maastricht, Netherlands

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

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

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

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

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

**CANCELLED**

**The effects of students’ prior attainment on their experiences of mathematics teaching**  
Jenni Ingram, University of Oxford, United Kingdom; Ariel Lindorf, University of Oxford, United Kingdom; Tamsin McDermott, University of Oxford, United Kingdom; Pamela Sammons, University of Oxford, United Kingdom; Peter Mitchell, University of Oxford, United Kingdom

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

**Whole class teaching practices and their impact on mathematics learning in England and Shanghai**  
Jinjie Xu, International Teacher Education Center, UNESCO, Shanghai (China), China; Yan Zhu, College of Teacher Education, East China Normal University, Shanghai (China), China
### Session E: 4 | Time: 17:30-18:30 | Location: Session Room 12

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

**Chair**
Rupert Wegerif, University of Cambridge, United Kingdom

**Discussant**
Kristina Kumpulainen, University of Helsinki, Finland

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

**Simulated Virtual Internships: expanding classroom learning dialogues with voices from enterprise**
Alison Twiner, University of Cambridge, United Kingdom; Louis Major, University of Cambridge, United Kingdom; Ryan Irvan, University of Cambridge, United Kingdom; Rupert Wegerif, University of Cambridge, United Kingdom

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

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

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

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

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

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

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

#### ROUNDTABLE: LEARNING AND PROFESSIONAL DEVELOPMENT

**Chair**
Christian Harteis, University of Paderborn, Germany

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

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

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

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

#### ROUNDTABLE: ASSESSMENT METHODS AND TOOLS

**Chair**
Prajakt Pande, Roskilde University, Denmark

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

**The validation of attitude toward science questionnaire among Indonesian undergraduate students**
Azizul Ghofar Candra Wicaksono, University of Szeged, Doctoral School of Education, Hungary; Erzsébet Korom, University of Szeged, Hungary

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

### Chair
Anneke Timmermans, University of Groningen, Netherlands

**Making an effort versus experiencing load – the case of active and passive aspects of cognitive load**
Tina Seufert, Ulm University, Germany; Melina Klepsch, Ulm University, Germany

**The development of number word learning in bilingual children: Evidence from Singapore**
Pierina Cheung, National Institute of Education/Nanyang Technological University, Singapore; Singapore; Daphne Ang, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Numeral ordering skills and the ordinality of small numbers**
David Munez, National Institute of Education / Nanyang Technological University, Singapore; Jose txu Orrantia, University of Salamanca, Spain; Laura Matilla, Facultad de Educacion, Universidad de Salamanca, Spain; Rosario Sánchez, University of Salamanca, Spain

**Perspective differences in the measurement of teaching quality – a matter of item reference?**
Christine Johannes, University of Erfurt, Germany; Tina-Myrica Daunicht, Friedrich-Alexander University of Erlangen-Nuremberg, Germany

**Disentangling Effect Sizes and Inferential Statistics in Science Communication**
Kirstin Schmidt, University of Education Karlsruhe, Germany; Samuel Merk, University of Tübingen, Germany

**Manipulatives and symbolic tools in mathematics education for pupils with learning disabilities**
Steffen Siegemund-Johannsen, Institute of Special Education - Europa-Universität Flensburg, Germany

## ESPRESSO PAPER: EDUCATIONAL THEORY

### Chair
IOULIA NTOUSI, Democritus University of Thrace, Greece

**Why situativity and tangible things matter to learning computational thinking in school**
Nina Bonderup Dohn, University of Southern Denmark, Denmark; Stig Børn Hansen, University of Southern Denmark, Denmark

**Designing for motivation in learning Computational Thinking within science education**
Niels Dohn, Aarhus University, Denmark; Margrethe H. Møller, University of Southern Denmark, Denmark; Nina Bonderup Dohn, University of Southern Denmark, Denmark

**Supporting Computational Thinking with Design Activities**
Daniel Spikol, University of Copenhagen, Denmark; Melissa Kaivo, Arduino Verkstad AB, Sweden; David Cuartielles, Arduino Verkstad AB, Sweden

**Productive tensions: Computational things in preschool and school practices**
Ane Bjerre Odgaard, University of Southern Denmark, Denmark; Roland Hazemann, University Southern Denmark, Denmark

**Options for handling complex problems of global change from the perspective of children**
Sarah Gaubitz, Uni Siegen, Germany

**The active and dynamic materiality in maker-centered learning**
Varpu Mehto, University of Helsinki, Finland; Noora Bosch, University of Helsinki, Finland; Kajju Kangas, University of Helsinki, Finland; Pirita Seitamaa-Hakkarainen, University of Helsinki, Finland
### Session E: 10
#### Time: 17:30-18:30
#### Location: Session Room 11

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

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<th>Title</th>
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<tr>
<td>Hard to resist – difficult to predict? Person-related predictors of misconceptions in education</td>
<td>Jana Asberger, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Johannes Bauer, University of Erfurt, Germany</td>
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<td>Promoting reflection about Teaching and Learning with Metaphors – Insights of a DBR-Project</td>
<td>Franco Rau, University of Vechta, Germany</td>
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<tr>
<td>Effects of different scaffolds in a video-based learning environment for pre-service teachers</td>
<td>Marie Irmer, LMU Munich, Faculty of Biology, Biology Education, Germany; Dagmar Frick, LMU Munich, Faculty of Biology, Biology Education, Germany; Birgit J. Neubau, LMU Munich, Germany; Christian Förstch, LMU Munich, Germany; Maria Kramer, Ludwig-Maximilians-Universität Munich, Germany</td>
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<tr>
<td>Comparison for fostering student teachers’ knowledge about scaffolding</td>
<td>Sabrina Stiel-Dämmer, University of Koblenz-Landau, Germany; Anke Maria Weber, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz-Landau, Germany</td>
</tr>
<tr>
<td>Teachers as informed pragmatists: supporting teacher students’ didactic reasoning by journal writing</td>
<td>Christina Schuba, Albert-Ludwigs-Universität Freiburg, Germany; Matthias Nückles, University of Freiburg, Germany</td>
</tr>
<tr>
<td>How expert feedback influences the development of pre-service teachers’ professional vision</td>
<td>Christopher Neil Prilop, Leuphana University Lueneburg / University of Hamburg, Germany; Kira Elena Weber, Leuphana University Lueneburg / University of Hamburg, Germany; Kirén Kleinknecht, Leuphana University Lueneburg, Germany; Mario Kramer, Ludwig-Maximilians-Universität Munich, Germany</td>
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### Session E: 11
#### Time: 17:30-18:30
#### Location: Session Room 5

**ESPRESSO PAPER: COLLABORATIVE LEARNING**

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<tr>
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<tr>
<td>Anonymity as an instructional scaffold in peer assessment in higher education contexts</td>
<td>Tijs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium</td>
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<tr>
<td>Sequential patterns of micro-level interactions in teacher professional learning communities</td>
<td>Marieke Thurlings, Eindhoven University of Technology, Netherlands; Marloes Hendriks, Eindhoven University of Technology, Netherlands; Perry den Brok, Wageningen University &amp; Research, Netherlands</td>
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<tr>
<td>Disparity in teachers’ collaboration and schools’ capacity for change</td>
<td>Lisa Maria Schaefer, University of Zurich, Switzerland; Thorsten Bohl, University of Tübingen, Germany; Albrecht Wacker, University of Education Ludwigsburg, Germany</td>
</tr>
<tr>
<td>Effect of metacognitive interaction on individual and group performance in collaborative learning</td>
<td>Eetu Haataja, University of Oulu, Finland; Mehterem Dindar, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland</td>
</tr>
<tr>
<td>The relationship of physiological synchrony with success in collaborative exam</td>
<td>Eetu Haataja, University of Oulu, Finland; Mehterem Dindar, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland</td>
</tr>
<tr>
<td>Academic Virtual Mobility Design: Synchronous interaction and collaboration in international teams</td>
<td>Katerina Holubinka, FernUniversität Hagen, Germany; Christian M. Stracke, Open University of the Netherlands, Netherlands; Panu Forsman, University of Jyväskylä, Finland; Francis Brouns, Open Universiteit, Netherlands</td>
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### Session E: 12
#### Time: 17:30-18:30
#### Location: Session Room 15

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

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<tr>
<th>Title</th>
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<tr>
<td>“Observing Things”: Using ICANs to promote science belonging, interest, and learning</td>
<td>K. Ann Renninger, Swarthmore College, United States; Lux Barton, Swarthmore College, United States; Kadiata Diao, Swarthmore College, United States; Krista Smith-Hanke, Swarthmore College, United States; Feven Yared, Swarthmore College, United States</td>
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<tr>
<td>Metacognition under the microscope. Triangulating assessment of metacognition during problem-solving</td>
<td>Charlotte Dignath, DIPF Leibniz Institute for Education Research Frankfurt, Germany</td>
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<tr>
<td>How school and classroom context explain children’s momentary behavioural engagement</td>
<td>Jennifer Symonds, University College Dublin, Ireland; Aisling Davies, University College Dublin, Ireland; Seaneen Sloane, University College Dublin, Ireland; Dymna Devine, University College Dublin, Ireland; Gabriella Martinez Sainz, University College Dublin, Ireland; Tamsyn Blue, University College Dublin, Ireland</td>
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### Session F: 1
**Time:** 18:45-19:45  
**Location:** Session Room 4

**SINGLE PAPER: MIXED-METHOD RESEARCH**

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

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<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Teaching Controversial Topics in Elementary and Primary Schools</td>
<td>Monika Gigerl, Pädagogische Hochschule Steiermark, Institut für Elementar- und Primarpädagogik, 8010 Graz, Österreich; Britta Breser, KIRCHLICHE PÄDAGOGISCHE HOCHSCHULE der Diözese Graz-Seckau, Austria</td>
</tr>
<tr>
<td>Pupils’ individual differences in science and technology education: learning outcomes and process</td>
<td>Tessa Slim, Hogeschool IPABO Amsterdam/Alkmaar / Vrije Universiteit Amsterdam, Netherlands; Johanna van Schaik, Radboud University, Netherlands; Anna Hotze, Hogeschool IPABO Amsterdam/Alkmaar, Netherlands; Maartje Rajmakers, University of Amsterdam, Netherlands</td>
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<tr>
<td>Professional identity development of student teachers</td>
<td>Christa Dekker, Katholieke Pabo Zwolle, Netherlands; Marjke Pillen, Katholieke Pabo Zwolle, Netherlands; Ietje Pauw, Hogeschool KPZ, Netherlands</td>
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### Session F: 2
**Time:** 18:45-19:45  
**Location:** Session Room 18

**SINGLE PAPER: MATHEMATICS AND PROBLEM SOLVING**

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

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<th>Title</th>
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<tbody>
<tr>
<td>Do students show higher interest and performance when solving self-generated math problems?</td>
<td>Janina Krawitz, University of Münster, Germany; Luisa-Marie Hartmann, University of Münster, Germany; Stanislaw Schukajlow, University of Münster, Germany</td>
</tr>
<tr>
<td>Effect of Including a Context Situation in a Math Problem Statement</td>
<td>Irene Ferrando, Dpto. de Didáctica de las Matemáticas - Universidad de Valencia, Spain; Carlos Segura, Universidad de Valencia, Spain</td>
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### Session F: 3
**Time:** 18:45-19:45  
**Location:** Session Room 16

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

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

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<tr>
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<tr>
<td>The active participation of young adults with intellectual disability in goal-setting discussions</td>
<td>Ana Luisa Rubio Jimenez, University of Cambridge, United Kingdom</td>
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<tr>
<td>Inclusive entanglement of friendship networks and academic peer assistance in primary school</td>
<td>Katä Sormunen, University of Helsinki, Finland; Tuire Palonén, University of Turku, Finland; Evelina Niskala, University of Helsinki, Finland; Hanna Reinius, University of Helsinki, Finland; Netta Töpppä, University of Helsinki, Finland</td>
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<tr>
<td>Primary school students’ contact experiences and their attitudes towards peers with disabilities</td>
<td>Marwin Felix Loepf, Paderborn University, Germany; Susanne Schwab, University of Vienna, Austria; Frank Heßlich, Paderborn University, Germany</td>
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### Session F: 4
**Time:** 18:45-19:45  
**Location:** Session Room 1

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

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

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<th>Title</th>
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<tr>
<td>Patterns in professional relationships between trainee teachers and their mentors: An LPA approach</td>
<td>Michael Goller, Friedrich Schiller University Jena, Germany; Tobias Kaerner, University of Konstanz, Germany; Elisabeth Maul, University of Konstanz, Germany; Caroline Bonnes, University of Konstanz, Germany</td>
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<tr>
<td>Artificial Intelligence in Teacher Education: A Systematic Review of Research</td>
<td>ISMAIL CELIK, University of Oulu, Finland, Finland; Muhterem Dindar, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland</td>
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<tr>
<td>Teachers’ Professional Digital Competence, Transformative Digital Agency and TeachMeets</td>
<td>Stine Brynildsen, Østfold University College, Norway; Ilkka Nagel, Østfold University College / University of Oslo, Norway; Irina Engeness, Østfold University College, Norway</td>
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<td><strong>SINGLE PAPER: ATTITUDES AND BELIEFS IN TEACHING AND INSTRUCTION</strong></td>
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<td><strong>Chair</strong></td>
<td>Mikaël De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l'Enseignement Supérieur (ARES), Belgium</td>
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<td>Implementing and evaluating growth mindset pedagogy with Finnish elementary school teachers</td>
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<td>Every student can succeed! How a brief intervention reduces teachers’ domain-specific fixed mindsets</td>
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<td>Teachers’ Growth Mindsets and Their Differential Treatment of Low- and High-Ability Students</td>
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<td><strong>SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH IN PRE-SERVICE TEACHER EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Franziska Zellweger, Zurich University of Teacher Education, Switzerland</td>
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<td>Preservice teachers’ judgements - Do normative criteria and students’ background matter?</td>
<td>Christin Laschke, Humboldt-Universität zu Berlin, Germany; Bettina Roesken-Winter, Humboldt-Universität zu Berlin, Germany; Sven Schuele, Humboldt-Universität zu Berlin, Germany</td>
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<td>The influence of knowledge and available time on teachers’ diagnostic judgments on tasks</td>
<td>Andreas Rieu, PH Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany; Katharina Lobit, University of Education Freiburg, Germany</td>
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<td>A start-up environment as a field-based practicum for technology teacher education</td>
<td>Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Clemens Wabel, University of Teacher Education St.Gallen, Switzerland</td>
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<th>Session F: 7</th>
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<td><strong>SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH AND EDUCATIONAL TECHNOLOGY</strong></td>
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<td><strong>Chair</strong></td>
<td>Maria Zimmermann, Humboldt University of Berlin, Germany</td>
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<td>The News Evaluator: An evidence based tool to support digital civic literacy in a world of fake news</td>
<td>Thomas Nygren, Department of Education, Sweden; Mona Guath, Department of Education, Uppsala University, Sweden; Carl-Anton Werner Axelsson, Division of Visual Information and Interaction, Department of Information Technology, Uppsala University, Sweden</td>
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<td>Video-Based Instruction in Flipped and Non-Flipped Classrooms: When Is It Effective and for Whom?</td>
<td>Marlene Wagner, Johannes Kepler University Linz, Austria; Detlef Urhahne, University of Passau, Germany</td>
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<td>Investigating students’ perceived benefits of system- vs. teacher-based learning analytics feedback</td>
<td>Clara Schumacher, Humboldt Universität zu Berlin, Germany; Dirk Ifenthaler, University of Mannheim, Germany</td>
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<td><strong>Chair</strong></td>
<td>Liron Primor, Hemdat Academic College, Israel</td>
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<td>Prospective primary teachers’ flexible use of arithmetic concepts, procedures, and strategies</td>
<td>Andreas Schulz, Zurich University of Teacher Education, Switzerland</td>
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<td>The Quality of Explanation Videos and their Relationship to Preservice Teacher Competencies</td>
<td>Malte Ring, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany</td>
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<td>Mathematics teacher students’ use of instructional videos</td>
<td>Anna-Katharina Poschkamp, Leuphana University of Lüneburg, Germany; Michael Besser, Leuphana Universität Lüneburg, Germany; Timo Ehmke, Leuphana University of Lüneburg, Germany; Poldi Kuhl, Leuphana Universität Lüneburg, Germany</td>
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Session F: 9  Time: 18:45-19:45  Location: Session Room 5

SINGLE PAPER: EXPERIMENTAL STUDIES IN PRE-SERVICE TEACHER EDUCATION

Chair
Baruch Schwarz, Hebrew University of Jerusalem, Israel

Reflective Goal-Setting Improves Academic Achievement; A Large-Scale Field Experiment
Izaak Dekker, Erasmus University Rotterdam, Netherlands; Michäela Schippers, Erasmus University Rotterdam, Netherlands; Erik Van Schoooten, Kohnstamm Institute, University of Amsterdam, Netherlands

Effects of automatic adaptive AI-based feedback on diagnostic skills of pre-service teachers
Michael Sailer, LMU Munich, Germany; Elisabeth Bauer, Ludwig-Maximilians-Universität (LMU), Germany; Riikka Hofmann, University of Cambridge, United Kingdom; Jan Kiesewetter, University of Munich, Germany; Julia Glas, Ludwig Maximilians Universität (LMU), Germany; Frank Fischer, Ludwig Maximilians-Universität (LMU), Germany

Acquiring Professional Vision by Classroom Video: Effects of Segmenting and Self-Explanation Prompts
Monika Martin, Albert-Ludwigs-Universität Freiburg, Germany; Meg Farrell, Technische Universität München, Germany; Tina Sessöl, Technische Universität München, Germany; Werner Reiß, University of Education Freiburg, Germany; Alexander Renkl, University of Freiburg, Germany

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

SINGLE PAPER: E-LEARNING AND ONLINE LEARNING

Chair
Maria Platsidou, University of Macedonia, Greece

Unexpected effect of individualized mastery assessment feedback in short online grammar courses
Uwe Maier, University of Education Schwäbisch Gmünd, Germany

Challenges and opportunities experienced by Swiss VET teachers during the shift to remote teaching
Francesca Amenduni, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Martina Rauseo, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland

Digitally supported teaching and learning during the first COVID-19 lockdown
Mandy Hommel, OTH Amberg-Weiden, Germany

Understanding English teachers’ non-volitional use of online teaching during the COVID-19 pandemic
Fang Huang, Qingdao University, China; Timothy Teo, Murdoch University, Australia

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

SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN STUDENT LEARNING

Chair
Peter Hobel, Institute for the Studies of Culture, University of Southern Denmark, Denmark

A qualitative study of the academic challenges and help-seeking processes of high and low achievers
Francesca Suter, University of Zurich, Switzerland; Carmen Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

Knowledge is power – but you should use it!
Sebastian Trentepohl, Ruhr-Universität Bochum, Germany; Julia Wäldeyer, Ruhr-University Bochum, Germany; Flescher Fleischer, Ruhr-University Bochum, Germany; Julian Roselle, Ruhr University Bochum, Germany; Detlev Leutner, University of Duisburg-Essen, Germany; Joachim Wirth, Ruhr-University Bochum, Germany

Regulation in Collaborative Learning: An Expert Study to Assess Immediacy of Regulation Strategies
Martin Greisel, University of Augsburg, Germany; Laura Spang, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany
### Session F: 12
**Time:** 18:45-19:45  
**Location:** Session Room 14

#### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND MOTIVATION

**Chair**  
Gertraud Benke, Klagenfurt University, Austria

**Student academic motivation during the COVID-19 lockdown: A cross-country comparison**  
Ana Camacho, University of Porto and Polytechnic Institute of Porto, Portugal; Nadine Correa, Instituto Universitário de Lisboa, Portugal; Sonia Zaccocetti, University of Padova, Italy; Cecilia Aguiar, Instituto Universitário de Lisboa, Portugal; Lucia Mason, University of Padova, Italy; Rui Alexandre Alves, University of Porto, Portugal; João Daniel, ISPA - Instituto Universitário de Lisboa, Portugal

**The Science Task Value Dynamics among Elementary students – A Longitudinal Study from Grade 1 to 5**  
Janica Vinni-Laakso, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Kalle Juuti, University of Helsinki, Finland; Anni Loukomies, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

**Short-Term Relations Between Students’ Situated Expectancies and Task Values in the Math Domain**  
Daria Katharina Benden, TU Dortmund University, Germany; Fani Lauermann, TU Dortmund University, Germany

### Session F: 13
**Time:** 18:45-19:45  
**Location:** Session Room 9

#### SINGLE PAPER: CONVERSATION AND DISCOURSE ANALYSIS

**Chair**  
Katrien Cuyvers, Spaarne Gasthuis, Netherlands

**Student resources as mediational means in school science conversations**  
Anniken Furberg, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway

**We play the future: Exploring digital transformation in kindergarten through pretend play**  
Lena Hohenstein, University of Teacher Education St.Gallen, Switzerland; Franziska Vogt, St.Gallen University of Teacher Education, Switzerland

**Examining the product and process features in the oral narratives of young children**  
Anna Llaurado, UCL, United Kingdom; Emma Sumner, UCL, United Kingdom; Jessica Massonnie, UCL, France; Julie Dockrell, Institute of Education, United Kingdom

### Session F: 14
**Time:** 18:45-19:45  
**Location:** Session Room 12

#### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY

**Chair**  
Benzi Slakmon, Tel Aviv University, Israel

**Scholastic and Parental Homework Assistance. Effects on Students’ Achievement and Homework Behaviour**  
Lisa Benckwitz, IPN Leibniz Institute for Science Education, Germany; Karin Gull, IPN Leibniz Institute for Science Education, Germany; Janina Roloff-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**Parental involvement in homework during Covid-19 confinement in Spain**  
Natalia Suárez-Fernández, University of Oviedo, Spain; José Carlos Núñez, University of Oviedo, Spain; Estrella Fernandez Alba, University of Oviedo, Spain; Pedro Rosario, Universidade do Minho, Portugal

**Developing Argument Skill Through Collaborative Engagement in Argumentation**  
Kalypso Iordanou, University of Central Lancashire, Cyprus; Dora Tzialli, University of Central Lancashire Cyprus, Cyprus
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predictive models of self-explanation in reading comprehension</strong></td>
<td>Rosemary Southwell, University of Colorado at Boulder, United States; Caitlin Mills, University of New Hampshire, United States; Sidney D'Mello, University of Colorado Boulder, United States</td>
</tr>
<tr>
<td><strong>How the Design of Teacher Tools Based on Learning Analytics May Be Shaped by Different Use Scenarios</strong></td>
<td>Vincent Aleven, Carnegie Mellon University, United States; Bruce McLaren, Carnegie Mellon University, United States; Franceska Xhakaj, Carnegie Mellon University, United States; Kenneth Holstein, Carnegie Mellon University, United States</td>
</tr>
<tr>
<td><strong>Can and Should we Assess and Optimize Learners’ Engagement and Cognitive Load with Machine Learning?</strong></td>
<td>Peter Gerjets, Institut für Wissensmedien / University of Tübingen, Germany; Birgit Brucker, Leibniz-Institut für Wissensmedien (IWM), Germany; Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Enkelejda Kasneci, University of Tübingen, Germany</td>
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<tr>
<td>Session G: 1</td>
<td>Time: 09:00-10:00</td>
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<tr>
<td><strong>SINGLE PAPER: MOTIVATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Kirsti Lonka, University of Helsinki, Finland</td>
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<tr>
<td><strong>University students’ epistemic profiles, study engagement, self-regulation and interest</strong></td>
<td>Kirsti Lonka, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Jan Vermunt, Eindhoven University of Technology, Netherlands</td>
</tr>
<tr>
<td><strong>Investigating the links between learning approach, epistemic beliefs, motivation and social support</strong></td>
<td>Manuel Bächhold, University of Montpellier, France; Jacqueline Papet, University of Montpellier, France; Dominique Barbe Assisio, University of Montpellier, France; Sandra Sone, University of Montpellier, France; Kevin De Checchi, University of Montpellier, France; Agnieszka Jezierski, University of Montpellier, France; Philippe Gabriel, University of Avignon, France; Florence Cassignol, University of Perpignan, France</td>
</tr>
<tr>
<td><strong>Introducing a dynamic situated expectancy-value model of moment-to-moment developmental dynamics</strong></td>
<td>Julia Moeller, Universität Leipzig, Germany; Jaana Viljaranta, University of Eastern Finland, Finland; Asko Tolvanen, University of Jyväskylä, Finland; Julia Dietrich, Friedrich-Schiller-University Jena, Germany</td>
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<tr>
<th>Session G: 2</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 8</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: SELF-EFFICACY AND TEACHER EFFECTIVENESS</strong></td>
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<td><strong>Chair</strong></td>
<td>Izaak Dekker, Erasmus University Rotterdam, Netherlands</td>
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<tr>
<td><strong>Measuring teachers’ teaching self-efficacy beliefs in higher education</strong></td>
<td>Irene Douwes-van Ark, University of Groningen, Netherlands; Ine Noben, University of Groningen, Netherlands; Jan Folkert Deinum, University of Groningen, Netherlands</td>
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<tr>
<td><strong>Does spirituality or religiosity make a difference in explaining teachers’ professional beliefs?</strong></td>
<td>Manfred L. Perner, University of Erlangen-Nuremberg, Germany; Marcus Penthin, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany</td>
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<tr>
<th>Session G: 3</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 12</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Florencia Gomez Zaccarelli, Pontificia Universidad Católica de Chile, Chile</td>
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<tr>
<td><strong>Unsolvable gender problems – postfeminist discourses in the talk of future physics teachers</strong></td>
<td>Johanna Larsson, Uppsala University, Sweden; Anders Johansson, Chalmers University of Technology, Sweden</td>
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<tr>
<td><strong>Comparing three interventions to promote diagnostic competence in pre-service teachers</strong></td>
<td>Lea Grotogut, Universität Paderborn, Germany; Kathrin Klingseck, Universität Paderborn, Germany</td>
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<tr>
<td><strong>Practice-based Teacher Education: Learning Sequence through Collaboration and Critical Thinking</strong></td>
<td>Alejandra Meneses, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; María Graciela Vees, Pontificia Universidad Católica de Chile, Chile; Silvana Antigada, Pontificia Universidad Católica de Chile, Chile</td>
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<th>Session G: 4</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 7</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: GAME-BASED LEARNING IN MATHEMATICS</strong></td>
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<td><strong>Chair</strong></td>
<td>Leonie Johann, NORD University, Norway</td>
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<tr>
<td><strong>A game-based approach to promoting adaptive expertise with rational numbers</strong></td>
<td>Jake McNullen, University of Turku, Finland; Antti Koskinen, University of Tampere, Finland; Tomi Kärki, University of Turku, Finland; Antero Lindstedt, University of Tampere, Finland; Saku Määttä, University of Turku, Finland; Emo Lehtinen, University of Turku, Finland; Minna Hamula-Sorunen, University of Turku, Finland; Kristian Kirk, Tampere University, Finland</td>
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<tr>
<td><strong>Effects of Digital Games on Student Motivation in Mathematics: A Meta-analysis in K-12</strong></td>
<td>Daniela Padda, University of Cagliari, Italy; Marta Pellegrini, University of Florence, Italy; Giuliano Vivarelli, University of Cagliari, Italy; Claudio Zandonella Callegari, University of Padua, Italy</td>
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<tr>
<td><strong>Game elements increase engagement: Evidence from multimodal data sources</strong></td>
<td>Manuel Ninua, University of Innsbruck, Austria; Kristian Kirk, Tampere University, Finland; Korbinian Moeller, Leibniz-Institut für Wissensmedien, Germany; Guilherme M. de O. Wood, University of Graz, Austria; Silvia Kober, University of Graz, Austria</td>
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**Session G: 5**  
**Time:** 09:00-10:00  
**Location:** Session Room 1

**SINGLE PAPER: COMPUTER-ASSISTED LEARNING IN HIGHER EDUCATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Effects of Adaptive Quizzing: The Type of Adaptation Matters</th>
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<tbody>
<tr>
<td>Marjolein Deunk, University of Groningen, Netherlands</td>
<td>Niklas Obergassel, Ruhr University Bochum, Germany; Svenja Heitmann, Ruhr-Universität Bochum, Germany; Stefan Fries, University of Bielefeld, Germany; Kirsten Berthold, University of Bielefeld, Germany; Axel Grund, University of Luxembourg, Luxembourg; Julian Roettle, Ruhr University Bochum, Germany</td>
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<tr>
<th>Chair</th>
<th>Peer feedback for undergraduate interdisciplinary learning</th>
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<tr>
<td></td>
<td>Rianne van Lambalgen, Utrecht University, Netherlands</td>
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<tr>
<th>Chair</th>
<th>Investigating the Effectiveness of Role-Play Patient Simulations in Dental Education</th>
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<tr>
<td></td>
<td>Elizabeth McAlpin, New York University, United States; Marci Levine, New York University, United States; Jan L. Plass, New York University, United States</td>
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**Session G: 6**  
**Time:** 09:00-10:00  
**Location:** Session Room 9

**SINGLE PAPER: ASSESSMENT IN TEACHER PROFESSIONAL DEVELOPMENT**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Measuring the quality of teacher professional development sessions - A newly developed tool</th>
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<tbody>
<tr>
<td>Linda Barman, The Royal Institute of Technology (KTH), Sweden</td>
<td>Daniela Rzejak, University of Kassel, Faculty of Human Sciences, Department of Educational Science, Germany; Lena Finger, Ruhr University Bochum, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany; Richard Klöden, Vocational School Center for Technology I - Industrial School Chemnitz, Germany; Frank Lipowsky, University of Kassel, Germany; Dirk Richter, University of Potsdam, Germany</td>
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<tr>
<th>Chair</th>
<th>Using video to assess preschool teachers’ knowledge of oral language pedagogy</th>
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<td></td>
<td>Sandra Mathers, University of Oxford, United Kingdom</td>
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<tr>
<th>Chair</th>
<th>Investigating the validity of self-report measures that assess teacher technology-related knowledge</th>
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<tr>
<td></td>
<td>Franziska Baier, Goethe-Universität Frankfurt, Germany; Lukas Schulze-vorberg, Goethe-University Frankfurt, Institute of Psychology, Germany; Mareike Kunter, DIPF</td>
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**Session G: 7**  
**Time:** 09:00-10:00  
**Location:** Session Room 3

**SINGLE PAPER: EDUCATIONAL POLICY**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Measuring equity across the Nordics. Methodological choices as implications for educational policies</th>
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<tbody>
<tr>
<td>Katharina Schnitzler, Technical University of Munich, Germany</td>
<td>Oleksandra Mittal, ILS, University of Oslo, Norway; Trude Nilsen, University of Oslo, Norway</td>
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<thead>
<tr>
<th>Chair</th>
<th>Effects of inspections on schools in challenging circumstances: a systematic literature review</th>
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<tbody>
<tr>
<td></td>
<td>Bernardita Munoz Chereau, University College London, United Kingdom; Melanie Ehren, VU university of Amsterdam, Netherlands; Jo Hutchinson, Education Policy Institute, United Kingdom</td>
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<thead>
<tr>
<th>Chair</th>
<th>The ‘losers’ of the accountability game: ‘failing’ schools in England, USA and Chile</th>
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<tbody>
<tr>
<td></td>
<td>Bernardita Munoz Chereau, University College London, United Kingdom; Alvaro Gonzalez, Universidad Católica Silva Henríquez, Chile; Coby Meyers, Virginia University, United States</td>
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</table>

**Session G: 8**  
**Time:** 09:00-10:00  
**Location:** Session Room 14

**SINGLE PAPER: SOCIAL INTERACTION IN TEACHER PROFESSIONAL DEVELOPMENT**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Stories about Pedagogical Emotions in professional development contexts</th>
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<tbody>
<tr>
<td>Beat Rechsteiner, University of Zurich, Switzerland</td>
<td>Karin Sartati-shabtov, Ben-Gurion University of the Negev, Israel; Dana Vedder-Weiss, Ben-Gurion University of the Negev, Israel</td>
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<th>Chair</th>
<th>Objective decision-making: Teacher allocation meetings’ structure and interaction</th>
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<td>Janneke Sleenhof, Eindhoven School of Education, Netherlands</td>
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<tr>
<th>Chair</th>
<th>Beyond attitudes and teaching methods: The role of teacher professional ethos in tackling bullying</th>
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<tr>
<td></td>
<td>Eveline Gutzwiller-Helfenfinger, University of Fribourg, Switzerland</td>
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</table>
### Session G: 9
**Time:** 09:00-10:00  
**Location:** Session Room 2

<table>
<thead>
<tr>
<th>Single Paper: School Effectiveness</th>
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<tbody>
<tr>
<td><strong>Chair</strong> Chang Lu, University of Alberta, Canada</td>
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</tbody>
</table>
| **Why do some students feel well at school and others do not?** A discriminant analysis  
Ramona Obermeier, Johannes Kepler Universität Linz, Austria; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany; Juliane Schlesier, University of Oldenburg, Germany |
| **Digital Transformation in Vocational Education from the Perspectives of School Management & Teachers**  
Martina Rauseo, Swiss Federal Institute for Vocational Eduation and Training (SFIVET), Switzerland; Andreas Harder, University of Konstanz, Germany; Deborah Glassy, HES-SO Valais-Wallis, Switzerland; Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Francesca Amenduni, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattano, Swiss Federal Institute for Vocational Education and Training, Switzerland; Serge Imboden, HES-SO Valais-Wallis, Switzerland; Stephan Schumann, University of Constance, Germany |
| **Data rich and information poor? Improving instruction with multiple data.**  
Sebastian Wurster, Johannes Gutenberg University Mainz, Germany |

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

<table>
<thead>
<tr>
<th>Single Paper: Motivation, Emotion and Mathematics</th>
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<tbody>
<tr>
<td><strong>Chair</strong> Sabine Schlag, University of Wuppertal, Germany</td>
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</table>
| **Does school affect private tutoring attendance? Predictors of private tutoring among tenth-graders**  
Anna Hawrot, Leibniz Institute for Educational Trajectories (LIfBi), Germany |
| **Relation between facets of self-concept and study satisfaction in university mathematics programs**  
Stefan Ufer, Ludwig-Maximilians-Universität (LMU), Germany; Timo Kosiol, Ludwig-Maximilians-Universität (LMU), Germany; Stefanie Rasch, Otto-von-Guericke Universität Magdeburg, Germany |
| **Success, Pride, Motivation: A logical sequence? – Exploring the impact of attributions and context**  
Judith Fränken, RWTH Aachen University, Germany; Kerstin Hellrer, Eindhoven University of Technology, Netherlands |

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### Session G: 11
**Time:** 09:00-10:00  
**Location:** Session Room 11

<table>
<thead>
<tr>
<th>Single Paper: Foreign and Second Language Acquisition</th>
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<tbody>
<tr>
<td><strong>Chair</strong> Guido Nottbusch, University of Potsdam, Germany</td>
</tr>
</tbody>
</table>
| **Predictors for Code-Switching Behavior in Dual Language Learning Children**  
Leila Teresa Schächinger Tenés, Faculty of Psychology, University of Basel, Switzerland; Jessica Carolyn Bühler, University of Basel, Switzerland; Letizia Volpin, University of Neuchâtel, Switzerland; Alexander Grob, University of Basel, Switzerland; Katrin Skoruppa, University of Neuchâtel, Switzerland; Robin Klaus Segerer, University of Basel, Switzerland |
| **Preschool brain- & behavioral data predict literacy outcomes in German (dialect)-speaking children**  
Jessica Carolyn Bühler, University of Basel, Switzerland; Urs Maurer, The Chinese University of Hong Kong, Hong Kong |
| **Effects of receptive-level phonological processing in mono- and bilingual preschoolers**  
Jessica Carolyn Bühler, University of Basel, Switzerland; Leila Teresa Schächinger Tenés, Faculty of Psychology, University of Basel, Switzerland; Katrin Skoruppa, University of Neuchâtel, Switzerland; Alexander Grob, University of Basel, Switzerland; Robin Klaus Segerer, University of Basel, Switzerland |
### Session G: 12
**Time:** 09:00-10:00  
**Location:** Session Room 16

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

**Chair**  
Tijs Rotsaert, Ghent University, Belgium

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

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

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

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

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

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

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

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

**Chair**  
Gertraud Benke, Klagenfurt University, Austria

**Organiser**  
Stella Vosniadou, Flinders University, Australia

**Discussant**  
Erno Lehtinen, University of Turku, Finland

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

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

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

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

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

**Chair**  
Liesje Coertjens, Université catholique de Louvain (UCL), Belgium

**Organisers**  
Liesje Coertjens, Université catholique de Louvain (UCL), Belgium; Christopher Neil Prilop, Leuphana University Lueneburg / University of Hamburg, Germany

**Discussant**  
Franz Prins, Utrecht University, Netherlands

- How knowledge, professional vision, and experience predict peer feedback quality  
  Christopher Neil Prilop, Leuphana University Lueneburg / University of Hamburg, Germany; Kira Elena Weber, Leuphana University Lueneburg, Germany; Marc Klein Knecht, Leuphana University Lueneburg, Germany

- Systematic review on human and social variables in peer assessment  
  Jose Carlos Ocampo, University of Deusto, Spain; Maryam Alqassab, Vatel Bahrain International Hospitality School, Germany; Javier Fernández, Universidad Autonoma de Madrid, Spain; Ernesto Paradero, Universidad Deusto, Spain

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

- The impact of training targeting the social nature of peer feedback  
  Morgane Senden, Université catholique de Louvain (UCL), Belgium; Dominique De Jaeger, Université catholique de Louvain (UCL), Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium

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### EARLI KEYNOTE SESSION: EARLY MANIFESTATIONS OF EXECUTIVE FUNCTIONS FROM THE END OF THE FIRST YEAR AT THE INFANT SCHOOL

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

**Early manifestations of Executive Functions from the end of the first year at the infant school**
Cintia Rodríguez, Universidad Autonoma de Madrid, Spain

### EARLI KEYNOTE SESSION: INNOVATIVE METHODS AND TECHNOLOGIES FOR ENHANCING LEARNING AND PROFESSIONAL DEVELOPMENT

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

**Innovative Methods and Technologies for Enhancing Learning and Professional Development**
Raija Härmäläinen, University of Jyväskylä, Finland

### SINGLE PAPER: PRE-SERVICE TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Emmanuel Manalo, Kyoto University, Japan

**What is really important? Results of a study on feedback in the second phase of teacher training**
Stefan Siegel, University of Augsburg, Germany; Benedikt Wisniewski, University of Augsburg, Germany

**Agency development as a function of identity learning in teacher education**
Monique H.R.M.A van der Heijden, De Kempel University of Applied Sciences, Netherlands; Douwe Boijaard, Eindhoven University of Technology, Netherlands; Jan Vermunt, Eindhoven University of Technology, Netherlands

**Supporting Student Teachers’ Conceptual Knowledge Acquisition Through Example-Based Learning**
Tim Steininger, Albert-Ludwigs-Universität Freiburg, Germany; Thamar Voss, University of Freiburg, Germany; Julia Kienzler, Albert-Ludwigs-Universität Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany

### SINGLE PAPER: LIFELONG LEARNING AND SOCIAL INTERACTION

**Chair**
Meaghan Brugha, University of Cambridge, United Kingdom

**Subject talk. Tracing characteristics of social interaction**
Astrid Camilla Wig, University of South-Eastern Norway, Norway; Tine Proitz, University of South-Eastern Norway, Norway

**The relation of professional qualification, collaboration and research performance**
Agnes Cichy, University of Regensburg, Germany; Hans Gruber, University of Regensburg, Germany; Tuire Palonen, University of Turku, Finland

**Design considerations for a systemic approach to technology-supported professional learning**
Koula Charitonos, The Open university UK, United Kingdom; Allison Littlejohn, University College London, United Kingdom; Heli Kaatrakoski, University of Stavanger, Norway

### SINGLE PAPER: SECONDARY EDUCATION

**Chair**
Sally Gutierrez, Far Eastern University, Philippines, Philippines

**On the predictors of Computational Thinking measured with the Computational Thinking Scales**
Josef Guggemos, University of St.Gallen, Switzerland

**Schooling as context for the formation of supranational political support by students in Europe**
Katrin Hahn-Laudenberg, University of Wuppertal, Germany; Hermann J. Ab, University of Duisburg-Essen, Germany

**Prediction of teacher education students academic achievement based on the matriculation examination**
Jenni Kunnari, University of Oulu, Finland; Jouni Pursiainen, University of Oulu, Finland; Hanni Muukkonen, University of Oulu, Finland
Session H:

Time: 12:00-13:00

Location: Session Room 6

SINGLE PAPER: LEARNING TECHNOLOGIES

Chair
Mariette van Loon, University of Bern, Switzerland

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

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

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

Session H:

Time: 12:00-13:00

Location: Session Room 10

SINGLE PAPER: PRE-SERVICE TEACHER EDUCATION

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

Fostering utility-value of educational research evidence in future teachers
Maximilian Knöger, Technical University of Munich (TUM), Germany; Ricardo Böheim, University of Augsburg, Germany; Anna Maria Diery, Technical University of Munich (TUM), Germany; Tine Seidel, Technische Universität München; Germany; Judith Harackiewicz, University of Wisconsin Madison, United States

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

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

Session H:

Time: 12:00-13:00

Location: Session Room 11

SINGLE PAPER: CITIZENSHIP EDUCATION

Chair
Tatiana Shubina, University of Oulu, Finland, Finland

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

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

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

Session H:

Time: 12:00-13:00

Location: Session Room 9

SINGLE PAPER: COGNITIVE SKILLS AND MOTIVATION

Chair
Lihong Huang, Oslo Metropolitan University, Norway

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

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

Learning Strategy Deployment and Achievement Goal Orientation within MetaTutor
Megan Wiedbusch, University of Central Florida, United States; Roger Arzvedo, University of Central Florida, United States

TUESDAY, 24 AUGUST 2021
### Session H: 8
**Time:** 12:00-13:00 | **Location:** Session Room 8

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

<table>
<thead>
<tr>
<th>Chair</th>
<th>Anna-Lena Ekdahl, Jönköping University, Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Social Reproduction through Specialized Classes in Czechia: Why do Parents Dodge their Local School?</td>
</tr>
<tr>
<td>Authors</td>
<td>Radka Smith Slámová, Institute for Research and Development of Education, Faculty of Education, Charles University in Prague, Czech Republic</td>
</tr>
<tr>
<td>Abstract</td>
<td>Taking on a task: Children handling the premises of group discussions about democratic concepts</td>
</tr>
<tr>
<td>Authors</td>
<td>Lea Edstål-Ahrens, University of Gothenburg, Sweden; Niklas Pramling, University of Gothenburg, Sweden; Malin Nilsen, University of Gothenburg, Sweden</td>
</tr>
<tr>
<td>Title</td>
<td>Effects of Teacher Feedback on Children's Self-Concepts and Motivation in Science Lessons</td>
</tr>
<tr>
<td>Authors</td>
<td>Fabian Hoya, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Eva Blumberg, Paderborn University, Germany</td>
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### Session H: 9
**Time:** 12:00-13:00 | **Location:** Session Room 7

**SINGLE PAPER: SELF-REGULATION**

<table>
<thead>
<tr>
<th>Chair</th>
<th>Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The relation between self-regulation and contextual- instructional characteristics of activities.</td>
</tr>
<tr>
<td>Authors</td>
<td>Antonia Zachariou, University of Roehampton, United Kingdom</td>
</tr>
<tr>
<td>Title</td>
<td>Self-Regulation in Early Writing Instruction</td>
</tr>
<tr>
<td>Authors</td>
<td>Perry Klein, The University of Western Ontario, Canada; Ashley Bledsoe, Western University, Canada; Jill Dombro, The University of Western Ontario, Canada; Christine Giese, The University of Western Ontario, Canada; Kristen Wing-Yan Sha, The University of Western Ontario, Canada; Serena Thompson, The University of Western Ontario, Canada</td>
</tr>
<tr>
<td>Title</td>
<td>Effects of Self-Scoring Math Problem Solutions on 4th Grade Students’ Monitoring and Regulation</td>
</tr>
<tr>
<td>Authors</td>
<td>Sophie Oudman, Utrecht University, Netherlands; Janneka van de Pol, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands</td>
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### Session H: 10
**Time:** 12:00-13:00 | **Location:** Session Room 16

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

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<tr>
<th>Chair</th>
<th>Nicola Reimann, Durham University, United Kingdom</th>
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<tbody>
<tr>
<td>Title</td>
<td>Teaching effectiveness in primary education: Combining the Dynamic Model with dialogic pedagogy</td>
</tr>
<tr>
<td>Authors</td>
<td>Leonidas Kyrriakides, University of Cyprus, Cyprus; Maria Vritiki, University of Cyprus, Cyprus</td>
</tr>
<tr>
<td>Title</td>
<td>Students’ basic academic skills &amp; individual support needs associate with teacher focus of attention</td>
</tr>
<tr>
<td>Authors</td>
<td>Sawsan Chaudhuri, University of Jyväskylä, Finland; Heli Muhonen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland</td>
</tr>
<tr>
<td>Title</td>
<td>Teachers’ occupational well-being during Covid-19 pandemic</td>
</tr>
<tr>
<td>Authors</td>
<td>Sanni Pöysä, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland</td>
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### Session H: 11
**Time:** 12:00-13:00 | **Location:** Session Room 1

**SINGLE PAPER: COMMUNITIES OF PRACTICE**

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<tr>
<th>Chair</th>
<th>Tamara Kastorff, Ludwig Maximilians-Universität (LMU), Germany</th>
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</thead>
<tbody>
<tr>
<td>Title</td>
<td>Between Managerialism and Collegialism: Educational Innovators’ Networks in Higher Education</td>
</tr>
<tr>
<td>Authors</td>
<td>Tobias Jenert, Paderborn University, Germany</td>
</tr>
<tr>
<td>Title</td>
<td>“Otherwise, you can play driving the boat on your PlayStation instead”: Simulator-based training</td>
</tr>
<tr>
<td>Authors</td>
<td>ANASTASIA SKARPETI, NTNU - Norwegian University of Science and Technology, Norway; Charlott Sellberg, University of Gothenburg, Sweden</td>
</tr>
<tr>
<td>Title</td>
<td>On participation and learning to be a citizen. Troubling norms of identity in the performing arts</td>
</tr>
<tr>
<td>Authors</td>
<td>Petra Weckström, Örebro Teater, Sweden; Sangeeta Bagga-Gupta, Jönköping University, Sweden</td>
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<tr>
<td>Session H: 12</td>
<td>Time: 12:00-13:00</td>
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<tr>
<td><strong>SINGLE PAPER: MOTIVATION AND EMOTION IN HIGHER EDUCATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Kristiina Mänty, University of Oulu, Finland</td>
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<td></td>
<td><strong>University Teachers’ Professional Development: The Role of Achievement Goals for Learning</strong></td>
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<td><strong>Academic Procrastination: the role of future time perspective and episodic future thinking</strong></td>
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<td><strong>Predicting Academic Emotions in the Learning Process Using EEG</strong></td>
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<th>Session H: 13</th>
<th>Time: 12:00-13:00</th>
<th>Location: Session Room 12</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: TEACHING AND INSTRUCTION IN STUDENT LEARNING</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Soeharto Soeharto, University of Szeged, Doctoral School of Education, Indonesia</td>
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<td></td>
<td><strong>Fostering flexibility in equation solving by means of comparing and classroom discussions</strong></td>
<td>Christian Rüede, FHNW School of Education, Switzerland; Sog Yee Mok, University of Zurich, Switzerland; Fritz C. Staub, University of Zurich, Switzerland</td>
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<tr>
<td></td>
<td><strong>The role of need for cognition and specific self-explanation instructions in text comprehension</strong></td>
<td>Susanne Narciss, TU Dresden, Germany; Maria Neumann, Dresden University of Technology, Germany; Antje Proske, TU Dresden, Germany</td>
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<td><strong>Promoting Learning through Elaborated Feedback in Online Quizzes with Closed Questions</strong></td>
<td>Natalie Enders, Universität Hildesheim, Germany; Robert Gaschler, FernUniversität in Hagen, Germany; Veit Kubik, University of Bielefeld, Germany</td>
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<th>Session H: 14</th>
<th>Time: 12:00-13:00</th>
<th>Location: Session Room 13</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: MATHEMATICS</strong></td>
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<td><strong>Chair</strong></td>
<td>Sikunder Ali, Norwegian University of Science and Technology (NTNU), Norway</td>
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<td></td>
<td><strong>Teacher Feedback in Flipped Mathematics Classrooms</strong></td>
<td>Mustafa Çevikbas, University of Hamburg, Germany; Gabriele Kaiser, University of Hamburg, Germany</td>
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<td></td>
<td><strong>Anxiety, motivation, &amp; ability in math &amp; reading in children with and without learning difficulties</strong></td>
<td>Courtney Pollack, Boston College, Massachusetts Institute of Technology, United States; Dayna Wilmot, Massachusetts Institute of Technology, United States; Tracy Centanni, Texas Christian University, United States; Kelly Halverson, Massachusetts Institute of Technology, United States; Andrea Imhot, University of Oregon, United States; Karolina Wade, Massachusetts Institute of Technology, United States; Rachel Romeo, Massachusetts Institute of Technology, United States; Jimmy Capella, Massachusetts Institute of Technology, United States; Isabelle Frosch, Massachusetts Institute of Technology, United States; Anita D’Mello, Massachusetts Institute of Technology, United States; Noor Al Dahhan, MGH Institute of Health Professions, United States; John D.E. Gabrieli, Massachusetts Institute of Technology, United States; Joanna Christodoulou, MGH Institute of Health Professions, United States</td>
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<tr>
<td></td>
<td><strong>High Achievers in Mathematics: Metacognitive, Motivational and Emotional Profiles</strong></td>
<td>Dimitrios Moustakas, University of Macedonia, Greece; Eleftheria Gonida, Aristotle University of Thessaloniki, Greece</td>
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<tr>
<th>Session H: 15</th>
<th>Time: 12:00-13:00</th>
<th>Location: Session Room 18</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: THE ROLE OF DIALOGUE IN DESIGNING FOR INTERDISCIPLINARITY</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Tuike Iiskala, University of Turku, Finland</td>
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<tr>
<td></td>
<td><strong>Co-designing for learning across disciplines: Design principles for student-led innovation</strong></td>
<td>Lina Markauskaitė, University of Sydney, Australia; Dwayne Ripley, The University of Sydney, Australia; Natasha Arthars, The University of Sydney, Australia; Maryam Khosronejad, The University of Sydney, Australia</td>
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<td></td>
<td><strong>Knowledge integration and coordination of collaboration in interdisciplinary learning design teams</strong></td>
<td>Carol Rodrigues, University of Oslo, Faculty of Education, Norway; Crina Damas, University of Oslo, Norway; Greta Bjørk Gudmundsdottir, University of Oslo, Norway; Hanna Ragnarsdóttir, University of Iceland School of Education, Iceland</td>
</tr>
<tr>
<td></td>
<td><strong>Interdisciplinarity and school-learning in schools that comply with dialogic pedagogies</strong></td>
<td>Baruch Schwarz, Hebrew University of Jerusalem, Israel; Einat Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel; Boris Koirchou, Weizmann Institute of Science, Rehovot, ISRAEL, Israel; Michel Tabach, Tel Aviv University, Israel; Anat Yarden The Weizmann Institute of Science, Weizmann Institute of Science, Israel</td>
</tr>
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</table>
### Session H: 16
**Time:** 12:00-13:00  
**Location:** Session Room 15

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

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

**Discussant**  
Tim Mainhard, Utrecht University, Netherlands

**Can You Feel the Excitement? The Physiological Correlates of Students' Self-reported Experiences**  
Reiko Visajaani Salonen, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland; Katarina Salminen, Helsinki University, Finland

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

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

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

**ROUNDTABLE: PRIMARY EDUCATION**

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

**"I can do this as well as you!" – Peers in mixed-age classes construct commonality and difference**  
Tina Wulther, Technische Universitaet Dresden, Germany

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

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

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

**ROUNDTABLE: MOTIVATION**

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

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

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

**Effectiveness of Reader’s Theater programs in promoting reading skills and motivation**  
Jarkko Hautala, Niilo Mäki Institute, Finland; Miia Ronimus, Niilo Mäki Institute, Finland; Enni Junttila, Niilo Mäki Institute, Finland

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

**ROUNDTABLE: LEARNING AND INSTRUCTION**

**Chair**  
Birgit Heppt, Humboldt-Universität zu Berlin, Germany

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

**Intraindividual dynamics of interest development**  
Jasja Draijer, University Utrecht, Netherlands; Larrie Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

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

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

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Sylvana Sofkova Hashemi, Halmstad University, Sweden; Eva Nyberg, Gothenburg, Sweden; Peter Nyström, Gothenburg, Sweden; Ali Yildirim, Gothenburg, Sweden</td>
<td>University of Gothenburg, Sweden</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Engin Ader, Boğaziçi University, Turkey; Roger Azevedo, Central Florida, United States; Sanna Järvelä, Oulu, Finland; Alexander Groeschner, Friedrich Schiller University, Jena, Germany; Tova Michalsky, Bar Ilan University, Israel</td>
<td>University of Central Florida, United States; University of Oulu, Finland; Friedrich Schiller University, Jena, Germany; Bar Ilan University, Israel</td>
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### Session I: 6
**Time:** 15:45-16:45  
**Location:** Session Room 11

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

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<thead>
<tr>
<th>Chair</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico</td>
<td>Universidad Autonoma de Baja California, Mexico</td>
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</tbody>
</table>

#### Characteristics of Teachers’ Professional Communication about Teaching (PCT) – a Systematic Review

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<thead>
<tr>
<th>Presenter</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Christian Schadt, University of Hohenheim, Germany; Julia Warwas, Hohenheim, Germany</td>
<td>University of Hohenheim, Germany</td>
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</table>

#### How narrative structure may foster teacher resilience: a qualitative analysis of two cases

<table>
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<tr>
<th>Presenter</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Marc Clara, University of Lleida, Spain; Alba Vallés, University of Lleida, Spain; Aina Franch, University of Lleida, Spain; Jordi Coduras, University of Lleida, Spain; Patricia Silva, University of Lleida, Spain; Silvia Cavalcante, University of Lleida, Spain</td>
<td>University of Lleida, Spain</td>
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#### Diversity and systematics of data-based intervention decisions in early education Mathematics

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<th>Presenter</th>
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<tr>
<td>Nicole Reinsdorf, University Potsdam, Germany; Miriam Bait, Leibniz Universität Hannover, Germany; Antje Ehrt, University of Potsdam / University of Johannesburg, Germany</td>
<td>University of Potsdam, Germany</td>
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### Session I: 7
**Time:** 15:45-16:45  
**Location:** Session Room 10

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

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<th>Chair</th>
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<tr>
<td>Naomi de Ruiter, University of Groningen, Netherlands</td>
<td>University of Groningen, Netherlands</td>
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</table>

#### Mindset Moderates Healthcare Providers’ Performance in a Neonatal Resuscitation Simulator

<table>
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<th>Presenter</th>
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<tbody>
<tr>
<td>Chang Lu, University of Alberta, Canada; Simran Ghoman, University of Alberta, Canada; Maria Cutumisu, University of Alberta, Canada; Georg Schmoelzer, University of Alberta, Canada</td>
<td>University of Alberta, Canada</td>
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#### A German Digital Reading Test for Grades 3 to 4: Development and Piloting

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<th>Presenter</th>
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<tr>
<td>Susanne Seifert, University of Graz, Austria; Lisa Paleczek, University of Graz, Austria</td>
<td>University of Graz, Austria</td>
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#### Parent’ perceptions and beliefs of assessment in Finnish basic education: A large-scale study

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<tr>
<td>Juuso Henrik Nieminen, University of Eastern Finland; Paivi Alponen, University of Eastern Finland, Finland</td>
<td>University of Eastern Finland</td>
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</table>
### Session I: 8  
**Time:** 15:45-16:45  
**Location:** Session Room 13

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

**Chair**  
Sylvi Vigmo, University of Gothenburg, Sweden

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<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Digital citizenship in primary education. From theoretical models to curriculums</td>
<td>Lionel Alvarez, HEP-Fribourg</td>
</tr>
<tr>
<td>Effects of digital media on knowledge acquisition in school: A systematic review of meta-analyses</td>
<td>Tamara Kastorff, Ludwig-Maximilians-Universität (LMU), Germany; Karsten Stegmann, Ludwig-Maximilians-Universität (LMU), Germany; Sonja Berger, Ludwig-Maximilians-Universität (LMU), Germany; Michael Sailer, LMU Munich, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany</td>
</tr>
<tr>
<td>Does the effect of instructor’s presence in videos vary with slide type and presentation type?</td>
<td>Christina Sondemann, German Institute for Adult Education, Germany; Martin Merkl, Deutsches Institut für Erwachsenenbildung, Germany</td>
</tr>
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### Session I: 9  
**Time:** 15:45-16:45  
**Location:** Session Room 9

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

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

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<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Modes of dealing with opposing theoretical perspectives in cognitive science</td>
<td>Thorsten Scheiner, Australian Catholic University, Australia</td>
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<td>Conceptual change in random transfer probability reasoning</td>
<td>Ida Kukliansky, Ruppin Academic Center, Israel; Yael Tal, Tel Aviv University, Israel</td>
</tr>
<tr>
<td>When do children understand that number words refer to exact cardinalities?</td>
<td>Pierina Cheung, National Institute of Education/Nanyang Technological University, Singapore, Singapore</td>
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### Session I: 10  
**Time:** 15:45-16:45  
**Location:** Session Room 8

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

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

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<tr>
<td>Towards student’ autonomy for peer-to-peer interaction: Affordance of dialogic scaffolding routines</td>
<td>Sally Gutierez, Far Eastern University, Philippines, Philippines</td>
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<tr>
<td>How can deep networks help us in the coding of discussions in the context of inquiry learning?</td>
<td>Pablo Uribe, Centro de Investigación Avanzada en Educación, Chile; Jóni Læmsä, University of Jyväskylä, Finland; Abelino Jimenez, Universidad de Chile, Chile; Daniela Caballero, Universidad de Chile, Chile; Roberto Araya, Universidad de Chile, Chile; Raija Hämäläinen, University of Jyväskylä, Finland</td>
</tr>
<tr>
<td>Exploring the Effectiveness of an Innovative Science Outreach Programme for Migrant Students</td>
<td>Julia Schieter, University of Tuebingen, Germany; Joana Moscoso, Native Scientist, United Kingdom; Ana Isabel Catarino, Flanders Marine Institute (VLIZ), Belgium; Jana Philipp, University of Tuebingen, Germany; Pedro Miranda Alonso, Erasmus Medical Center, Department of Biostatistics, Netherlands; Ulrich Trautwein, University of Tübingen, Germany; Jessika Golle, University of Tuebingen, Germany; Patrick Rebuschat, Lancaster University, United Kingdom</td>
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**Session I: 11**  
**Time:** 15:45-16:45  
**Location:** Session Room 12

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

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

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

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<tr>
<td>Types of Parent-School Cooperation – An Analysis of Cantonal Laws and Regulations in Switzerland</td>
<td>Nadine Schuler, PH Bern; School of Teacher Education, Switzerland; Caroline Villiger, University of Teacher Education Bern, Switzerland; Anna Hostettler, PH Bern - School of Teacher Education, Switzerland</td>
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<td>Family-School Partnerships with migrant Families and Low-SES Families</td>
<td>Hélène Leenders, Fontys University of Applied Sciences, Netherlands; Johan de Jong, Fontys University of applied sciences, Netherlands</td>
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<td>Family-School-Cooperation in ICT Contexts: Associations to Parents’ Skills and Parenting strategies</td>
<td>Sabrina Bonanati, Paderborn University, Germany; Nicole Gruchel, University of Paderborn, Germany; Ricarda Kurock, University of Paderborn, Germany; Heike Buhr, University of Paderborn, Germany</td>
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<td>Best Practice in Cultivating School-Family Cooperation in Primary Education: A Scoping Review</td>
<td>Paola Dusi, University of Verona, Italy; Audrey Addi-Raccah, Tel Aviv University, Israel; Maria Luisa Mori, University of Verona, Italy</td>
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**Session I: 12**  
**Time:** 15:45-16:45  
**Location:** Session Room 14

**SINGLE PAPER: ATTITUDES, BELIEFS AND MATHEMATICS**

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

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<td>How Classmates’ Gender Stereotypes Affect Students’ Math Self-Concepts: A Multilevel Analysis</td>
<td>Fabian Wolff, Universität Koblenz-Landau, Germany</td>
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<td>Using representations in the mathematics classroom – Experts’ norms in Germany and Taiwan</td>
<td>Paul Feltes, PH Freiburg, Germany; Anika Dreher, PH Freiburg, Germany; Arke Lindmeier, University of Jena, Germany; Ting-Ying Wang, National Taiwan Normal University, Taiwan; Feng-Jui Hsieh, National Taiwan Normal University, Taiwan</td>
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<tr>
<td>Means, Tails and Fairytales – Fabulous methods to investigate gender differences</td>
<td>Christian Thurn, ETH Zurich, Switzerland; Thomas Braas, ETH Zurich, Switzerland; Michal Berkowitz, ETH Zurich, Switzerland</td>
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**Session I: 13**  
**Time:** 15:45-16:45  
**Location:** Session Room 5

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

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

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<td>Quality of reading instruction in language classrooms: Subject specific analysis of teaching quality</td>
<td>Anke Schmitz, Leuphana Universität Lüneburg, Germany; Fabiana Karstens, University of Cologne, Germany</td>
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<td>Teachers’ knowledge and beliefs about reading comprehension instruction: differences across tracks?</td>
<td>Kim Van Ammel, Ghent University, Belgium; Koen Aesaert, Catholic University of Leuven, Belgium; Rielke Bogaert, Ghent University, Belgium</td>
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<td>Enhancing Students’ Financial Literacy to promote citizenship through the use of variation theory</td>
<td>Ming Fai Pang, The University of Hong Kong, Hong Kong</td>
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Session I: 14 | Time: 15:45-16:45 | Location: Session Room 16

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

**Chair**
Jenny Lenkeit, University of Potsdam, Germany

**Expertise differences in professional vision among prospective teachers**
Ann-Sophie Grub, Saarland University, Germany; Antje Biermann, Saarland University, Germany; Doris Lewalter, Technical University of Munich (TUM), Germany; Roland Bruenken, Saarland University, Germany

**Pre-Service Teachers’ Diagnostic Argumentation: Diagnostic Accuracy Is Not Enough**
Elisabeth Bauer, Ludwig Maximilians-Universität (LMU), Germany; Michael Sailer, LMU Munich, Germany; Jan Klesewetter, LMU University Hospital, Germany; Martin R. Fischer, LMU University Hospital, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany

**Fostering pre-service teachers’ reasoning script by productive failure: Does the grain level matter?**
Theresa Wilkes, Saarland University, Germany; Martin Greisel, University of Augsburg, Germany; Christina Wekerle, University of Augsburg, Germany; Kati Trempler, University of Wuppertal, Germany; Ingo Kollar, University of Augsburg, Germany; Robin Stark, Saarland University, Germany

Session I: 15 | Time: 15:45-16:45 | Location: Session Room 3

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

**Chair**
Astrid Camilla Wiig, University of South-Eastern Norway, Norway

**Development of a measurement instrument for upper primary students’ reading strategy use**
Rielke Bogaert, Ghent University, Belgium; Emmelien Merchie, Ghent University, Belgium; Hide Van Keer, Ghent University, Belgium

**Effect of reminding source relevance or providing prior knowledge in multiple texts comprehension.**
María García Serrano, University of Salamanca, Spain; José Ricardo García Pérez, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain

**Retrieval-, Distributed-, and Interleaved Practice in the Classroom: A Systematic Review**
Sterre Ruitenburg, Open University of the Netherlands, Netherlands; Gino Camp, Welten Institute - Open University of the Netherlands, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Paul Kirschner, Open University of the Netherlands, Netherlands

Session I: 16 | Time: 15:45-16:45 | Location: Session Room 2

**SINGLE PAPER: INFORMAL AND WORKPLACE LEARNING**

**Chair**
Anna-Lena Roos, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland

**The impact of the COVID-19 pandemic on the digital competencies of HRD professionals**
Judith Spiri, University of St.Gallen, Switzerland; Josef Guggemos, University of St.Gallen, Switzerland; Sabine Seufert, University of St.Gallen, Switzerland

**The relationship between emotional competence and team learning behaviours – a systematic review**
Sebastian Gerbeth, University Regensburg, Germany; Elena Stamouli, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany

**The Role of Empowerment and Reflection for Fostering Job Crafting and Innovative Work Behaviour**
Gerhard Messmann, University of Regensburg, Germany

Session I: 17 | Time: 15:45-16:45 | Location: Session Room 15

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

**Chair**
Nathalie Müller Mirza, Université de Genève, Switzerland

**Discussant**
Valérie Tartas, University of Toulouse 2, France

**The discourses elderly persons are aging, learning and living by**
Alekseander Bauclau, University of Belgrade, Serbia; Marina Vidovenovic, University of Belgrade, Serbia

**Learning and development in older persons in situation of fragility: The creation of a day-center**
Tania Zittoun, Institute of psychology and education, Switzerland; Martina Cabra, Institut Psychologie et Education, Université de Neuchâtel, Switzerland; Fabienne Gfeller, Institute of education and psychology, University of Neuchâtel, Switzerland

**Sense-making and tacit knowledge by retirees involved as volunteers in nonprofit associations**
Nathalie Müller Mirza, Université de Genève, Switzerland; Antonio Iannaccone, University of Neuchâtel, Switzerland; Vittoria Cesati Lusso, University of Neuchâtel, Switzerland
### INVITED SYMPOSIUM: SIG 9: LEARNING STUDY IN PROSPECTIVE TEACHER EDUCATION

**Chair**
Angelika Kullberg, University of Gothenburg, Sweden  
**Organiser**
Ake Ingerman, University of Gothenburg, Sweden  
**Discussant**
Ake Ingerman, University of Gothenburg, Sweden  

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<td>How the integration of theory and practice supports pre-service teachers in teaching mathematics</td>
<td>Pernilla Mårtensson, Jönköping University, Sweden; Anna-Lena Ekdahl, Jönköping University, Sweden</td>
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<td>A phenomenological exploration of prospective teachers’ experiences learning about variation theory</td>
<td>Diana Royea, University of British Columbia, Canada</td>
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<td>Supporting teacher educators’ professional learning through Lesson Study</td>
<td>Sui Goei, Windesheim University of Applied Sciences, Netherlands</td>
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### INVITED SYMPOSIUM: EFG: FROM HETEROGENEOUS PERCEPTIONS OF INSTRUCTION AND STUDENT CHARACTERISTICS TO ADAPTIVE TEACHING

**Chair**
Lisa Bardach, University of Tübingen, Germany  
**Organiser**
Lisa Bardach, University of Tübingen, Germany  
**Discussant**
Richard Goellner, University of Tübingen, Germany  

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<tr>
<td>Optimal configurations of student-perceived classroom structure and psychosocial learning climate</td>
<td>Elizabeth Olivier, Université de Montréal, Canada; Alexandre Morin, Substantive-Methodological Synergy Research Laboratory, Concordia University, Canada; Isabelle Plante, Département de didactique, Université du Québec à Montréal, Canada; Véronique Dupéré, École de Psychologie, Université de Montréal, Canada; Isabelle Archambault, Université de Montréal, Canada</td>
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<td>Idiosyncratic Student Perceptions of Academic Support: Relations to Motivation and Achievement</td>
<td>Aleksander Kocaj, Institute for Educational Quality Improvement (IQB), Germany; Claudia Neuendorf, Institute for Educational Quality Improvement (IQB), Germany; Kyle Davison, Department of Education, University of Oxford, United Kingdom</td>
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<td>First assessing then adapting: The role of information processing in accurate teacher judgments</td>
<td>Katharina Schnitzler, Technical University of Munich, Germany; Doris Holzberger, Technical University of Munich (TUM), Germany; Tira Seidel, Technische Universität München, Germany</td>
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### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

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

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<td>‘I have seen it from my home’: Young children’s perceptions of the 2019 social unrest in Hong Kong</td>
<td>Caroline Cohrssen, Education Faculty, Hong Kong; Nimala Rao, The University of Hong Kong, Hong Kong</td>
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<td>Student motivation in teacher learning groups</td>
<td>Emmy Vreeling-Tentier, Open University of the Netherlands, Netherlands; Patrick Sins, Thomas More University of Applied Sciences, Netherlands; Nicky de Vries, iPabo University of Applied Sciences; Vrije Universiteit Amsterdam, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands</td>
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<tr>
<td>How do prospective teachers define the technical term of reflection?</td>
<td>Renata Kiss-Kovacs, University of Szeged, Doctoral School of Education, Hungary</td>
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**Time:** 17:30-18:30  
**Location:** Session Room 1

## SINGLE PAPER: HIGHER EDUCATION

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

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

**Predicting diverse students’ self selection from higher education: A systematic review**  
Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands; Jana Vietze, Erasmus University Rotterdam, Netherlands; Aike Dias-Broens, Erasmus University Rotterdam, Netherlands; Sanne van Herpen, Erasmus University Rotterdam, Netherlands; Reinhilde Pulinx, Erasmus University Rotterdam, Netherlands; Marieke Meeuwisse, Erasmus University Rotterdam, Netherlands

**Relationship between students’ burnout profiles, study processes and academic achievement**  
Nina Katajajuuri, University of Helsinki, Finland; Juuso Henrik Nieminen, University of Eastern Finland, Finland; Jokke Hiltä, University of Helsinki, Finland

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

## SINGLE PAPER: COMPREHENSION OF TEXT AND GRAPHICS

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

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

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

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

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

## SINGLE PAPER: PSYCHOMETRICS

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

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

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

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

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

## SINGLE PAPER: TEACHING AND INSTRUCTION

**Chair**  
Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong

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

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

**Defining mentoring in higher education: a systematic literature review**  
Wendy Nuis, Maastricht University, Netherlands; Simon Beausaert, Maastricht University, Netherlands
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**Time:** 17:30-18:30  
**Location:** Session Room 14

**SINGLE PAPER: MOTIVATION AND SELF-REGULATION**

**Chair**  
Bart Rienties, Open University, United Kingdom

- **Interplay between parents' and children's basic psychological need satisfaction**  
  Vanessa Kurdi, University of Reading, United Kingdom; Noriaki Fukuzumi, Kochi University, Japan; Ryo Ishii, Nara University of Education, Japan; Ayame Tamura, Doshisha University, Japan; Naoki Nakazato, Oita University, Japan; Kazuhito Ottani, Hokkaido University, Japan; Shin-ichi Ishikawa, Doshisha University, Japan; Takashi Suzuki, Kochi University of Technology, Japan; Michiko Sakaki, University of Reading, United Kingdom; Kou Murayama, University of Reading, United Kingdom; Ayumi Tanaka, Doshisha University, Japan

- **Student questioning and perceived teacher support: Online vs in-person classes in the COVID-19 era**  
  Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Stuart Karabenick, University of Michigan, United States

- **Effort and Learning-Related Choices: the Impact of Sympathetic Activity and Ability Beliefs**  
  Smiddy Nieuwenhuis, VU University Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Denise van der Mee, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Nienke van Alstevedt, Vrije Universiteit Amsterdam, Netherlands

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### Session J: 9  
**Time:** 17:30-18:30  
**Location:** Session Room 17

**SINGLE PAPER: QUASI-EXPERIMENTAL RESEARCH**

**Chair**  
Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia

- **Strategical learning with text-picture-combinations: learning strategy or learning technique?**  
  Sabine Schlag, University of Wuppertal, Germany

- **The impact of verbal fluency on the effect of a self-regulated learning training**  
  Nathalie Zetzmann, Saarland University, Germany

- **Impact of Visual Complexity of Instructional Materials on the Split-Attention Effect**  
  Shirong Zhang, Erasmus University Rotterdam, Netherlands; Tatjana Fincke, Erasmus University Rotterdam, Netherlands; Bjorn de Koning, Erasmus University Rotterdam, Netherlands; Fred Paas, Erasmus University Rotterdam/University of Wollongong, Netherlands

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### Session J: 10  
**Time:** 17:30-18:30  
**Location:** Session Room 2

**SINGLE PAPER: VIDEO ANALYSIS**

**Chair**  
Robin Göller, Leuphana University Lueneburg, Germany

- **Analysing pre- and in-service teachers’ feedback practices in a standardized microteaching setting**  
  Marc Kleinkeuch, Leuphana University Lueneburg, Germany; Anna Holstein, Leuphana University Lueneburg, Germany; Kira Elena Weber, Leuphana University Lueneburg, Germany; Christopher Neil Prilop, Leuphana University Lueneburg / University of Hamburg, Germany

- **Unraveling novices’ PPK and PCK professional vision: A comprehensive video-analysis coding scheme**  
  Meg Farrell, Technische Universität München, Germany; Monika Martin, Albert-Ludwigs-Universität Freiburg, Germany; Alexander Renkl, Albert-Ludwigs-Universität Freiburg, Institut für Psychologie, Germany; Werner Rieß, Pädagogische Hochschule Freiburg, Germany; Tina Siedel, Technische Universität München, Germany
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**Time:** 17:30-18:30  
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**SINGLE PAPER: ASSESSMENT, EVALUATION AND QUANTITATIVE METHODS**

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

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<td>Correlation of visual and spatial skills, combinatorial and divergent thinking of adolescents</td>
<td>Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Bernadett Babány, Öbuda University Ybl Miklós Faculty of Architecture, and Civil Engineering and Doctoral School of Education, Eötvös Loránd University, Hungary; Tünde Simon, Hungarian University of Fine Arts Visual Education Department, Hungary; Alisa Tóth, Károly Gáspár University of the Reformed Church in Hungary, Faculty of Teacher Training, and Visual Culture Research Group of the Hungarian Academy of Science and ELTE University, Hungary.</td>
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<td>Evaluating the effectiveness of peer assessment moderation to influence teamwork behavior</td>
<td>Bhavani Sridharan, Australian Catholic University, Australia; David Boud, University of Technology Sydney/ Deakin University, Australia; Jamie Mustard, Deakin University, Australia</td>
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<td>In search of the lingua franca of classroom discourse quality assessments</td>
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### Session J:12  
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**Location:** Session Room 5

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

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

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<td>Yiannis Georgiou, Cyprus University of Technology / Cyprus Center for Environmental Research &amp; Education, Cyprus; Andreas Hadjichambis, Cyprus Center for Environmental Research &amp; Education, Cyprus; Demetra Hadjichambis, Cyprus Center for Environmental Research &amp; Education, Cyprus</td>
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<td>Sibel Akın-Sabuncu, TED University, Faculty of Education, Turkey</td>
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<td>Teaching ESD – factors influencing student teachers’ implementation intention</td>
<td>Elisabeth Wegner, University of Freiburg, Germany; Julia Stössel, University of Freiburg, Germany; Rebecca Baumann, University of Freiburg, Germany</td>
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### Session K:1  
**Time:** 18:45-19:45  
**Location:** Session Room 8

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

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

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

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

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

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

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

**Sharing templates for lesson plans in the educational microblogging tool Talkwall**  
Ingvill Rasmussen, University of Oslo, Norway; Victoria Cosk, University of Cambridge, UK, United Kingdom; Ole Smedal, Department of Education, Norway; Paul Warwick, University of Cambridge, United Kingdom; Kari Anne Rodnes, University of Oslo, Norway
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<td>How to address students’ cognitive and motivational heterogeneity in online learning environments</td>
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<td>Julia Dietrich, Friedrich-Schiller-University Jena, Germany; Franziska Greiner, Friedrich-Schiller University of Jena, Germany; Dorit Weber-Liel, Friedrich-Schiller-University Jena, Germany; Belinda Berweger, Friedrich-Schiller University Jena, Germany; Nicole Kämpfe, Friedrich-Schiller-University Jena, Germany; Baerbel Kracke, University of Jena, Germany</td>
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<td>Live Remote Proctoring with Safe Exam Browser for Written, Oral or Collaborative Online Examinations</td>
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<td>Tobias Halbherr, ETH Zurich, Switzerland; Daniel Schneider, ETH Zurich, Switzerland; Bruno Rütsche, ETH Zurich, Switzerland; Thomas Piendl, ETH Zurich, Switzerland</td>
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<td>Nurit Viesel-Nordmeyer, Technische Universität Dortmund, Germany</td>
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<td>Opportunities of equal education access by considering the relation between language and math skills</td>
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<td>Tanya Evans, University of Virginia, United States; Deanna Kayes, Not applicable, United States; Joerg-Tobias Kuhn, TU Dortmund University, Germany; Jérôme Prado, Centre National de la Recherche Scientifique (CNRS), France; Noelia Sánchez-Pérez, University of Zaragoza, Spain; Kirsten Winkel, University of Mainz, Germany</td>
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<td>Lihong Huang, Oslo Metropolitan University, Norway</td>
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<td>Developing and Nurturing Political Efficacy among Youth</td>
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<td>Eva Kosberg, OsloMet, Norway; Tessa Eriksen Grevle, Oslo Metropolitan University, Norway; Lars Birger Davan, OsloMet, Norway; Grete Vandvik, Save the Children Norway, Norway; Ingrid Aapelund, The European Wergeland Center, Norway; Anders Kjøstvedt, Oslo Metropolitan University, Norway</td>
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<th>Session K: 8</th>
<th>Time: 18:45-19:45</th>
<th>Location: Session Room 1</th>
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<tr>
<td><strong>PANEL DISCUSSION: NEW HORIZONS FOR CITIZENSHIP EDUCATION</strong></td>
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<td>Baruch Schwarz, Hebrew University of Jerusalem, Israel</td>
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<td>New Horizons for Citizenship Education</td>
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<td>Ido Gideon, The Hebrew University of Jerusalem, Israel; Omer Keynan, The Hebrew University of Jerusalem, Israel; Benzi Slåkmon, Tel Aviv University, Israel; Alessio Suri, Università degli Studi di Padova, Italy; Jan Varpanen, University of Tampere, Finland; Anna Söll, University of Gothenburg, Sweden; Asa Makitalo, University of Gothenburg, Sweden</td>
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POSTER PRESENTATION: CITIZENSHIP EDUCATION

**Chair**
Saswati Chaudhuri, University of Jyväskylä, Finland

**Innovative forms of Bildung as an approach for democratic involvement and practice**
Stefanie A. Hillen, Department of Education, Norway; Rainer Christ, Head of Division (ret.) at Ministry for Science, Culture & Further Education, Rhineland-Palatinate, Germany

**Moral Education Curriculum in Italian middle school: a research design**
Liliana Silva, University of Messina, Italy; Maurizio Fabbri, Alma Mater Studiorum University of Bologna, Italy; Ira Vannini, Alma Mater Studiorum Università di Bologna, Italy

**Moral education as a tool for democratic societies: a documentary analysis in Italian middle schools**
Liliana Silva, University of Messina, Italy; Elia Pasolini, Alma Mater Studiorum Università di Bologna, Italy; Maurizio Fabbri, Alma Mater Studiorum Università di Bologna, Italy

**Understanding biodiversity’s conceptions based on student’s analogies**
Laura Leon, University of Geneva, Switzerland; Catherine Audrin, University of Geneva, Switzerland; Emmanuel Sander, University of Geneva, Switzerland

**Cultural Education: A panacea for civic and political engagement in rural areas?**
Lea Fobel, University of Leipzig, Germany; Martin Bödel, University of Leipzig, Germany; Nina Kolleck, University of Leipzig, Germany

**Perception of and coping with multiple institutional discrimination by young women at school**
Eva Dalhaus, University of Education, Freiburg, Germany

POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT

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

**Shaping the future - teachers engagement with Education for Sustainable Development in Norway**
Sonia Felix, NTNU (Norwegian University of Science and Technology), Norway

**The Role Enactment of Academic Developers Supporting Teacher reDesign Teams in a University Setting**
Loulou Detienne, UGENT, Belgium; Tijs Rotsaert, Ghent University, Belgium; Tammy Schellens, Ghent University, Belgium

**Teachers for the futures? Neglected sociomaterial dimension of teacher professionalism**
Ka Lok Cheng, The University of Hong Kong, Hong Kong; Carol Chan, The University of Hong Kong, Hong Kong; Sai Mun Stanley Ho, The University of Hong Kong, Hong Kong; Wing Ho Cathy Shiu, The University of Hong Kong, Hong Kong

**Fostering distributed leadership at schools: A case study in the Asian context**
Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong; Yuen Yi Lo, The University of Hong Kong, Hong Kong

**Expertise development of university teachers in different teacher tasks: A multiple-case study**
Esther van Dijk, Universiteit Utrecht / Hogeschool Utrecht, Netherlands; Jan van Tarwijk, Utrecht University, Netherlands; Marieke van der Schaaf, Universiteit Utrecht, Netherlands; Manon Kluijtmans, UMC Utrecht, Netherlands

**Assessing Teacher Design Teams as a tool for the empowerment of Project Integrated General Subjects**
Tina Gryson, Ghent University, Belgium; Katrien Strubbe, Ghent University, Belgium; Tony Valske, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium

TUESDAY, 24 AUGUST 2021
Session K: 11  
Time: 18:45-19:45  
Location: Session Room 16

POSTER PRESENTATION: SOCIAL AND PEER INTERACTION

Chair  
Anna-Lena Godhe, Malmö University, Sweden

**Exploring Change in Networks Supporting the Deliberate Practice of Popular Musicians**  
Manuel Laengler, University of Regensburg, Germany; Jasperina Brouwer, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Hans Gruber, University of Regensburg, Germany

**Towards Mathematics Education as part of Ethical Citizenship under Covid 19**  
Sikunder Ali, Norwegian University of Science and Technology (NTNU), Norway

**Peer mentoring and learning in eSports: An apprentice’s learning in online in-game interactions**  
Fredrik Rusk, Nord University, Norway; Matilda Stähl, Åbo Akademi University in Vaasa, Finland; Kenneth Silseth, University of Oslo, Norway

**Cooperation in Designated Workplace Learning Settings: A Social Network Study Among Student Nurses**  
Bianca Steffen, University of Paderborn, Germany; Michael Goller, Friedrich Schiller University Jena, Germany

**Argumentation and knowledge construction in higher education: A Vygotskian perspective**  
Ingrid González, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile

**Systemic and individual differences in adolescents’ interest ecologies.**  
Joris Beek, University Utrecht, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands

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

POSTER PRESENTATION: EDUCATIONAL TECHNOLOGY

Chair  
Marita Eva Friesen, University of Education Freiburg, Germany

**Adaptive Educational Games and Their Use of Analytics – A systematic review**  
Maik Beege, Chemnitz University of Technology, Germany; Steve Nebel, Chemnitz University of Technology, Germany; Manuel Ninaus, University of Innsbruck, Austria

**Digital Divide and Online Risks Among Hong Kong Secondary Students**  
Fred H. F. Chan, The University of Hong Kong, Hong Kong; Allan H. K. Yuen, Yew Chung College of Early Childhood Education, Hong Kong

**Eye movements during learning of the molecular shapes with Augmented Reality**  
Fang Ying Yang, National Taiwan Normal University, Taiwan; Hui Yu Wang, National Taiwan Normal University, Taiwan

**Users’ perceptions of adopting new technologies as a guide for tailored LA tool deployment in HE**  
Amanda Sjöblom, Aalto University, Finland; Anni Silvola, University of Oulu, Finland; Jiri Lallimo, Aalto University, Finland

**Real time measuring of individual learners’ self regulation during learning**  
Rick Dijkstra, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Max Hinne, Radboud University Nijmegen, Netherlands

**Increasing College Students’ Depth of Knowledge: Comparing Video and Discussion Board Responses**  
Suzanne Lindt, Midwestern State University, United States; Stacia Miller, Midwestern State University, United States; Christina Janise McIntyre, Midwestern State University, United States
**Session K: 13**

**Time:** 18:45-19:45  
**Location:** Session Room 9

### POSTER PRESENTATION: ASSESSMENT METHODS AND TOOLS

**Chair**  
Nanette Seago, WestEd, United States

- **Predicting Math and Reading Achievement Using Dynamic Testing**  
  Montitz Börnert-Ringleb, Leibniz University Hannover, Germany; Jürgen Wilbert, Universität Potsdam, Germany

- **Automated versus Human Scoring of Student-Generated Models of Scientific Systems**  
  Yujin Tao, University of North Carolina at Chapel Hill, United States; Kihyun “Kelly” Ryoo, University of North Carolina at Chapel Hill, United States; Kathleen McCarroll, University of North Carolina, United States; Ziqian Xu, UNC Chapel Hill, United States; Maria Negroli, University of North Carolina at Chapel Hill, United States

- **Development of a multilevel communication model for higher education**  
  Kristina Walz, Justus-Liebig-Universität Giessen, Germany; Edith Braun, Justus-Liebig-Universität Giessen, Germany

- **Prediction of student outcomes with broadband and narrowband dimensions of behavior**  
  Pawel R. Kulawiak, Universität Potsdam, Germany; Jürgen Wilbert, Universität Potsdam, Germany; Robert Schack, Robert Koch Institute, Germany; Montitz Börnert-Ringleb, Leibniz University Hannover, Germany

- **An Investigation of Item Difficulties to Assess Students Multiple Representations in Work and Energy**  
  Fitria Arifiyanti, University of Szeged, Doctoral School of Education, Hungary; Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary

- **An Emic Approach to Develop Expectancy-Value-Cost Measures of Student Motivation in Rwanda**  
  Dominik Bulla, Oxford University, United Kingdom

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**Session K: 14**

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

### POSTER PRESENTATION: ONLINE LEARNING

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

- **Norwegian Teachers’ Learning in MOOC: Insights into epistemic practices and teacher digital agency**  
  Inna Engeness, Østfold University College, Norway; Magnus Nohr, Østfold University College, Norway

- **Comparison of digital and analog learning environments to foster self-regulated learning**  
  Nathalie Zetzmann, Saarland University, Germany

- **REST: A MOBILE APPLICATION TO EMPOWER TEACHERS’ RESILIENCE**  
  Maria Platidou, University of Macedonia, Greece; Athena Danilioudou, University of Macedonia, Greece; Georgia Diamantisopoulou, University of Macedonia, Greece; Paul Hatzigiannakoglou, University of Macedonia, Greece

- **Secondary school teachers’ online FA practice (during Covid-19 lockdown)**  
  Marijke Vouken, Wageningen University and Research Centre, Netherlands; Judith Gulikers, Wageningen University, Netherlands; Perry den Brok, Wageningen University and Research Centre, Netherlands

- **Investigating the effects of learner characteristics and Instructional Design in online learning**  
  Lisa Holzer-Schulz, University of Regensburg, Germany; Silke Schworm, University of Regensburg, Germany

- **Teachers’ Role in Promoting Self-Regulated Learning Using Digital Media**  
  Désirée Fahmi, Pädagogische Hochschule Schwyz, Switzerland; Doreen Prasse, Schwyz University of Teacher Education, Switzerland; Elena Iten, Pädagogische Hochschule Schwyz, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland
POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT

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

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

Tacit dimensions of religious teacher praxis: a research project
Cristian Simon, University of Padua, Italy

Evaluating New Approaches in Initial Teacher Training — Mentorship programs in School Practice
Stephan Kulakow, University Greifswald, Germany; Diana Raufelder, University Greifswald, Germany; Frances Holzrichter, University Greifswald, Germany

Does Reverse Mentoring promote (pre-service) teacher competence regarding digital media?
Fraziska Baier, Goethe-Universität Frankfurt, Germany; Julia Dohrmann, Goethe-University Frankfurt, Germany; Charlotte Dignath, DIPF Leibniz Institute for Research and Information in Education, Germany

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

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

POSTER PRESENTATION: VOCATIONAL EDUCATION AND WORKPLACE LEARNING

Chair
Gillian Lake, DCU, Ireland

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

Digital learning arrangements in VET within the Swiss pharmaceutical industry
Gaby Walker, Eidgenössisches Hochschulinstitut für Berufsbildung, Switzerland; Antje Barabasch, EHB, Switzerland

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

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

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

Exploring performance feedback experiences of residents working at a COVID-department
Marije Lesterhuis, University of Antwerp/Spaarne Gasthuis, Netherlands; Marijke Eurelings, Spaarne Gasthuis, Netherlands; Marieke van der Schaaf, University Medical Center Utrecht, Netherlands; Reinier Hoff, University Medical Center Utrecht, Netherlands

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

Chair
Hazel Bryan, University of Huddersfield, United Kingdom

Organiser
Eveline Gutzwiller-Helfenfinger, University of Fribourg, Switzerland

Discussant
Paul Thomas, University of Huddersfield, United Kingdom

Muslims, Security and the Question of ‘Prevent’
Shamim Maah, University of Huddersfield, United Kingdom

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

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

Securitised, safeguarding and democratic themes in counter-terrorism education policies
Hazel Bryan, University of Huddersfield, United Kingdom; Lynn Revell, Canterbury Christ Church University, United Kingdom; Andrea Szuksala, Institute of Political Science (IPoS), Univ of Muenster, Germany
### Session L: 1  
**Time:** 09:00-10:00  
**Location:** Session Room 8

#### POSTER PRESENTATION: ARGUMENTATION

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<td>Kati Sormunen, University of Helsinki, Finland</td>
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<tr>
<td>Effects of dialogic education: traces of dialogism in teachers’ small stories</td>
<td>Benzi Slakmon, Tel Aviv University, Israel; Orly Shapiro, Tel Aviv University, Israel</td>
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<td>Students’ arguing skills: impact of teaching beliefs and students’ epistemological understanding</td>
<td>Iris Hulders, Ghent University, Belgium; Michiel Voet, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium</td>
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<td>Reasoning in early years – the role of animations in children’s play with building blocks</td>
<td>Ove Bergersen, Department of Early Childhood Education, Norway</td>
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<td>Text-Based Dialogic Pedagogy in Early Childhood Classrooms: Mapping the Landscape</td>
<td>Ian A.G. Wilkinson, Ohio State University, United States; Leiah Groom-Thomas, Ohio State University, United States; Joowon Lee, Ohio State University, United States</td>
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<td>Students’ Scientific Evaluation of Astronomy Concepts</td>
<td>Archana Dobaria, Temple University, United States; Janelle Bailey, Temple University, United States; Svetla Mohan, University of Maryland, College Park, United States; Timothy Klawon, University of Maryland, College Park, United States; Joshua Jaffe, University of Maryland, College Park, United States; Doug Lombardi, University of Maryland, College Park, United States</td>
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### Session L: 2  
**Time:** 09:00-10:00  
**Location:** Session Room 6

#### POSTER PRESENTATION: COMPREHENSION OF TEXT AND GRAPHICS

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<td>Hye Rin Lee, University of California Irvine, United States</td>
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<tr>
<td>An analytic description of ProjectExpert: A reading program for 9th-grade vocational students</td>
<td>Kim Van Ammel, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Koen Aesaert, Catholic University of Leuven, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<tr>
<td>Development of a progress monitoring tool for upper primary students’ reading comprehension</td>
<td>Rielke Bogaert, Ghent University, Belgium; Koen Aesaert, KU Leuven (BE), Belgium; Emmelien Merchie, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium</td>
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<td>THE CONTRIBUTION OF PROSODY IN ORAL COMPREHENSION IN THE FRAMEWORK OF SIMPLE VIEW OF READING</td>
<td>Natalia Calvo Blázquez, Universidad de Salamanca, Spain; José Ricardo García Pérez, Universidad de Salamanca, Spain; Emilio Sánchez, Facultad de Psicología, Spain</td>
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<td>Multiple-text task-oriented reading in 4th and 6th graders: comprehension vs selection skill</td>
<td>Ruth Villalon, University of Cantabria, Spain; Hector García-Rodicio, University of Cantabria, Spain; Ma. Angeles Melero Zabala, Universidad de Cantabria, Spain; Maria Belen Izquierdo, Universidad de Cantabria, Spain</td>
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<td>Role-Taking in Literary Text Reception and its Relation to Reading Attitudes and Text Comprehension</td>
<td>Nora Heyne, Otto-Friedrich-University Bamberg, Germany; Maximilian Phost, University of Bamberg, Germany; Hanna Heller, Otto-Friedrich-Universität Bamberg, Germany</td>
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<td>Influence of the gender asterisk (“Gendersternchen”) on comprehensibility and interest</td>
<td>Marcus Friedrich, Technische Universität Braunschweig, Germany; Elke Heise, Institut für Pädagogische Psychologie, TU Braunschweig, Germany; Veronika Dörfler, Institut für Pädagogische Psychologie, TU Braunschweig, Germany</td>
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**Session L: 3**  
**Time:** 09:00-10:00  
**Location:** Session Room 2

**POSTER PRESENTATION: READING COMPREHENSION**

**Chair**  
Debra Myhill, University of Exeter, United Kingdom

**Piloting a digital learning environment for differentiated reading materials in diverse classrooms**  
Lisa Palczewski, University of Graz, Austria; Daniela Ender, Private University College of Teacher Education Diocese of Graz-Seckau, Austria; David Wohlfart, Private University College of Teacher Education Diocese of Graz-Seckau, Austria; Susanne Seelen, University of Graz, Austria; Jessica Berger, University of Graz, Institute of Education Research and Teacher Education, Austria; Katharina Prinz, University of Graz, Institute of Education Research and Teacher Education, Austria

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

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

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

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

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

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**Session L: 4**  
**Time:** 09:00-10:00  
**Location:** Session Room 12

**POSTER PRESENTATION: SCIENCE EDUCATION**

**Chair**  
Uwe Maier, University of Education Schwäbisch Gmünd, Germany

**Knowledge For Everyone: Translating Psychological Evidence Into Plain Language**  
Martina Kerwer, Leibniz Institute for Psychology (ZPID), Germany; Marlene Stöl, Leibniz Institute for Psychology (ZPID), Leibniz Institute for Resilience Research (LIR), Germany; Anita Chasioti, Leibniz Institute for Psychology (ZPID), Germany; Klaus Lieb, Leibniz Institute for Resilience Research (LIR), Germany; Michael Bosnjak, Leibniz Institute for Psychology (ZPID), Germany

**Productive and argumentative discussions in science in Chile: practices, needs, and challenges**  
Florencia Gomez Zaccarelli, Pontificia Universidad Católica de Chile, Chile; Natalia Candelo, Pontificia Universidad Católica de Chile, Chile; Belén Hernández, Pontificia Universidad Católica de Chile, Chile

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

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

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

**Task perception, task performance, and learning outcomes in simulation-based inquiry learning**  
Tomi Jaakkola, Tampere University, Finland; Koen Veermans, University of Turku, Finland
Session L: 5  Time: 09:00-10:00  Location: Session Room 5

POSTER PRESENTATION: ATTITUDES AND BELIEFS

Chair
Mark White, University of Oslo, Norway

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

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

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

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

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

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

Session L: 6  Time: 09:00-10:00  Location: Session Room 7

POSTER PRESENTATION: STUDENT LEARNING AND PEER INTERACTION

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

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

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

The Relation of Representational Competence and Conceptual Knowledge about Electromagnetism
Sarah Malone, Saarland University, Germany; Peter Edelsbrunner, ETH Zurich, Switzerland; Andreas Lichtenberger, ETH Zurich, Switzerland; Stefan Küchemann, TU Kaiserslautern, Germany; Jochen Kuhn, TU Kaiserslautern, Physics Education Research Group, Germany; Andreas Vaterlaus, ETH Zurich, Switzerland; Elisabeth Stern, ETH Zurich, Switzerland; Roman Schmid, ETH Zurich, Switzerland; Ralph Schumacher, ETH Zurich, Switzerland; Kristin Altmeyer, Saarland University, Germany; Roland Bruenken, Saarland University, Germany

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

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

Stress management and resilience fostering in students’ curricula: Implementation of an intervention
Natalie Peters, TU Dresden, Fakultät Wirtschaftswissenschaften, Germany
### Session L: 7

**Posters Presentation: Teaching and Instruction**

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

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

2. **Critical Thinking in Norwegian Teacher Education (CT-TED)**  
   Leila Ferguson, Kristiania University College, Norway; Jarmila Bubikova-Moan, Kristiania University College, Norway; Magne Skibsted Jensen, Ostfold University College, Norway

3. **Identifying and Implementing Digital Teaching-Learning-Scenarios in Pre-Service Teacher Education**  
   Nadine Schlomske-Bodenstein, Karlsruhe University of Education, Germany; Bernhard Standl, Karlsruhe University of Education, Germany

4. **Self-efficacy of pre-service teachers on writing instruction in inclusive classrooms**  
   Sandra Schwinnung, University of Wuppertal, Germany; Sarah Jagemann, Bergische Universität Wuppertal, Germany

5. **Critical Thinking as a Tool in Education for Sustainable Development**  
   Eleni Sinakou, University of Antwerp, Belgium; Panagiota Axelithioti, Sokoop Inc, Greece

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

### Session L: 8

**Posters Presentation: Collaborative Learning**

**Chair:** Franziska Vogt, St.Gallen University of Teacher Education, Switzerland

1. **Investigating the relation of situational self-efficacy and participation in group level regulation**  
   Sara Ahola, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland; Hanna Janvelä, University of Oulu, Finland

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

3. **Sequences of participatory roles and metacognitive regulation during collaborative learning**  
   Olli-Pekka Heinimäki, University of Turku, Finland; Tuike Iiskala, University of Turku, Finland

4. **Studying psychophysiological conditions enabling cognitive regulation in collaborative learning.**  
   Márta Sobocinski, University of Oulu, Finland; Andy Nguyen, University of Oulu, Finland; Sanna Janvelä, University of Oulu, Finland

5. **Professional Competence and Development of Bilingual Education Teachers**  
   Luisa Scherzinger, University of Tübingen, Germany; Taiga Brahm, University of Tübingen, Germany

6. **Solving problems collaboratively, but remotely in higher education: Relevance of pedagogical design**  
   Pirkko Siklander, University of Oulu, Finland; Niina Impiö, University of Oulu, Finland; Bhanva Rawat, University of Oulu, Finland
<table>
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<tr>
<th>Session L: 9</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 1</th>
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<tbody>
<tr>
<td><strong>POSTER PRESENTATION: SELF-REGULATION AND SELF-EFFICACY</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Ania Tadlaou-Brahmi, HEP Fribourg, Switzerland</td>
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<tr>
<td><strong>Professional Vision Practices in Video Intervention: Can Self-Regulated Learning Make a Difference?</strong></td>
<td>Orna Heaysman, School of Education, Bar-Ilan University, Israel; Bracha Kramarski, Bar-Ilan University, Israel</td>
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<tr>
<td><strong>Teachers' Self-regulation in different disciplines: Do authentic experiences matter?</strong></td>
<td>Bracha Kramarski, Bar-Ilan University, Israel; Orna Heaysman, School of Education, Bar-Ilan University, Israel</td>
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<tr>
<td><strong>Child’s Self-Regulated Learning (SRL) and Mother’s SRL, Metaprocesses, and External Regulation</strong></td>
<td>Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Lihi Sarfaty, University of Haifa, Faculty of Education, Israel</td>
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<tr>
<td><strong>What are we really aiming for? Identifying concrete student behavior in formative assessment</strong></td>
<td>Judith Gulikers, Wageningen University, Netherlands; Marijke Veugen, Wageningen University and Research Centre, Netherland; Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands</td>
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<tr>
<td><strong>Oral feedback in the foreign language classroom: Student perceptions and the role of proficiency</strong></td>
<td>Yoshiyuki Nakata, Doshisha University, Japan; W. L. Quint Oga-Baldwin, Waseda University, Japan; Atsuko Tsuda, Hyogo Prefectural Kawanshi Midori High School, Japan</td>
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<tr>
<td><strong>Efficacy, Autonomy, and Clarity: Fostering Agentic Engagement Online</strong></td>
<td>Jeff Vomund, George Mason University, United States; Angela Miller, George Mason University, United States; Melissa Broeckelman-Post, George Mason University, United States</td>
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<th>Session L: 10</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 13</th>
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<tbody>
<tr>
<td><strong>POSTER PRESENTATION: WRITING AND LITERACY</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Eleftheria Gonida, Aristotle University of Thessaloniki, Greece</td>
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<tr>
<td><strong>Empowering Secondary School Students’ Argumentative Writing Skills.</strong></td>
<td>Yana Landrieu, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium</td>
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<tr>
<td><strong>Teaching (academic and professional) writing for participation in society</strong></td>
<td>Vibeke Christensen, University of Southern Denmark, Denmark; Peter Hobel, Institute for the Studies of Culture, University of Southern Denmark, Denmark</td>
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<tr>
<td><strong>Academic writing, feedback and Disciplinary Writing Tutors</strong></td>
<td>Peter Hobel, Institute for the Studies of Culture, University of Southern Denmark, Denmark; Vibeke Christensen, University of Southern Denmark, Denmark</td>
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<tr>
<td><strong>Concessive text procedures as an indicator of writing competency in 4th grade persuasive texts</strong></td>
<td>Veronika Österbauer, IGS, Austria; Antonia Bachinger, Federal Institute for the Quality Assurance in the Austrian School System, IGS, Austria; Gabrielle von Eichhorn, Institut des Bundes für Qualitätsicherung im österreichischen Schulwesen (IGS), Austria; Michael Prof. Dr. Krelle, Chemnitz University of Technology, Germany</td>
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<td><strong>An Investigation into Measures of Linguistic Accuracy in Written Corrective Feedback Research</strong></td>
<td>Nang Kham Thi, University of Szeged, Doctoral School of Education, Hungary</td>
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<td><strong>Do image interpretation models foster students’ historical thinking competencies?</strong></td>
<td>Kevin van Loon, PH FHNW, Switzerland</td>
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Session L: 11 | Time: 09:00-10:00 | Location: Session Room 18

**POSTER PRESENTATION: EARLY CHILDHOOD EDUCATION**

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

**Early Childhood Educator Individual And Collaborative Job Crafting**
Janine Hostettler Schärer, PHSG, Switzerland

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

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

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

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

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

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

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

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

**Participating in an academic lifelong learning course affects self-efficacy for teaching adults**
Nurit Gur-Yaish, Oranim Academic College of Education, Israel; Ronit Herscu-Kluska, Oranim Academic College of Education, Israel

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

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

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

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

**Research starting points of internship integrated practitioner research in initial teacher education**
Katharina Haissenberger, Pädagogische Hochschule Steiermark, Austria; Sabine Reesner, Pädagogische Hochschule Steiermark, Austria; Georg Krammer, University College of Teacher Education Styria, Austria; Marlies Malischek-Jauk, Pädagogische Hochschule Steiermark, Austria

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

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

**Developing Classroom Management Strategies in a Virtual-Reality Kindergarten Classroom**
Jolien Mouw, University of Groningen / GION, Netherlands; Marjon Fokkens-Bruinsma, University of Groningen, Netherlands; Andrea Snippe, University of Groningen / GION, Netherlands
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<th>Session L: 14</th>
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<th>Location: Session Room 11</th>
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<tr>
<td><strong>ICT DEMONSTRATION: REAL-TIME CAPTURING OF EMOTIONAL AND BEHAVIORAL STUDENT ENGAGEMENT TRAJECTORIES DURING CLASS</strong></td>
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<td>Real-time capturing of emotional and behavioral student engagement trajectories during class</td>
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<td>Jorgos Papastefanou, Bodymonitor Institute for physiological emotion analyses, Germany</td>
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<th>Location: Session Room 14</th>
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<tr>
<td><strong>ICT DEMONSTRATION: RECO: A SHINY APP FOR AUTOMATICALLY CODING SHORT TEXT RESPONSES IN ASSESSMENTS</strong></td>
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<td>ReCo: A Shiny App for Automatically Coding Short Text Responses in Assessments</td>
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<td>Fabian Zehner, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Centre for International Student Assessment (ZIB), Germany; Nico Andersen, DIPF</td>
<td>Leibniz Institute for Research and Information in Education, Germany</td>
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<th>Session L: 16</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 17</th>
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<tr>
<td><strong>ICT DEMONSTRATION: THE E-LEARNING SETTING CIRCLE: A DIGITAL TOOL GUIDING E-LEARNING PROJECTS AND RESEARCH</strong></td>
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<tr>
<td>The E-Learning Setting Circle: A Digital Tool Guiding E-Learning Projects and Research</td>
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<td>Marco Rütth, University of Cologne, Germany; Kai Kaspar, University of Cologne, Germany</td>
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<th>Session L: 17</th>
<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SPONSORED SESSION: MDPI - EDUCATION SCIENCES</strong></td>
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<td>MDPI - Education Sciences</td>
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<td>Kelum Gamage, University of Glasgow, UK, United Kingdom; Neil Gordon, University of Hull, United Kingdom; Nora McIntyre, University of Southampton, United Kingdom; Milica Milesev, MDPI, Switzerland, Serbia</td>
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<th>Session L: 18</th>
<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>INVITED SYMPOSIUM: SIG 14: DEVELOPING CONNECTIVITY BETWEEN EDUCATION AND WORK: PRINCIPLES AND PRACTICES</strong></td>
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<td>Chair</td>
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<tr>
<td>Ilya Zitter, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands</td>
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| Organiser |
| Simon Beausaert, Maastricht University, Netherlands |

| Discussant |
| Eva Kyndt, University of Antwerp, Belgium |

**Teachers’ use of digital boundary objects to connect school and workplace-based learning** |
Nina Kilbrink, Karlstad University, Sweden; Ann-Britt Enrothsson, Karlstad University, Sweden; Annelie Andersen, Karlstad University, Sweden; Annica Adefors, Karlstad University, Sweden |

**Collaborative Communication between Teachers and Company Supervisors for Integrative Teaching** |
Viviana Sappa, Swiss Federal Institute for Vocational Education and Training, Switzerland; Sarojni Choy, Griffith University, Australia; Carmela Aprea, University of Mannheim, Germany |

**Pedagogic strategies at the boundary of school and work** |
Anne Khaled, HU University of Applied Sciences, Netherlands; Marco Mazereeuw, NHL Stenden University of Applied Sciences, Netherlands; Machiel Bouwmans, Utrecht University of Applied Sciences, Netherlands |

**Keynotes II: 1** | Time: 10:45-11:45 | Location: Auditorium B |
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<tr>
<td><strong>EARLY KEYNOTE SESSION: LEARNERS’ RESOURCES AS MODERATORS FOR INSTRUCTIONAL DESIGN, SELF-REGULATION AND COGNITIVE LOAD</strong></td>
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<tr>
<td>Chair</td>
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<td>Sanna Järvelä, University of Oulu, Finland</td>
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| Learners’ resources as moderators for instructional design, self-regulation and cognitive load |
| Tina Seufert, Ulm University, Germany |
### EARLY KEYNOTE SESSION: LEARNING LIVES AND LIVED CITIZENSHIP - TRAJECTORIES OF PARTICIPATION AND FUTUREMAKING

**Chair**
Roger Säljö, University of Gothenburg, Sweden

**Learning Lives and Lived Citizenship - trajectories of participation and futuremaking**
Ola Erstad, University of Oslo, Norway

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### SYMPOSIUM: MEASURING DEMOCRATIC CITIZENSHIP AT SCHOOL: ONE MEASURE FITS ALL?

**Chair**
Anke Munniksma, University of Amsterdam, Netherlands

**Discussant**
Anke Munniksma, University of Amsterdam, Netherlands

**Measuring Citizenship Competences: An Assessment of Measurement Invariance**
Lianne Hoek, University of Amsterdam, Netherlands; Anke Munniksma, University of Amsterdam, Netherlands; Anne Bert Dijkstra, University of Amsterdam, Netherlands

**Acceptance and Conflict Resolution: How Can Peer Relations Help to Measure Democratic Citizenship?**
Minke Krijnen, Utrecht University, Netherlands; Tim Mainhard, Utrecht University, Netherlands; Bjorn Warsink, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands

**Prioritising Practice: What Classroom Practices Teach us about the School's Role in Citizenship**
Margot Joris, KU LEUVEN, Belgium; Orhan Agirdag, KU Leuven / University of Amsterdam, Belgium; Maarten Simons, KU LEUVEN, Belgium

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### SYMPOSIUM: MEASURING TEACHING QUALITY: WHAT MEASUREMENT MODEL SHOULD BE APPLIED?

**Chair**
Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland; Jan Hochweber, St. Gallen University of Teacher Education, Switzerland

**Organiser**
Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland

**Discussant**
Marcus Pietsch, Leuphana University Lueneburg, Germany

**Are student perceptions of teaching quality reliable measures for evaluating teaching quality?**
Hannah Bijlsma, University of Twente, Netherlands; Cees Glas, University of Twente, Netherlands; Adrie Vischer, Univ. of Twente, Netherlands

**Measuring teaching quality domains: second-order factors or latent composite scores?**
Wolfgang Wagner, University of Tubingen, Germany; Richard Goellner, University of Tuebingen, Germany; Ann-Kathrin Jaekel, University of Tuebingen, Germany; Norman Rose, Universitätsklinikum Jena, Germany

**Teaching quality: a network of causally interacting quality aspects?**
Giang Pham, Pädagogische Hochschule St.Gallen, Switzerland

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### SYMPOSIUM: HOW TO INTEGRATE RETRIEVAL PRACTICE INTO EXISTING EDUCATIONAL ACTIVITIES

**Chair**
Julian Roelle, Ruhr University Bochum, Germany

**Organiser**
Julian Roelle, Ruhr University Bochum, Germany

**Discussant**
Andrew Butler, Washington University, United States

**Effects of Enriching Instructional Video Learning with Retrieval Practice Before or After Restudy**
Vincent Hoogerheide, Utrecht University, Netherlands; Twan van der Zanden, Utrecht University, Netherlands; Andreas Lachner, University of Tübingen, Germany; Gesa van den Broek, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Question Generation and Retrieval Practice – Sequencing Open and Closed Book Enhances Learning**
Timo Endres, University of Freiburg, Germany; Vincent Hoogerheide, Utrecht University, Netherlands; Valeria Guidi, University of Freiburg, Germany; Tamara Van Gog, Utrecht University, Netherlands; Alexander Renkl, University of Freiburg, Germany

**Generating Answers to Prequestions Supplements the Benefits of Retrieval Practice**
Shana Carpenter, Iowa State University, United States

**Retrieval Practice Before Generative Learning Exceeds Generative Learning Before Retrieval Practice**
Linda Frosse, Ruhr University Bochum, Germany; Rebecca Krebs, Ruhr University Bochum, Germany; Jasmin Moring, Ruhr University Bochum, Germany; Niklas Obergassel, Ruhr University Bochum, Germany; Julia Waldeyer, Ruhr University Bochum, Germany; Julian Roelle, Ruhr University Bochum, Germany

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### Session M: 4  
**Time:** 12:00-13:00  
**Location:** Session Room 9

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Interdisciplinary Collaboration in the Agder Project**  
Ingunn Størksen, University of Stavanger, Norway

**DigiTaktik: A Digital Tool for Learning and Formative Feedback in the Context of Early Math**  
Susanne Kjällander, Stockholm University, Sweden; Sofia Frankenberg, Stockholm University, Sweden; Agneta Guiz, Lund University, Sweden; Magnus Haake, Lund University, Sweden; Eric Pakulak, Stockholm University, Sweden

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### Session M: 6  
**Time:** 12:00-13:00  
**Location:** Session Room 17

**SYMPOSIUM: READING PROCESSES IN TASK-ORIENTED READING: RELEVANCE OF STRATEGIES AND READING PATTERNS**

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

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

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

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

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

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

**Self-regulatory activities for task-oriented reading in higher education**  
Mariska Oekkinga, Rotterdam University of Applied Sciences, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands
### Session M: 7
**Time:** 12:00-13:00  
**Location:** Session Room 13

**SYMPOSIUM: RECENT RESEARCH ON CLASSROOM DISTURBANCES**

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

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

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

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

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

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

### Session M: 8
**Time:** 12:00-13:00  
**Location:** Session Room 5

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

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

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

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

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

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

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

- **Methodological challenges in analysing values in students’ interactions**  
  Gabriel Pallarès, CNRS - I3 - Telecom ParisTech, France; Talli Cedar, The Hebrew University of Jerusalem, Israel; Michael Baker, CNRS - Telecom ParisTech, France; Françoise Delhommee, CNRS - Telecom ParisTech, France; Lucas Bietti, Department of Psychology, NTNU, Norway; Baruch Schwarz, Hebrew University of Jerusalem, Israel

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

**SYMPOSIUM: THE CLASSROOM AS A STIMULATING CONTEXT FOR STUDENTS’ COGNITIVE DEVELOPMENT**

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

**Discussant**  
Petra Warreyn, Ghent University, Belgium

- **The Role of Teacher-Child Interactions on Executive Function Development in Toddlerhood**  
  Sümeyye Köpçü, Utrecht University, Netherlands; Hanna Muider, Utrecht University, Netherlands; Eva van de Weijer-Bergsma, Utrecht University, Netherlands; Elma Blom, University Utrecht, Netherlands

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

- **Myth or truth – Does sitting close to the teacher support students’ learning and self-regulation?**  
  Friederike Blume, DIPF | Leibniz Institute for Research and Information in Education, Germany; Ann Christine Ehls, University of Tübingen, Germany; Annette Conzelmann, University of Tübingen, Germany; Caterina Gawrilow, University of Tübingen, Germany
### SYMPOSIUM: UNDERSTANDING AND PROMOTING STUDENTS' ORAL PARTICIPATION IN CLASS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Effects on collaboration on students' hand raising</th>
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<tr>
<td>Susanne Jurkowski, Universität Erfurt, Germany</td>
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<td>Lukas Mundelsee, University of Erfurt, Germany</td>
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<td>Organiser</td>
<td>Course characteristics enhancing students' oral participation in higher education</td>
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<td>Lukas Mundelsee, University of Erfurt, Germany</td>
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<td>Discussant</td>
<td>Motivational and cognitive correlates of student hand raising</td>
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<tr>
<td>Christine Pauli, University of Fribourg, Switzerland</td>
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</table>

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

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

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

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

### SYMPOSIUM: USING VIGNETTES IN MATHEMATICS TEACHER EDUCATION AND RESEARCH: THE ROLE OF KNOWLEDGE AND BELIEFS

<table>
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<tr>
<th>Chair</th>
<th>Vignettes as tools to enhance pre-service teachers' noticing</th>
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<tr>
<td>Karen Skilling, University of Oxford, United Kingdom</td>
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<td>Marita Eva Friesen, University of Education Freiburg, Germany</td>
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- **Vignettes as tools to enhance pre-service teachers' noticing**
  - Pedro Ivars, University of Alicante, Spain; Ceneida Fernández, University of Alicante, Spain; Salvador Lliñares, University of Alicante, Spain

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

- **What role do different knowledge facets play when teachers analyse mathematics classroom situations?**
  - Marita Eva Friesen, University of Education Freiburg, Germany; Sebastian Kuntze, Ludwigshburg University of Education, Germany

### SYMPOSIUM: EMOTIONAL AND MOTIVATIONAL PROCESSES AND THEIR ROLE FOR SELF-REGULATION OF LEARNING

<table>
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<tr>
<th>Chairs</th>
<th>Interplay of affect and metacognitive regulation in collaborative science learning</th>
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<tr>
<td>Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Thea Peetsma, University of Amsterdam, Netherlands</td>
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<td>Thea Peetsma, University of Amsterdam, Netherlands; Thea Peetsma, University of Amsterdam, Netherlands</td>
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</table>

- **Interplay of affect and metacognitive regulation in collaborative science learning**
  - Tuuke Isikala, University of Turku, Finland; Tarja Piitannen, University of Turku, Finland; Marja Vauras, University of Turku, Finland; Simone Vulet, Murdoch University, Australia

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

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

- **The relationship between eudaimonic and hedonic motives and self-regulated learning**
  - Bernhard Schmitz, TU Darmstadt, Germany; Björn Mattes, Technical University of Darmstadt, Germany
SYMPOSIUM: "IS THIS CREDIBLE INFORMATION?" INVESTIGATIONS ON THE EVALUATION OF SCIENTIFIC ONLINE INFORMATION

**Chair**
Friederike Hendriks, TU Braunschweig, Germany

**Organisers**
Friederike Hendriks, TU Braunschweig, Germany; Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany

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

**Information easiness and prior beliefs influence evaluation of scientific online information**
Lisa Scharrer, Goethe University Frankfurt, Germany; Rainer Bromme, University of Münster, Germany; Marc Stadtfleth, University of Bochum, Germany

“Mask wearing might be effective!” Does uncertainty communication affect source evaluation?
Inse Janssen, Westfälische Wilhelms-Universität Münster, Germany; Friederike Hendriks, TU Braunschweig, Germany; Regina Jucks, WWU Münster, Germany

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

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

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

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

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

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

**Teachers’ instructional support and students’ peer relationships quality**
Sigrun K. Ertesvåg, University of Stavanger, Norway; Trude Havik, University of Stavanger, Norway; Maran Stalh Lorang, University of Stavanger, Norway; Grote Sørensen Vaaalnd, University of Stavanger, Norway

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

**The role of teacher–child interactions for teacher adjustment: An intervention study**
Karine Verschueren, KU Leuven, Belgium; Caroline Vanpraeyveldt, KU Leuven, Belgium; Hilde Colpin, KU Leuven, Belgium

SYMPOSIUM: ESPRESSO INVITED SYMPOSIUM: E-CER: IN SEARCH OF THE ‘GOOD’ TEACHER: PERSPECTIVES ON TEACHER COMPETENCE

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

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

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

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

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

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

**Standardized Mixed-Reality Simulation Tasks: A New Measurement Approach to Improving Teaching**
Courtney Bell, University of Wisconsin, United States; Geoffrey C. Phelps, Educational Testing Service, United States; Barbara Wren, Educational Testing Service, United States; Daniel McCaffrey, Educational Testing Service, United States; Margaret M. Witherspoon, Educational Testing Service, United States
**INVITED SYMPOSIUM: SIG 24: DEVELOPING RESEARCH AND ACADEMIC CAREERS IN UNCERTAIN TIMES**

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

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

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

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

Remote doctoral supervision experiences: challenges and affordances
Erika Löfström, University of Helsinki, Finland; Søren Bengtsen, Aarhus University, Denmark; Solveig Comén, University of Helsinki, Finland; Faye He, Peking University, China; Kelsey Inouye, Oxford University, United Kingdom; Shosh Leshem, Kibbutzim College of Education, Israel, Israel; Irina Lokhtina, University of Central Lancashire Cyprus, Cyprus; Michèle McGinn, Brock University, Canada; Matilda Sase, Berne State University, Nigeria; Gina Waker, University of Bath, United Kingdom

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

**SESSION M: 17**

**Time: 12:00-13:00**

**Location: Session Room 6**

**WORKSHOP: GRASPING BOUNDARY CROSSING COMPETENCE DEVELOPMENT: HOW TO MEASURE LEARNING ACROSS PRACTICES?**

Grasping Boundary Crossing Competence Development: How to Measure Learning Across Practices?
Carla Oonk, Wageningen University, Netherlands; Judith Gulikers, Wageningen University, Netherlands; Karen Fortuin, Wageningen University, Netherlands; Perry den Brok, Wageningen University, Netherlands; Cassandra Tho, Wageningen University, Netherlands; Nynke Post-Uiterweer, Wageningen University, Netherlands; Arnold Bregt, Wageningen University, Netherlands

**SESSION N: 1**

**Time: 15:45-16:45**

**Location: Session Room 2**

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

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

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

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

Exploring Student Perceptions of Differentiated Instruction
Marinke van Goet, University of Twente, Netherlands; Trynke Keuning, University of Twente, Netherlands

A comparison of the teaching quality perspectives of school inspectors, students, and teachers
Adrie Vischer, Univ. of Twente, Netherlands; Hannah Bijlsma, University of Twente, Netherlands
### Session N: 2

**SYMPOSIUM: SITUATIONAL INTEREST: CHANGE, DEVELOPMENT, AND OUTCOMES ACROSS DIFFERENT CONTEXTS**

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<th>Chair</th>
<th>Katarina Nuutila, University of Helsinki, Finland</th>
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<td>Organiser</td>
<td>Luke K. Fryer, The University of Hong Kong, Hong Kong</td>
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<td>Discussant</td>
<td>K. Ann Renninger, Swarthmore College, United States</td>
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**Mutual relationships between the levels of and changes in interest and self-efficacy during a task**  
Markku Niemivirta, University of Eastern Finland, Finland; Katarina Nuutila, University of Helsinki, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Turku, Finland; Györgyver Molnar, University of Szeged, Hungary

**On-task expectancy, value, and achievement emotions: A combination of two Expectancy-Value-Models**  
Belinda Berweger, Friedrich-Schiller-University Jena, Germany; Sebastian Born, University Hospital Jena, Center for Sepsis Control and Care, Germany; Julia Dietrich, Friedrich-Schiller-University Jena, Germany

**The course interest that tasks built**  
Luke K. Fryer, The University of Hong Kong, Hong Kong; Alex Shrum, The University of Hong Kong, Hong Kong; Evan Pickett, The University of Hong Kong, Hong Kong; George Akom, The University of Hong Kong, Hong Kong; Timothy Wotherspoon, The University of Hong Kong, Hong Kong

**Repeat Visitors: A Situation Designed to Examine the Earliest Phases of Interest Development**  
Amanda Durik, Northern Illinois University, United States; Sarah Post, Cornerstones of Science, United States; Audra P. Jensen, Northern Illinois University, United States; Joy Pawirosetiko, Northern Illinois University, United States; Cody Gibson, Northern Illinois University, United States; Paul B. Dusenbery, Space Science Institute, United States

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### Session N: 3

**SYMPOSIUM: COMORBIDITY OF LEARNING DISORDERS**

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<tr>
<th>Chair</th>
<th>Christin Schwenk, TU Dortmund University, Germany</th>
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<td>Organiser</td>
<td>Elien Vanluydt, KU Leuven - University of Leuven, Belgium</td>
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<td>Discussant</td>
<td>Bert De Smedt, KU Leuven, Belgium</td>
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**Predicting learning disabilities status: The role of early domain-general and domain-specific skills**  
Cristina Rodríguez, Universidad de La Laguna (1) Universidad Católica de la Santísima Concepción (2), Chile; Roberto Ferreira, Pontificia Universidad Católica de Chile, Chile

**Insight into the relationship between specific and comorbid learning difficulties – a meta-analysis**  
Nuri T. Nordmeyer, Technische Universität Dortmund, Germany; Julia Reuber, Zentrum für systemische Schulberatung (school psychology) Hamm, Germany; Jörg-Tobias Kuhn, TU Dortmund University, Germany; Kristina Moll, University Hospital, Ludwig Maximilians-University Munich, Germany; Heinz Holling, University of Muenster, Germany; Christian Dobel, University Hospital Jena, Germany

**Comorbidity overlaps between ADHD and Specific Learning Disorders**  
Irene C. Mammarella, University of Padova, Italy; Giula Crisci, University of Padova, Italy; Ramona Cardillo, University of Padova, Italy; Sara Caviola, University of Padova, Italy

**Effects of tablet-based math and reading interventions in children with comorbid learning disorders**  
Christin Schwenk, TU Dortmund University, Germany; Heike Mehlhase, University Hospital, Ludwig Maximilians-University Munich, Germany; Ann-Katrin Schulz, TU Dortmund University, Germany; Teresa Mann, TU Dortmund University, Germany; Jörg-Tobias Kuhn, TU Dortmund University, Germany; Kristina Moll, University Hospital, Ludwig Maximilian-University Munich, Germany; Gerd Schulte-Körne, University Hospital, Ludwig-Maximilian-University Munich, Germany

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### Session N: 4

**SYMPOSIUM: INSIGHTS INTO THE PRECURSORS OF RELATIONAL REASONING**

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<th>Chair</th>
<th>Elien Vanluydt, KU Leuven - University of Leuven, Belgium</th>
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<td>Discussant</td>
<td>Matthew Ingils, Loughborough University, United Kingdom</td>
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**Fostering multiplicative reasoning in early math education: A case study**  
Xenia Varvakoussi, University of Ioannina, Greece; Georgia Pitta, University of Ioannina, Greece; Maria Kaldrimidou, x, Greece

**Early quantitative reasoning: The association between patterning and proportional reasoning**  
Elien Vanluydt, KU Leuven - University of Leuven, Belgium; Nore Wijns, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Wim Van Dooren, KU LEUVEN, Belgium

**We can count on curricular math for probability, but what else might be helpful?**  
Anne-Sophie Supply, KU LEUVEN, Belgium; Nore Wijns, KU Leuven, Belgium; Wim Van Dooren, KU LEUVEN, Belgium; Patrick Onghena, KU LEUVEN, Belgium

**Guiding students’ attention towards multiplicative relations around them: A classroom intervention**  
Saku Määttä, University of Turku, Finland; Minna M. Hannula-Sormunen, University of Turku, Finland; Hilma Halmé, University of Turku, Finland; Jake McMillan, University of Turku, Finland
### Session N: 5 | Time: 15:45-16:45 | Location: Session Room 10

**SYMPOSIUM: IMPROVING STUDY SUCCESS IN HIGHER EDUCATION BY SELF-ASSESSMENTS FOR INFORMED STUDY DECISIONS**

**Chair**  
Laurie Delnoij, Open University, Netherlands

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

**Discussant**  
Edith Braun, Justus-Liebig-Universität Giessen, Germany

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

2. **Designing an Online Self-Assessment for Informed Study Decisions in Higher Online Education**  
Laurie Delnoij, Open University, Netherlands; Josi Janisssen, Open University of the Netherlands, Netherlands; Kim Dirkx, Open University, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands

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

### Session N: 6 | Time: 15:45-16:45 | Location: Session Room 12

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

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

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

**Discussant**  
Anneke Timmermans, University of Groningen, Netherlands

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

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

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

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

### Session N: 7 | Time: 15:45-16:45 | Location: Session Room 13

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

**Chair**  
Nore Wijns, KU Leuven, Belgium

**Discussant**  
Camilla Björklund, University of Gothenburg, Sweden

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

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

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

4. **Development of a repeating patterning test from a bimodal perspective**  
Viktor Werner, Universität Hamburg, Germany; Häneli-Faulhaber Barbara, Universität Hamburg, Germany
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<th>Time: 15:45-16:45</th>
<th>Location: Session Room 7</th>
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<td><strong>SYMPOSIUM: WHAT COUNTS? PICTURE BOOK CHARACTERISTICS IN THE DOMAIN OF EARLY MATHEMATICS</strong></td>
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<td><strong>Chair</strong></td>
<td>Colleen Uscianowski, University of Cincinnati, United States</td>
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<td><strong>Organisers</strong></td>
<td>Joke Torbeys, KU Leuven, Belgium; Colleen Uscianowski, University of Cincinnati, United States</td>
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<td><strong>Discussant</strong></td>
<td>Esther Brunner, Pädagogische Hochschule Thurgau, Switzerland</td>
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<td><strong>An opportunity for math learning: A feature analysis of math language in popular children’s books</strong></td>
<td>Colleen Uscianowski, University of Cincinnati, United States</td>
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<tr>
<td><strong>Young children’s mathematical picture books: content and structural features</strong></td>
<td>Suzanne Splinter, Katholieke Universiteit Leuven, Belgium; Emke Op’t Eynde, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Joke Torbeys, KU Leuven, Belgium</td>
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<tr>
<td><strong>Teachers’ awareness of the learning-supportive characteristics of picture books in early mathematics</strong></td>
<td>Ilida Elia, University of Cyprus, Cyprus; Van den Heuvel-Panhuizen Van den Heuvel-Panhuizen, Utrecht University, Netherlands &amp; Nord University, Norway, Norway; Dag Madsen, Nord University, Norway; Eleni Deliyianni, Cyprus Ministry of Education, Culture, Sports and Youth, Cyprus; Cathrine Bjerknes, Nord University, Norway</td>
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<td><strong>The role of mathematical content-related interaction in shared picture book reading</strong></td>
<td>Hanna Palmér, Linnaeus University, Sweden; Camilla Björklund, University of Gothenburg, Sweden</td>
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<th>Session N: 9</th>
<th>Time: 15:45-16:45</th>
<th>Location: Session Room 17</th>
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<tr>
<td><strong>SYMPOSIUM: TEACHERS’ AND TEACHER EDUCATORS’ EVIDENCE-INFORMED PRACTICE: TAKEAWAYS FOR TEACHER EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Christina Wekerle, University of Augsburg, Germany</td>
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<td><strong>Discussant</strong></td>
<td>Christof Wecker, Universität Hildesheim, Germany</td>
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<tr>
<td><strong>Why initial teacher training is only part of the solution... (CANCELLED)</strong></td>
<td>Julie Nelson, National Foundation for Educational Research (NFER), United Kingdom; Matthew Walker, National Foundation for Educational Research (NFER), United Kingdom</td>
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<tr>
<td><strong>Teacher educators as central agents in an evidence-based practice agenda: A latent profile analysis</strong></td>
<td>Amika Diery, Technical University of Munich (TUM), Germany; Maximilian Knegler, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany</td>
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<td><strong>From research evidence to teaching action: Teacher educators’ views of evidence-informed practice</strong></td>
<td>Despoina Georgiou, Utrecht University, Netherlands; Sog Yee Mok, University of Zurich, Switzerland; Cui Ping, Eindhoven University of Technology, Netherlands; Tina Seidel, Technische Universität München, Germany</td>
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<td><strong>Contrasting pre-, in-service teachers’ and educational researchers’ evidence-informed reasoning</strong></td>
<td>Christina Wekerle, University of Augsburg, Germany; Katharina Kiemer, Universität Augsburg, Germany; Kai Wagner, Saarland University, Germany; Kati Trempler, University of Wuppertal, Germany; Martin Greisel, University of Augsburg, Germany; Theresa Wilkes, Saarland University, Germany; Robin Stark, Saarland University, Germany; Ingo Kollar, University of Augsburg, Germany</td>
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<th>Session N: 10</th>
<th>Time: 15:45-16:45</th>
<th>Location: Session Room 3</th>
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<tr>
<td><strong>SYMPOSIUM: STUDENTS’ VALUES OF TOLERANCE AND CITIZENSHIP – RESULTS FROM ICCS 2016</strong></td>
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<td><strong>Chair</strong></td>
<td>Johanna Fee Ziemer, University of Duisburg-Essen, Germany</td>
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<td><strong>Organiser</strong></td>
<td>Johanna Fee Ziemer, University of Duisburg-Essen, Germany</td>
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<td><strong>Discussant</strong></td>
<td>Katri Hahn-Laudenberg, University of Wuppertal, Germany</td>
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<tr>
<td><strong>Citizenship Norms Among Native and Immigrant Students From A European Perspective</strong></td>
<td>Maria Magdalena Isac, KU LEUVEN, Belgium; Ellen Claes, KU Leuven, Belgium; Andres Sandoval-Hernandez, University of Bath, United Kingdom</td>
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<tr>
<td><strong>Citizenship Norms and Tolerance in European Adolescents</strong></td>
<td>Andres Sandoval-Hernandez, University of Bath, United Kingdom; Ellen Claes, KU Leuven, Belgium; Nicola Savvides, University of Bath, United Kingdom; Maria Magdalena Isac, KU LEUVEN, Belgium</td>
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<tr>
<td><strong>Which aspects of schooling are suitable to foster tolerance among adolescents?</strong></td>
<td>Johanna Fee Ziemer, University of Duisburg-Essen, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany</td>
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**SYMPOSIUM: PROBLEM SOLVING - EFFECTS OF CHILDREN’S INTERINDIVIDUAL COMPETENCES AND PEDAGOGICAL APPROACHES**

**Chair**
Anke Maria Weber, University of Koblenz-Landau, Germany

**Organiser**
Anke Maria Weber, University of Koblenz-Landau, Germany

**Discussant**
Samuel Greiff, University of Luxembourg, Luxembourg

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<th>Title</th>
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<tr>
<td>Verbal processes and mental effort in bilingual and monolingual children's planning performance</td>
<td>Susanne Enke, University of Leipzig, Germany; Catherine Gunzenhauser, University of Freiburg, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Henrik Saalbach, University of Leipzig, Germany</td>
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<td>Preschool Construction Play as a Means to Enhance Problem Solving and Self-Regulation Capabilities</td>
<td>Orit Spakor-Levy, Bar-Ilan University, Israel; Taly Shechter, Bar-Ilan University, Israel</td>
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<td>Examining 5- to 7-year-old children's testing and optimizing with a gear engineering task</td>
<td>Timo Reuter, University of Koblenz-Landau, Germany; Miriam Leuchter, University of Koblenz - Landau, Germany</td>
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<td>The Association of Offline and Online Inquiry Skills with Conceptual and Procedural Knowledge</td>
<td>Joep van der Graaf, Radboud University Nijmegen, Netherlands</td>
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**SYMPOSIUM: EFFECTIVENESS OF TEACHING: DOES TASK-DESIGN MATTER?**

**Chair**
Leonie Jacob, University of Tübingen, Germany

**Organisers**
Leonie Jacob, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany

**Discussant**
Logan Fiorella, University of Georgia, United States

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<td>Learning-by-Teaching: Testing the Social-Presence Hypothesis by Manipulating Audience Size</td>
<td>Vincent Hoogerheide, Utrecht University, Netherlands; Andreas Lachner, University of Tübingen, Germany; Leonie Jacob, University of Tübingen, Germany; Inga Glogger-Frey, University of Freiburg/Department of Psychology, Germany; Tamara Van Gog, Utrecht University, Netherlands; Alexander Renkl, University of Freiburg, Germany</td>
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<td>Does Inducing Social Presence Enhance the Effectiveness of Teaching in Written Form?</td>
<td>Leonie Jacob, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany</td>
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<td>Modality Transfer: Instructional Implications for e-Learning by Teaching – a Field Study</td>
<td>Tobias Mannhart, University of Regensburg, Germany; Silke Schworm, University of Regensburg, Germany</td>
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<td>Teaching on video as an instructional strategy to prepare open-minded citizenship lessons</td>
<td>Suzan van Brussel, Avans University of Applied Sciences, Netherlands; Miranda Timmermans, Avans university of applied sciences, Netherlands; Peter Verkooijen, Erasmus University Rotterdam, the Netherlands, Netherlands; Fred Paas, Department of Psychology and Education and Child Studies, Netherlands</td>
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**SYMPOSIUM: INTEGRATING EVIDENCE TO ADDRESS CONFLICTING CLAIMS: CHALLENGES AND INSTRUCTIONAL APPROACHES**

**Chair**
Clark Chinn, Rutgers University, United States

**Discussant**
Helge Stramsa, University of Oslo, Norway

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<td>Linking disciplinary knowledge and epistemic dimensions in student evidentiary reasoning with CADE</td>
<td>Ala Samarapungavan, Purdue University, United States; Karl Clase, Purdue University, United States; Nancy Pelaez, Purdue University, United States; Stephanie Gardner, Purdue University, United States</td>
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<td>Integrating evidence when some evidence is cherry picked: Challenges for undergraduates</td>
<td>Toshio Mochizuki, Senzu University, Japan; Clark Chinn, Rutgers University, United States; Etsuji Yamaguchi, Kobe University, Japan</td>
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<td>Integrating Multiple Scientific Documents Using Document Maps</td>
<td>Danna Tal-Savir, University of Haifa, Israel; Sant Barzilai, University of Haifa, Israel; Fayez Abed, University of Haifa, Faculty of Education, Israel; Shiri Mor-Hagari, University of Haifa, Faculty of Education, Israel</td>
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SYMPOSIUM: RELATIONS BETWEEN CHILD-CARE QUALITY AND TODDLER’S COGNITIVE, SELF-REGULATORY AND SOCIAL OUTCOMES.

**Chairs**
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany

**Organisers**
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany

**Discussant**
Pamela Sammons, University of Oxford, United Kingdom

**Relationship between CLASS-Toddler and children’s self-regulation in Finland and Portugal**
Jenni Salminen, University of Jyväskylä, Finland; Carolina Guades, Faculty of Psychology and Educational Sciences, University of Porto, Portugal; Joana Cadima, Faculty of Psychology and Educational Sciences, University of Porto, Portugal; Eija Pakarinen, University of Jyväskylä, Finland; Marja-Kristina Lerkkanen, University of Jyväskylä, Finland

**Can web-mediated trainings improve teacher-child interactions and toddler’s socio-emotional skills?**
Sonja Perren, University of Konstanz, Germany; Yvonne Reyhing, Pädagogische Hochschule Thurgau, Switzerland

**Relations between quality of teacher-child interaction and toddler’s mathematical outcomes.**
Simone Lehrl, University of Bamberg, Germany; Anja Linberg, German Youth Institute, Germany; Dorothea Domhelm, University of Bamberg, Germany; Nadine Bossae, Otto-Friedrich-University Bamberg, Germany; Franka Baron, German Youth Institute, Germany; Johanna Klemm, Otto-Friedrich-Universität Bamberg, Germany; Hans Guenther Rossbach, University of Bamberg, Germany; Sabine Weinert, University of Bamberg, Germany

**Relations between child-care quality and toddler’s math, literacy, and socio-emotional skills**
Gerlind Grosse, Early Childhood Education Research, Germany; Romy Schönfeld, University of Potsdam, Germany; Stefanie Barth, University of Potsdam, Germany; Antonia Simon, University of Potsdam, Germany; Alexander Soemer, University of Potsdam, Germany

SYMPOSIUM: DIGITAL PERSONALIZED LEARNING: CONCEPTUALIZATION, OPERATIONALIZATION AND IMPACT

**Chair**
Rani Van Schoors, KU LEUVEN, Belgium

**Organiser**
Rani Van Schoors, KU LEUVEN, Belgium

**Discussant**
Natalia Kucirkova, University of Stavanger, Norway

**State of the art of research on digital personalized learning: a systematic review**
Rani Van Schoors, KU LEUVEN, Belgium; Jan Elen, KU Leuven, Belgium; Anneleen Raes, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium

**Multimodal deep learning model for operationalizing regulation in collaborative learning**
Andy Nguyen, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Yansen Wang, Carnegie Mellon University, United States; Carolyn Rose, Carnegie Mellon University, United States; Jonna Malmberg, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland

**The effect of adaptivity in digital technologies: modeling learning efficiency using game data**
Stefanie Vanbecelaere, KU Leuven, Belgium; Dries Debeer, KU LEUVEN, Belgium; Wim Van Den Noortgate, KU LEUVEN, Belgium; Bert Reynvoet, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium

INVITED SYMPOSIUM: EFG: NEW SOLUTIONS FOR EDUCATIONAL EYE-TRACKING RESEARCH

**Chairs**
Markku Hannula, University of Helsinki, Finland; Nora McIntyre, University of Southampton, United Kingdom; Maike Schindler, Universität zu Köln/University of Cologne, Germany

**Organisers**
Eeva Haataja, University of Helsinki, Finland; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands

**Discussant**
Hans Gruber, University of Regensburg, Germany

**The potential benefits of AI for supporting eye tracking in mathematics education and beyond**
Maike Schindler, Universität zu Köln/University of Cologne, Germany; Achim Lilienthal, Örebro university, Sweden

**Clustering targets of visual attention in a classroom: Combining spatial and temporal dimensions**
Markku Hannula, University of Helsinki, Finland; Miika Toivanen, SeeTrue technologies, Finland

**Multimodal joint attention to mathematical objects through a dual eye-tracking lens**
Anna Silvasti, Utrecht University, Netherlands; Andrey Stepanov, National Research University Higher School of Economics, Russian Federation
### Session O: 1
**Time:** 17:30-18:30  
**Location:** Session Room 2

**ESPRESSO PAPER: STUDENT LEARNING AND SELF-REGULATION**

| Chair | The unrecognised potential of potential-based achievement goals  
Dirk Tempelaar, Maastricht University, Netherlands |
|-------|--------------------------------------------------------------------------------------------------|
|       | Metacognitively aware students exhibit higher creativity and motivation to learn  
Kamila Urban, Institute for Research in Social Communication, Slovak Academy of Sciences, Slovakia; Marek Urban, Jan Evangelist University Purkyně, Czech Republic; Ondra Pasout, J. E. Purkyně University, Czech Republic; Jiří Kombra, J. E. Purkyně University, Czech Republic |
|       | Daily fluctuations in motivation – A longitudinal diary study over an entire semester at university  
Henrik Bellhäuser, Johannes Gutenberg University Mainz, Germany; Björn Matthes, Technical University of Darmstadt, Germany; Patrick Liborius, Universität Liechtenstein, Liechtenstein |
|       | Effects of strategy support on self-regulated use of retrieval practice in higher education  
Marloes Broeren, Avans Hogeschool / Avans University of Applied Sciences, Netherlands; Peter Verkoeijen, Erasmus University Rotterdam, Netherlands; Gijs Smeets, Erasmus University Rotterdam, Netherlands; Arends Lidia, Erasmus University Rotterdam, Netherlands; Anita Heijltjes, Avans University of Applied Sciences, Netherlands |
|       | To ask or to answer? The effects of answering self-generated questions on expository text retention  
Felicitas Biwer, Maastricht University, Netherlands; Wisnu Wiradhaty, Binas University, Institute for Psychology, Indonesia; Mirjam oude Egbrink, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands |
|       | Triggering goal orientation influences the testing effect  
Tino Endres, University of Freiburg, Germany; Alexander Eitel, University of Giessen, Germany; Alexander Renkl, University of Freiburg, Germany |

### Session O: 2
**Time:** 17:30-18:30  
**Location:** Session Room 18

**ESPRESSO PAPER: EDUCATIONAL EFFECTIVENESS AND IMPROVEMENT**

| Chair | The importance of school improvement capacities for improvement processes based on inspection data  
Tanja Rettinger, Johannes Gutenberg University Mainz, Germany |
|-------|------------------------------------------------------------------------------------------------------------------|
|       | Pandemic as a driving force for improvement? An analyses of predictors and perceived effects  
Katharina Maag-Merk, University of Zurich, Switzerland; Tobias Polthoff, Johannes Gutenberg University of Mainz, Germany; Tanja Rettinger, Johannes Gutenberg University Mainz, Germany; Francesca Suter, University of Zurich, Switzerland |
|       | Children's digital experience: Understanding children’s perspectives and agency  
Janniche Elisabeth Broch Wilhelmsen, Oslo Metropolitan university, Norway |
|       | Contextual embeddedness of school leadership strategies during the COVID-19 Pandemic  
Stefan Brauckmann-Sajkiewicz, Alpen-Adria-University, Institute of instructional and school development, Austria; Georg Krammer, University College of Teacher Education Styria, Austria |
|       | Student Autonomy and Support during transition: Co-creation of transition to Practice Curriculum  
Shireen Suliman, Hamad Medical Corporation, Qatar; Karen Könings, Maastricht University, Netherlands; Margaret Allen, Hamad Medical Corporation, Qatar; Ayad Al-Moash, Qatar University, Qatar; Alison Carr, Qatar University, Qatar; Richard Koopmans, University Hospital Maastricht, Netherlands |
|       | Dealing with challenges in times of disruptions – resilient types of schools  
Nina Jude, University Heidelberg, Germany; Katharina Kregbaum, Heidelberg University, Germany |

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**WEDNESDAY, 25 AUGUST 2021**
**ESPRESSO PAPER: WRITING AND TEACHING APPROACHES**

**Chair**
Inmaculada Martínez-García, University of Cadiz, Spain

**WRITING TALK: TEACHERS’ MANAGEMENT OF DIALOGIC METATALK ABOUT WRITING**
Debra Myhill, University of Exeter, United Kingdom

The influence of thinking dispositions on synthesis writing: A randomized control trial
Christian Tarchi, University of Florence, Italy; Ruth Villalon, University of Cantabria, Spain

The effects of a genre-based interconnected reading and writing instruction
Moniek Vis, Rijksuniversiteit Groningen, Netherlands; Amos van Gelderen, University of Amsterdam / Rotterdam University of Applied Sciences, Netherlands; Kees de Groller, University of Groningen, Netherlands; Jacqueline van Knippenberg, NHL Stenden University of Applied Sciences / Open University, Netherlands

**EXPLORING TEACHERS’ ORCHESTRATION OF METATALK ABOUT WRITTEN TEXT**
Ruth Newman, University of Exeter, United Kingdom

Implementation and review of students’ writing strategy awareness in storytelling
Christina Knott, University Regensburg, Germany; Anita Schilcher, University of Regensburg, Germany; Johannes Wild, Universität Regensburg, Germany

Primary school teacher students’ self-assessed competence development: baseline of first semesters
Julia Klug, PH Salzburg, Austria; Andrea Magnus, PH Salzburg, Austria

**ESPRESSO PAPER: ASSESSMENT METHODS AND TOOLS**

**Chair**
Moritz Börnert-Ringleb, Leibniz University Hannover, Germany

**To Play or not to Play: Assessment of Early Mathematical Competencies via Linear Number Board Games**
Johanna Skillen, Catholic University Eichstätt-Ingolstadt, Germany; Katja Seitz-Stein, Catholic University Eichstätt-Ingolstadt, Germany

**Disentangling self-assessment: Self-assessor profiles in Secondary Education**
Leire Pinedo, Universidad de Deusto, Spain; Javier Fernández, Universidad Autónoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain

**Disentangling self-assessment: Self-assessor profiles in Higher Education**
Leire Pinedo, Universidad de Deusto, Spain; Javier Fernández, Universidad Autónoma de Madrid, Spain; Ernesto Panadero, Universidad Deusto, Spain; Iván Sánchez-Iglesias, Universidad Complutense de Madrid, Spain

**Developing a measure on bachelor students’ experiences of peer ja self-assessment**
Vivi Virtanen, Häme University of Applied Sciences, Finland; Henna Askainen, University of Helsinki, Finland; Liisa Myyry, University of Helsinki, Finland; Lauri Partanen, Aalto University, Finland

**Children as Consumers: Extended Competence Modelling with Process Data from a Virtual Supermarket**
Philine Drake, German Institute for International Educational Research (DIPF), Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany; Gunnar Mau, DHfG Deutsche Hochschule für Gesundheit & Sport, Germany; Manuel Froitzheim, Center for Economic Education, University of Siegen, Germany; Michael Schuhlen, Center for Economic Education, University of Siegen, Germany; Theresia Mennekes, Faculty of Business Administration, University of Siegen, Germany

**Middle school students’ understanding of assignments in a self-directed learning environment**
Gertraud Benke, Klagenfurt University, Austria; Samantha Clay, University College of Teacher Education, Carinthia, Austria
**ESPRESSO PAPER: TECHNOLOGY-ENHANCED LEARNING AND INSTRUCTION**

**Chair**
Mayra Mascareño Lara, University of Groningen, Netherlands

**If you tell me, I will help you – Family climate and parental support for adolescents’ internet use**
Ricarda Kurock, University of Paderborn, Germany; Nicole Gruchel, Universität Paderborn, Germany; Sabrina Bonanati, Paderborn University, Germany; Heike M. Bühl, Paderborn University, Germany

**Home Learning Environment, parental support and different types of students’ internet use**
Nicole Gruchel, Universität Paderborn, Germany; Ricarda Kurock, University of Paderborn, Germany; Sabrina Bonanati, Paderborn University, Germany; Heike M. Bühl, Paderborn University, Germany

**Cognitive training in kindergarten and insights into cognitive activities at home**
Efsun Annac, Ludwig Maximilian University of Munich, Germany; Frank Niklas, Department of Psychology, Ludwig Maximilian University of Munich, Germany

**Effects of the family ecosystem on lives of the digital generation: Four European case studies**
Olaf Kapella, University of Vienna, Austrian Institute for Family Studies, Austria; Merike Sisask, Tallinn University, Estonia; Maria Roth, Babes-Bolyai University, Romania; Tove Lafton, Oslo Metropolitan University, Norway

**Remote assessment of cognitive functions in children: a systematic review**
Chiara Pecini, University of Florence, Italy; Costanza Ruffini, University of Florence, Italy; Gabriella Giuliano, University of Florence, Italy; Monica Morini, University of Florence, Italy

**Analysis of students’ interactions during playing and modifying half-baked rhetorical games**
Evrykleia Panagiotou, National & Kapodistrian University of Athens, Greece; Chronis Kynigos, National & Kapodistrian University of Athens, Greece

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**ESPRESSO PAPER: TEACHER PROFESSIONAL DEVELOPMENT**

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

**Peer observation as a teacher professional development mechanism: Participant teachers’ perception**
Ester Miquel, Autonomous University of Barcelona, Spain; David Duran Giabert, Universitat Autònoma de Barcelona, Spain; Mariona Corcòelles, Universitat Ramon Llull, Spain; Jesús Ribosa, Universitat Autònoma de Barcelona, Spain

**Using videos to promote reflective practice on higher education teaching: a cross-national study**
Anna Serbati, University of Padova, Italy; Fulvio Biddau, University of Padua, Italy; Fiona Dalziel, University of Padua, Italy; Alessio Surian, Università degli Studi di Padova, Italy

**Scaffolding collaborative reflection: the role of facilitators**
Nicola Reimann, Durham University, United Kingdom; Taha Rajab, Durham University, United Kingdom; Teti Dragas, University of Durham, United Kingdom; Julie Rattray, University of Durham, United Kingdom; Malcolm Murray, Durham University, United Kingdom

**Intercultural Reflecting Teams in higher education: a closer look at challenges in teaching**
Carmen Heckmann, Goethe University Frankfurt, Germany; Sabine Fabriz, Goethe-Universität Frankfurt, Germany; Miriam Hansen, Goethe-Universität Frankfurt, Germany; Julia Mendzheritskaya, Goethe-Universität Frankfurt, Germany

**Identification of professional development needs of a group of teachers for attaining school goals**
Dace Namsone, University of Latvia, Latvia; Līga Čakāne, University of Latvia, Latvia; Anete Butkēviča, University of Latvia, Latvia

**University Teachers’ Professional Development: A Scoping Review**
Marilou Bélisle, Université de Sherbrooke, Canada; Valérie Jean, Université de Sherbrooke, Canada; Sawsen Lakhal, Université de Sherbrooke, Canada; Tanya Chichekian, Université de Sherbrooke, Canada; Nicolas Fernandez, Université de Montréal, Canada; Patrick Lavoie, Université de Montréal, Canada; Kathleen Lechasseur, Université Laval, Canada; Louise Boyer, Université de Montréal, Canada
ESPRESSO PAPER: TEACHER EDUCATION

**Chair**
Jule Krüger, Universität Duisburg-Essen, Germany

**Using the FA-cycle to Explore Teachers’ Formative Assessment Activities**
Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Judith Guikens, Wageningen University, Netherlands; Machiel Bouwmans, Utrecht University of Applied Sciences, Netherlands

**The prominence of loss - physical aspects of teaching online during the Covid-19 pandemic**
Eva Wennäs Brante, Malmö University, Sweden; Anna-Lena Godhe, Malmö University, Sweden

**Facilitation of Peer Feedback with Video Annotation in Teacher Education**
Ilka Nagel, Østfold University College / University of Oslo, Norway; Irina Engenes, Østfold University College, Norway

**Using Visual Thinking Strategies for stimulating intercultural sensitivity in pre-service teachers**
Marjolein Deuks, University of Groningen, Netherlands; Hanke Korpershoek, University of Groningen, Netherlands; Mariëtte Hingstman, Rijksuniversiteit Groningen, Dept of Education and GION, Netherlands; Annegien Langeloo, Alfa College, Netherlands

**Contrasting two brief online interventions to write better argumentative synthesis at university**
Ruth Viladon, University of Cantabria, Spain; Maria Luna, Universidad a Distancia de Madrid (UDIMA), Spain; Isabel Martinez-Alvarez, Madrid Open University (UDIMA), Spain; Mar Mateos, Universidad Autónoma de Madrid, Spain

**Key elements of critical digital literacies from the perspective of school education**
Minna Lakkala, University of Helsinki, Finland; Liisa Ilomäki, University of Helsinki, Finland; Veera Kallunki, University of Helsinki, Finland; Anastasia Gouseti, University of Hull, United Kingdom; Darren Mundy, University of Hull, United Kingdom; Juliana Raffaghelli, Universitat Oberta de Catalunya, Spain; Marc Romero, Universitat Oberta de Catalunya, Spain; Teresa Romeu, Universitat Oberta de Catalunya, Spain; Maria Ranieri, University of Florence, Italy; Isabella Bruni, University of Florence, Italy; Alice Roffi, University of Florence, Italy

ESPRESSO PAPER: TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Emer Ring, Mary Immaculate College, Limerick, Ireland, Ireland

**New teachers’ professional development needs in response to emergency remote teaching in Scotland**
Rachel Sharps, University of Aberdeen, United Kingdom; Mark Carver, University of Strathclyde, United Kingdom

**Building blocks for higher education teachers’ professional development aimed at innovation with IT**
Marlies ter Beek, University of Twente, Netherlands; Kim Schildkamp, University of Twente, Netherlands; Dorien Hopster-den Otter, University of Twente, Netherlands; Dana Uerz, HAN University of Applied Sciences (UAS), Netherlands; Anne Horvers, Radboud University Nijmegen, Netherlands

**An integral approach towards professional development aimed at educational innovation with IT**
Marlies ter Beek, University of Twente, Netherlands; Marieke van Geel, University of Twente, Netherlands; Dorien Hopster-den Otter, University of Twente, Netherlands

**‘SustainableFood’, a school-NGO collaboration towards more sustainable food consumption**
Ole Smorkald, Department of Education, Norway; Margret Sævarsdottir, Department of Education, University of Oslo, Norway; Mant Hovland, Department of Education, University of Oslo, Norway

**Residual impacts of professional development: A cross case analysis**
Karen Koellner, Arizona State University, United States; Nanette Seago, WestEd, United States; Nicora Placa, Hunter College, City University of New York, United States

**Personal and professional contribution of SEL continuing education program to preschool teachers**
Yael Kesner Baruch, Belf Beri College, Kfar Saba, & Levinsky College of Education, Tel Aviv, Israel, Israel
### ESPRESSO PAPER: ETHNOGRAPHY

**Chair**
Julia Morinaj, University of Bern, Switzerland

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<td>Kristiina Kumpulainen, University of Helsinki, Finland; Heidi Sairanen, University of Helsinki, Finland</td>
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<td>Recurring Challenge under New Sign: Autonomy in Student Crowd Research Projects</td>
<td>Alësa K. Brasse, University of Hamburg, Germany; Nela K. Groß, University of Hamburg, Germany; Gabi Reinmann, Universität Hamburg, Germany</td>
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<td>Towards a transformative stance in research on learning and education: theoretical challenges</td>
<td>Alfred Jornet, University of Oslo, Department of Teacher Education and School Research, Spain; Giulia Messina Dahlberg, University of Gothenburg, Sweden; Anri Rajala, University of Oulu, Finland; Alessio Surián, Università degli Studi di Padova, Italy; Peter David Renshaw, The University of Queensland, Australia</td>
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<td>The politics of expansive learning in three social movements</td>
<td>Yrjö Engeström, University of Helsinki, Finland; Mikael Brunila, McGill University, Montreal, Canada; Juhana Rantavuori, Center for Research on Activity, Development and Learning CRADLE, Finland</td>
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<td>Talking with, talking back. On rules and transgressions in researching diversity and communication</td>
<td>Sangeeta Bagga-Gupta, Jönköping University, Sweden</td>
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<td>Digital Civic Participation Youth Cultures in Estonia, Greece and the UK</td>
<td>Athina Karatzogianni, University of Leicester, United Kingdom; Katrin Tideman, Tallinn University, Estonia; Dimitris Parsanoglou, Panteion University of Social and Political Sciences, Greece</td>
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### ESPRESSO PAPER: METHODS IN LEARNING RESEARCH

**Chair**
Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany

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<td>Wendy Nuis, Maastricht University, Netherlands; Simon Beausaert, Maastricht University, Netherlands</td>
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<td>Mindful methods: An empirical study of mixed-methods research designs in education research</td>
<td>Dominik E. Froehlich, University of Vienna, Austria; Alexandra Wolf, University of Vienna, Austria</td>
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<td>University Teachers’ Subjective Well-being and Achievement Goals: A Person-centered Analysis</td>
<td>Raven Rinas, Augsburg University, Germany; Julia Hein, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany; Oliver Dickrausser, University of Mannheim, Germany; Markus Dresel, University of Augsburg, Germany; Martin Daumiller, University of Augsburg, Germany</td>
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<td>Predictors of Practicing with an Adaptive Arithmetic Learning Program</td>
<td>Anna Hilz, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karin Gulil, Leibniz Institute for Science and Mathematics Education, Germany; Janina Roloff-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany</td>
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<td>The role of social relatedness for drop-out intention in first semester STEM students</td>
<td>Julia Eberle, Ruhr-Universität Bochum, Germany; Nicole Krämer, University of Duisburg-Essen, Germany; Niko Rummel, Ruhr University Bochum, Germany</td>
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<tr>
<td>Measuring Adult Education Teachers’ Beliefs about Teaching Language in a Globalized Society</td>
<td>Dörthe Herbrechter, Heidelberg University, Germany; Xenia Kuhn, German Institut for Adult Education, Germany</td>
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</tbody>
</table>
Session O: 11
Time: 17:30-18:30
Location: Session Room 17

ESPRESSO PAPER: LEARNING ANALYTICS

**Chair**
Leonie Jacob, University of Tübingen, Germany

**Capturing motivation and affect using multimodal data: Toward theory-driven learning analytics**
Elizabeth Cloude, University of Central Florida, United States; Florence Gabriel, University of South Australia, Australia; Roger Azevedo, University of Central Florida, United States

**Studying emotional contagion in collaborative learning: Challenges and opportunities for LA research**
Muhterem Dindar, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Sara Ahola, University of Oulu, Finland; Xiaohua Huang, University of Oulu, Finland; Guoying Zhao, University of Oulu, Finland

**What can enactment of control during learning tell about students' motivation?**
Inge Molenaar, Radboud University Nijmegen, Netherlands; Anne Horvers, Radboud University Nijmegen, Netherlands; Rick Dijkstra, Radboud University Nijmegen, Netherlands

**How Emotional Dispositions Influence the Online Learning Behaviour**
Dirk Henthaler, University of Mannheim, Germany; Muhittin Sahin, University of Mannheim, Germany; Clara Schumacher, Humboldt-Universität Berlin, Germany

**Student engagement across academic paths: using LA as a support for study planning and monitoring**
Anni Silvola, University of Oulu, Finland; Amanda Sjöblom, Aalto University, Finland; Sami-Santeri Svensk, Tampere University, Finland; Pia Naykki, University of Jyväskylä, Finland; Hanni Muukkonen, University of Oulu, Finland

**Examining moderators of effects of dashboard feedback on learner motivation and performance**
Anja Hawlitschek, Otto-von-Guericke-Universität Magdeburg, Germany; Galina Rudolf, TU Bergakademie Freiberg, Germany; Sebastian Zug, TU Bergakademie Freiberg, Germany

Session O: 12
Time: 17:30-18:30
Location: Session Room 12

ESPRESSO PAPER: LEARNING TECHNOLOGIES

**Chair**
Mathias Mejeh, University of Bern, Switzerland

**University Students’ Ecologies of Digital Resources. A mixed methods study**
Dan Uehara, University of Oslo, Faculty of Education, Norway; Crina Damsa, University of Oslo, Norway; Lisa Toft Henriksen, University of Oslo, Norway

**Different Levels of Guidance in Hands-on and Virtual Science Laboratories – What Works Best When?**
Hasan Ozgur Kapıcı, Yıldız Technical University, Turkey; Hakan Akcay, Yıldız Technical University, Turkey; Hakki Cakır, Yıldız Technical University, Turkey

**How Virtual and Physical Manipulatives Affect Preschoolers’ Understanding of Balancing a Scale**
Yvoni Pavlou, University of Cyprus, Cyprus; Marios Papaevripidou, University of Cyprus, Cyprus; Zacharias Zacharia, University of Cyprus, Cyprus

**20 Years of Combining Physical and Virtual Experiments in Science Education: a Systematic Review**
Salome Wörner, Leibniz-Institut für Wissensmedien (IWM) Tübingen, Germany; Jochen Kuhn, TU Kaiserslautern, Physics Education Research Group, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany

**Promoting Scientific Practices and Collective Knowledge Advances through Idea-Friend Maps**
Xueqi Feng, The University of Hong Kong, China; Carol Chan, The University of Hong Kong, Hong Kong; Jan van Aalst, University of Hong Kong, Hong Kong
### Session O: 13
**Time:** 17:30-18:30  
**Location:** Session Room 5

**ESPRESSO PAPER: PRIMARY EDUCATION**

**Chair**
Arthur Graesser, University of Memphis, United States

**Teachers’ responses toward bullying questionnaire: A cross-country validation study**
Fleur van Gils, KU LEUVEN, Belgium; Hilde Colpin, KU LEUVEN, Belgium; Karine Verschueren, KU Leuven, Belgium; Ersilia Menesini, University of Florence, Italy; Benedetta Emanuela Palladino, University of Florence, Italy

**Cognitive skills, task-interest and self-beliefs in children with dysfluency in reading and math**
Jenni Puttonen, University of Jyväskylä, Finland; Mikko Aro, University of Jyväskylä, Finland; Kenneth Eklund, University of Jyväskylä, Finland; George Georgiou, University of Alberta, Canada; Riikka Hekkilä, University of Jyväskylä, Finland; Tuire Koponen, University of Jyväskylä, Finland; Jonna Salminen, City of Jyväskylä, Finland; Victor van Daal, Edge Hill University, United Kingdom

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

**Exploring how co-located microblogging can support young students’ collaborative reasoning**
Anja Amundrud, University of Oslo, Norway; Ingvill Rasmussen, University of Oslo, Norway; Ole Smaardal, Department of Education, Norway

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### Session O: 14
**Time:** 17:30-18:30  
**Location:** Session Room 14

**ESPRESSO SYMPOSIUM: GROWTH MINDSET AND EFFECTIVE SCHOOLING IN DIFFERENT CONTEXTS**

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

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

**Discussants**
Pia Kreijkes, University of Cambridge, United Kingdom; Nienke van Alteveld, Vrije Universiteit Amsterdam, Netherlands

**Adaptive orientations towards failure and growth mindset in effective schools in difficult contexts**
Maria Tulis, University of Salzburg, Austria; Dominik Harnisch, University of Salzburg, Austria; Roland Bernhard, University of Salzburg, Austria

**Students’ growth mindset: Relation to teacher beliefs, teaching practices, and school climate**
Junlin Yu, University of Helsinki, Finland; Pia Kreijkes, University of Cambridge, United Kingdom; Katarina Salmela-Aro, Helsinki University, Finland

**Well-intentioned but dysfunctional: Teachers’ feedback to students with a migrant background**
Helene Zepp, University of Freiburg, Germany; Thamar Voss, University of Freiburg, Germany

**“Doing” mindsets in classrooms: A coding scheme for teacher-student mindset-related verbalizations**
Naomi de Ruiter, University of Groningen, Netherlands

### Session O: 15
**Time:** 17:30-18:30  
**Location:** Session Room 8

**ESPRESSO SYMPOSIUM: USING STUDENT FEEDBACK FOR TEACHING DEVELOPMENT AND TEACHER PROFESSIONALIZATION IN SCHOOLS**

**Chairs**
Sebastian Röhl, University of Tubingen, Germany; Wolfram Rollett, University of Education Freiburg, Germany

**Organisers**
Sebastian Röhl, University of Tubingen, Germany; Wolfram Rollett, University of Education Freiburg, Germany

**Discussant**
Adrie Visscher, Univ. of Twente, Netherlands

**Effects of student feedback on teaching quality in schools – a meta-analysis**
Sebastian Röhl, University of Tubingen, Germany

**Does smartphone-assisted student feedback affect teaching quality?**
Hannah Bijlsma, University of Twente, Netherlands; Adrie Visscher, Univ. of Twente, Netherlands

**Pre-service teachers’ attitudes towards student feedback and reflection in Germany and Switzerland**
Corinna Wyss, FHW School of Education, Switzerland; Kerstin Göbel, University of Duisburg-Essen, Germany; Katharina Neuber, University of Duisburg-Essen, Germany; Meike Raafaub, Pädagogische Hochschule Zürich, Switzerland
Session O: 16  Time: 17:30-18:30  Location: Session Room 9

ESPRESSO SYMPOSIUM: EMPOWERMENT OF TEACHERS FOR TECHNOLOGY-ENHANCED TEACHING: BOUNDARY CONDITIONS AND STRATEGIES

Chair
Jürgen Schneider, University of Tübingen, Germany

Organisers
Iris Backfisch, University of Tuebingen, Germany; Armin Fabian, University of Tuebingen, Germany

Discussant
Jo Tondeur, Vrije Universiteit Brussel, Belgium

TPACK and Contextual Knowledge: Unpacking that mysterious outer circle
Eliana Brianza, University of Zurich, Institute of Education, Switzerland; Mirjam Schmid, University of Zurich, Switzerland; Dominik Petko, University of Zurich, Switzerland

Another jangle fallacy? Validity of Technological Pedagogical Content Knowledge self-reports
Jürgen Schneider, University of Tübingen, Germany; Iris Backfisch, University of Tuebingen, Germany; Andreas Lachner, University of Tuebingen, Germany; Katharina Schiefer, Leibniz-Institut für Wissensmedien, Germany; Ronny Scherer, University of Oslo, Norway

What pre-service teachers gain from a teacher training course? TPACK perspective
Teemu Valtonen, University of Eastern Finland, Finland; Mikka Eriksson, University of Eastern Finland, Finland; Sirpa Kälviäinen, University of Eastern Finland, Finland; Ville Tahvanainen, University of Eastern Finland, Finland; Erkko Sointu, University of Eastern Finland, Finland

Fostering Technology Integration of Pre-Service Teachers: A Quasi-experimental field study
Armin Fabian, University of Tuebingen, Germany; Andreas Lachner, University of Tuebingen, Germany; Ulrike Franke, University of Tuebingen, Germany; Judith Press, University of Tuebingen, Germany

Session O: 17  Time: 17:30-18:30  Location: Session Room 10

ESPRESSO SYMPOSIUM: UNDERSTANDING AND FOSTERING EARLY METACOGNITION AND SRL: EFFECTS OF EXERCISES, BELIEFS AND FEEDBACK

Chair
Mariette van Loon, University of Bern, Switzerland

Discussant
Nancy Perry, University of British Columbia, Canada

Effects of monitoring exercises, feedback, incentives and modeling on students’ calibration
Engin Ader, Bogazici University, Turkey; Kubra Ture, Bogazici University, Turkey

My brain needs a break: Children’s willpower theories are related to behavioral self-regulation
Miriam Compagnoni, University of Zurich, Switzerland; Vanda Sieber, University of Zurich, Switzerland; Veronika Job, Technische Universität Dresden, Germany

Young learners’ use of increased autonomy and personalized visualizations to regulate learning
Anne Horvers, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Rick Dijkstra, Radboud University, Netherlands

Relations between monitoring accuracy, SRL, and performance for fourth and sixth graders
Mariette van Loon, University of Bern, Switzerland; Niamh Oeri, University of Bern, Switzerland

Session O: 18  Time: 17:30-18:30  Location: Session Room 15

INVITED SYMPOSIUM: SIG 22: GENES, BRAIN, AND SOCIAL CONTEXTS: THEIR INTERACTIONS AND IMPLICATIONS FOR EDUCATION

Chair
Stephan Vogel, University of Graz, Austria

Discussant
Jessica Massonnié, University College London - Institute of Education, United Kingdom

Brain-based markers and socioeconomic status relate to expressive vocabulary development
Chiara Cantilani, IRCSS Eugenio Medea, Italy

Relations of parent-child number-related interactions to brain measures of number processing
O. Ece Demir-Lira, University of Iowa, United States

Investigating the genetic architecture of noncognitive skills using GWAS-by-subtraction
Perline Demange, Vrije Universiteit Amsterdam, Netherlands

SES and genetic markers of educational attainment both influence neurocognitive development
Nicholas Judd, Karolinska Institute, Sweden
### Session P: 1
**Time:** 18:45-19:45  
**Location:** Session Room 18

#### SINGLE PAPER: ARGUMENTATION AND TEACHER PROFESSIONAL DEVELOPMENT

**Chair**
Alaric Kohler, HEP-HEJUNE, Switzerland

**The role of teacher professionalism in changing dialogic and argumentative practices**
Christiana Karoussiou, University of Nicosia, Cyprus; Maria Evagorou, University of Nicosia, Cyprus; Maria Vrikki, University of Cyprus, Cyprus

**Teacher’s argumentative lesson plan in two professional development programs: a qualitative study**
Gabriel Fortes, Universidad Alberto Hurtado, Chile; Marisol Gómez, Universidad Alberto Hurtado, Chile; Joaquin Grez, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile

**An investigation of teacher professional learning that resulted in significant shifts in practice**
Matthew Wilsey, Stanford University, United States; Coralie Delhaye, Stanford University, United States; Jonathan Osborne, Stanford University, United States; Emily Reigh, Stanford University, United States

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### Session P: 2
**Time:** 18:45-19:45  
**Location:** Session Room 5

#### SINGLE PAPER: SOCIAL INTERACTION IN INFORMAL, LIFELONG AND COLLABORATIVE LEARNING

**Chair**
Karsten Wutschka, Center for Research on Education and School Development, TU Dortmund University, Germany

**Gaining insight into one’s own and experts’ knowledge by explaining: an experimental study**
Nina Vaupotič, University of Münster, Germany; Dorothé Kienhuus, University of Münster, Germany; Regina Jucks, WWU Münster, Germany

**Facts don’t speak for themselves: Discussing evidence about Covid-19 in three Reddit communities**
Mark Felton, San Jose State University, United States; Ellen Middaugh, San Jose State University, United States; Henry Fan, San Jose State University, United States

**Teachers’ collaborative argumentation when reasoning the selection of online educational information**
Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany

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

#### SINGLE PAPER: MATHEMATICS AND SECONDARY EDUCATION

**Chair**
Anna Serbati, University of Padova, Italy

**NNB in understanding the concept of variable - the role of integrity and the phenomenal sign bias**
Konstantinos Christou, University of Western Macedonia, Greece; Despoina-Ioanna Kyrvei, University of Western Macedonia, Greece

**Long-term effects of biased distributions of rational number tasks in mathematics textbooks**
Parvaneh Babari, Pädagogische Hochschule Schwyz, Switzerland; Andrea Cantieni, Schwyz University of Teacher Education (Pädagogische Hochschule Schwyz), Switzerland; Lennart Schalk, PH Schwyz, Switzerland

**Computer-based PS-I: Adaptive fitting of own and foreign errors during focused error processing**
Antje Boomgaard, University of Education Freiburg, Germany; Katharina Lobl, University of Education Freiburg, Germany; Timo Leuders, University of Education Freiburg, Germany

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### Session P: 4
**Time:** 18:45-19:45  
**Location:** Session Room 3

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

**Chair**
Suzanne Splinter, Katholieke Universiteit Leuven, Belgium

**Exploring factors for experts’ response rate on an educational Community Question-Answering platform**
Harry Stokhof, HAN University of Applied Sciences, Netherlands; Kalliope Meli, University of Patras, Greece; Konstantinos Lavidas, University of Patras, Greece

**Between acculturation and self-determination: a study at the Ecole Hôtelière de Lausanne**
Charlotte de Boer, Université de Genève, Switzerland; Nathalie DELOBBE, University of Geneva, Switzerland; Sébastien Fernandez, Ecole Hôtelière de Lausanne, Switzerland

**Language Teachers’ Instructional Use of Technology in the COVID-19 Era**
Wai Ming Cheung, The University of Hong Kong, Hong Kong; Fai Mei WONG, Baptist Lui Ming Choi Primary School, Hong Kong, Hong Kong; Serene Chan, The University of Hong Kong, Hong Kong
## Session P: 5
**Time:** 18:45-19:45  |  **Location:** Session Room 6

### SINGLE PAPER: WRITING AND LITERACY IN PRIMARY AND SECONDARY EDUCATION

**Chair**
Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

**An intervention study of writing in Technical Education at lower secondary school**
Johan van Driel, University of Amsterdam, Netherlands

**Handwriting and keyboarding effects on K-6 students writing and reading outcomes: A meta-analysis**
Anabela Malpique, Murdoch University, Australia; Deborra Valcany, Murdoch University, Australia; Deborah Pinto-Pasternak, University of Canberra, Australia; Susan Ledger, Murdoch University, Australia; Margaret Merga, Edith Cowan University, Australia

**Secondary school students’ cognitive processes while writing-from-sources in history and philosophy**
Lieke Holdinga, University of Amsterdam, Netherlands; Tanja Janssen, Universiteit van Amsterdam, Netherlands; Gert Rijkers, University of Amsterdam, Netherlands

## Session P: 6
**Time:** 18:45-19:45  |  **Location:** Session Room 17

### SINGLE PAPER: COGNITIVE DEVELOPMENT

**Chair**
Emily Grossnickle Peterson, American University, United States

**Music Professional Training Fosters Inhibitory Oculomotor Control: Longitudinal eye tracking study**
Krzysztof Krejtz, SWPS University of Social Sciences and Humanities, Poland; Agata Rodziewicz, SWPS University of Social Sciences and Humanities, Poland; Andrew Duchowski, School of Computing, Clemson University, United States; Izabela Krejtz, SWPS University of Social Sciences and Humanities, Poland

**Visual expertise in ECG interpretation: an eye-tracking augmented re situ interview approach**
William Wu, Queen’s University, Canada; Andrew Hall, Queen’s University, Canada; Heather Braund, Queen’s University, Canada; Colin Bell, Queen’s University, Canada; Adam Szulewski, Queen’s University, Canada

**Acute physical activity and cognition. An intraindividual study of primary school children.**
Lars-Erik Malmberg, University of Oxford, United Kingdom; Christine Heemskerk, University of Bern, Switzerland; Henry Lo, University of Surrey, United Kingdom; Patrick Esser, Oxford Brookes University, United Kingdom; Helen Dawes, Oxford Brookes University, United Kingdom; Stefan Kodzhabashev, University of Bern, Switzerland; Claudia Roebers, University of Bern, Switzerland

## Session P: 7
**Time:** 18:45-19:45  |  **Location:** Session Room 16

### SINGLE PAPER: TEACHING APPROACHES

**Chair**
Theresa Wilkes, Saarland University, Germany

**Teacher questions and student responses in case-based learning: A video study in medical education**
Martin Gartmeier, Technical University of Munich (TUM), Germany; Alexander Hapfelmeier, Technical University of Munich (TUM), Germany; Marc Grundwald, Technical University Munich, Germany; Janina Häusler, Technische Universität München (TUM), Germany; Theresa Pflutscheller, Technical University of Munich (TUM), Germany; Tina Seidl, Technische Universität München, Germany; Pascal Berberat, Technische Universität München (TUM), Germany

**Teachers’ Interests & Instructional practices in Action in Education for Sustainable Development**
Eleni Sinakou, University of Antwerp, Belgium; Vincent Donche, University of Antwerp, Belgium; Peter Van Petegem, University of Antwerp, Belgium

**Fading solution steps and revealing the solution when modelling skills**
Katharina Engelmann, Universität Hildesheim, Germany; Corinna Behrendt, Universität Hildesheim, Germany; Christof Wecker, Universität Hildesheim, Germany
### Session P: 8  
**Time:** 18:45-19:45  
**Location:** Session Room 8

**SINGLE PAPER: ASSESSMENT AND EVALUATION**

**Chair**  
Monika Waldis, University of Applied Sciences Northwestern Switzerland, Switzerland

**Student-Teacher Relationship Drawings and Student Characteristics: A Cross-Cultural Comparison**  
Mengdi Chen, University of Amsterdam, Netherlands; Marjolein Zee, University of Amsterdam, Netherlands; Debora Roorda, University of Amsterdam, Netherlands

**Students' self-beliefs in mathematics and the learning environment - TIMSS 2019 insights**  
Jelena Radisic, University of Oslo, Norway; Hege Kaarstein, Department of Teacher Education and School Research, University of Oslo, Norway

**Identification of gifted and talented children through nomination practices: a systematic review**  
Francesco Marsili, University of Perugia, Italy; Marta Pellegrini, University of Florence, Italy

### Session P: 9  
**Time:** 18:45-19:45  
**Location:** Session Room 12

**SINGLE PAPER: COMPUTER-ASSISTED AND MULTIMEDIA LEARNING**

**Chair**  
Minna Törmänen, University of Teacher Education in Special Needs Zurich, Switzerland; University of Helsinki, Finland, Switzerland

**Learning Robotics in Virtual Reality: Impact of Sequencing and Prompting on Learning Outcome**  
Andrea Vogt, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Franziska Babei, Ulm University, Institute of Psychology and Education, Department Human Factors, Germany; Philipp Hock, Ulm University, Institute of Psychology and Education, Department Psychology, Germany; Martin Baumann, Ulm University, Institute of Psychology and Education, Department Human Factors, Germany; Tina Seufert, Ulm University, Germany

**Learning with augmented reality - integrating virtual instructional elements into the physical world**  
Jule Krüger, Universität Duisburg-Essen, Germany; Vera Vohwinkel, Universität Duisburg-Essen, Germany; Daniel Bodemer, Universität Duisburg-Essen, Germany

**Supportive Elements for Coherence Formation Increase Code Comprehension**  
Andrea Vogt, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Thomas Witte, Ulm University, Institute of Software Engineering and Programming Languages, Germany; Matthias Tichy, Ulm University, Institute of Software Engineering and Programming Languages, Germany; Tina Seufert, Ulm University, Germany

### Session P: 10  
**Time:** 18:45-19:45  
**Location:** Session Room 4

**SINGLE PAPER: VOCATIONAL EDUCATION**

**Chair**  
Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands

**Factors influencing VET teachers’ intention to use technology in the COVID-19 era**  
Chiara Antonietti, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Martina Rausoe, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Francesca Amenduni, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland

**Fostering Apprentices Observation Through Annotations and Descriptions**  
Alessia Eletta Coppi, Swiss Federal Institute for Vocational Education and Training (SFIVET), Switzerland; Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland; Jean-Luc Gurthner, University of Fribourg, Switzerland

**Feasibility and Acceptability of ‘Sit-to-Stand’ Desks in the VET Setting, A Qualitative Study**  
Mara Kirschner, Open University of the Netherlands, Netherlands

### Session P: 11  
**Time:** 18:45-19:45  
**Location:** Session Room 2

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

**Chair**  
Mitja Burget, University of Tartu, Estonia

**Fostering primary students’ competence of data-based argumentation – An intervention study**  
Jens Krummenauer, Ludwigsburg University of Education, Germany; Sebastian Kurtze, Ludwigsburg University of Education, Germany

**Deliberative Teaching for Sustainable Citizenship: An Emerging Field?**  
Antonia Larrain, Universidad Alberto Hurtado, Chile; Maria Teresa Rojas, Universidad Alberto Hurtado, Chile; Gabriel Fortes, Universidad Alberto Hurtado, Chile

**Interdisciplinary Dialogic Education and the Challenge of Disciplinary Egocentrism**  
Lih Tselem, Technion - Israel Institute of Technology, Israel; Eitan Heyd-Metzuyanim, The Technion Israel Institute of Technology, Israel
**SINGLE PAPER: ARTIFICIAL INTELLIGENCE IN CONVERSATION AND DISCOURSE ANALYSIS**

**Chair**  
Sonia Ilie, University of Cambridge, United Kingdom

**Automatically Measuring Features of Teacher Discourse from Classroom Audio in English Language Arts**  
Sidney D'Mello, University of Colorado Boulder, United States; Emily Jensen, University of Colorado Boulder, United States; Meghan Elizabeth Dale, University of Pittsburgh, United States; Patrick Donnelly, Oregon State University Cascades, United States; Amanda Godley, University of Pittsburgh, United States; Sean Patrick Kelly, University of Pittsburgh, United States

**Automatic classification of semantic content of classroom dialogue in core subjects**  
Yu Song, South China Normal University, China; Shunwei Lei, South China Normal University, China; Tianyong Hao, South China Normal University, China

**ClassInSight: Automating Analysis of Classroom Dialogue to Support Teacher Noticing and Reflection**  
Saranya Venkatraman, The Pennsylvania State University, United States; Praesenjit Mitra, Pennsylvania State College of Information Sciences and Technology, United States; Sherice Clarke, University of California, San Diego, United States; Andrea Gomoll, University of California, San Diego, United States; Zayab Gates, University of California, San Diego, United States; Sushil S, University of California, San Diego, United States; Tarang Tripath, University of California, San Diego, United States; Amy Ogan, Carnegie Mellon University, United States

**Development of an Automated Tool to Track Secondary English Students’ Collaborative Argumentation**  
Amanda Godley, University of Pittsburgh, United States; Christopher Olshefski, University of Pittsburgh, United States; Diane Litman, University of Pittsburgh, United States; Luca Lugini, Ancestry, United States; Raveeet Singh, University of Pittsburgh, United States

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**WORKSHOP: THE VALUE OF LINGUISTIC ANALYSIS FOR EDUCATIONAL RESEARCH**

**The Value of Linguistic Analysis for Educational Research**  
Yulia Muchnik-Rozanov, Technion - Israel Institute of Technology, Israel; Dina Tsybulsky, Technion - Israel Institute of Technology, Israel

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**COLLABORATIVE WORKSPACE: CURRENT DEBATES IN PSYCHOMETRICS AND APPLIED STATISTICS: IMPLICATIONS FOR EDUCATIONAL RESEARCH**

**Current Debates in Psychometrics and Applied Statistics: Implications for Educational Research**  
Peter Edelsbrunner, ETH Zurich, Switzerland; Christian Thurn, ETH Zurich, Switzerland

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**ROUNDTABLE: LIFELONG AND WORKPLACE LEARNING**

**Chair**  
Ingvill Rasmussen, University of Oslo, Norway

**Mentor’s perspectives on long-term internships at school: An exploratory study**  
Carina Caruso, University of Paderborn, Germany; Michael Goller, University of Paderborn, Germany

**Practical experience and its influence on self-assessed competences of teacher students**  
Carina Caruso, University of Paderborn, Germany; Michael Goller, University of Paderborn, Germany

**Transitioning away from tertiary education: Adolescents embracing and resisting future scripting**  
Alexandrds Jansse, Universiteit Utrecht, Netherlands; Larikke Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands; Thea van Lanckveld, Utrecht University, Netherlands
### INVITED SYMPOSIUM: SIG 19: RELIGIONS AND WORLDVIEWS FOR 21ST CENTURY CITIZENSHIP SKILLS

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<tr>
<th>Chair</th>
<th>Religions and worldviews: 21st century education for citizenship.</th>
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<tr>
<td>Laura Hirsto, University of Eastern Finland, Finland</td>
<td>Rob Freathy, University of Exeter, United Kingdom</td>
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<tr>
<td>Organiser</td>
<td>University students growing up to be experts – supporting students citizenship skills?</td>
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<tr>
<td>Martin Ubani, University of Eastern Finland, Finland</td>
<td>Sanna Väisänen, University of Eastern Finland, Finland; Laura Hirsto, University of Eastern Finland, Finland</td>
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<tr>
<td>Discussant</td>
<td>Research-based development of RE teacher education in light of 21st century skills</td>
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<tr>
<td>Alexander Unser, TU Dortmund University, Germany</td>
<td>Martin Ubani, University of Eastern Finland, Finland; Arto Kaikkonen, University of Helsinki, Finland; Kaisa Vinikka, University of Eastern Finland, Finland; Tuuli Lipiäinen, University of Helsinki, Finland</td>
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</table>

### SYMPOSIUM: MULTIPLE PERSPECTIVES ON SEDUCTIVE DETAILS

<table>
<thead>
<tr>
<th>Chair</th>
<th>Looking behind the scenes of seductive details: Combining Eye-Tracking and Thinking-Aloud</th>
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</thead>
<tbody>
<tr>
<td>Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Manuel Ninaus, University of Innsbruck, Austria</td>
<td>Babette Park, Leuphana University Lueneburg, Germany; Andreas Korbach, Saarland University, Germany; Lisa Stark, Saarland University, Germany; Roland Brunken, Saarland University, Germany</td>
</tr>
<tr>
<td>Organisers</td>
<td>Using EEG and Eye-Tracking to study the seductiveness of decorative pictures</td>
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<tr>
<td>Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany; Manuel Ninaus, University of Innsbruck, Austria</td>
<td>Christian Scharinger, Leibniz-Institut für Wissensmedien, Germany</td>
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<tr>
<td>Discussant</td>
<td>Seductive details in immersive virtual reality</td>
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<tr>
<td>Jan L. Plass, New York University, United States</td>
<td>Jocelyn Parong, University of Wisconsin-Madison, United States; Richard Mayer, University of California, Santa Barbara, United States</td>
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<tr>
<td></td>
<td>Using fMRI to investigate the emotional effects of seductive details in a game-based learning task</td>
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<td>Manuel Ninaus, University of Innsbruck, Austria; Simon Greipl, Leibniz-Institut für Wissensmedien, Germany; Kristian Killi, Tampere University, Finland; Antero Lindstedt, Tampere University of Technology, Finland; Johannes Bischole, Department of Psychology, University of Tübingen, Germany; Julia Bahrmiiller, Centre for Mathematical Cognition, Loughborough University, United Kingdom; Elise Klein, Université de Paris, France; France; Hans-Otto Kamath, Hertie-Institute for Clinical Brain Research, University of Tübingen, Germany; Konbinian Moeller, Centre for Mathematical Cognition, Loughborough University, United Kingdom</td>
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</table>
### Session Q: 1
#### Time: 09:00-10:00
#### Location: Session Room 18

**SINGLE PAPER: SPECIAL EDUCATION**

**Chair**
Helene Zeeb, University of Freiburg, Germany

**Testing the Accessibility of Experimental Environments in Inclusive Science Classrooms**
Michaela Oettle, University of Education, Freiburg, Germany; Silke Mikelskis-Seifert, University of Education Freiburg, Germany; Wolfram Rollett, University of Education Freiburg, Germany; Katja Scharenberg, University of Education Freiburg, Germany

**Individual Education Plans: Just a Tool to Immunize Teaching from Parental Criticism?**
Raphael Koffmann, University of Hildesheim, Germany

**Social Inclusion in Secondary School**
Reto Luder, Zurich University of Teacher Education, Switzerland; Andre Kunz, Zurich University of Teacher Education, Switzerland; Ariane Paccaud, Pädagogische Hochschule Zürich, Switzerland; Giuliana Pastore, Pädagogische Hochschule Zürich, Switzerland

### Session Q: 2
#### Time: 09:00-10:00
#### Location: Session Room 6

**SINGLE PAPER: STUDENT LEARNING IN HIGHER EDUCATION**

**Chair**
Jake McMullen, University of Turku, Finland

**Students approaches to learning and study-related burnout in exceptional Covid19-situation**
Henna Asikainen, University of Helsinki, Finland; Anna Parpala, University of Helsinki, Finland

**Discipline-based vs project-based business curriculum: comparison of learning outcomes**
Laura Helle, University of Turku, Finland; Eero Laaksonen, University of Turku, Finland; Finland; Maria Valverde Havia, Turku University of Applied Sciences, Finland; Henny P. A. Bosveld, Open University of the Netherlands, Netherlands

**Writing retreats for master’s thesis students: a productive space**
Vibeke Ankensborg, Copenhagen Business School, Denmark

### Session Q: 3
#### Time: 09:00-10:00
#### Location: Session Room 3

**SINGLE PAPER: LITERACY AND ASSESSMENT METHODS**

**Chair**
Paul Feltes, PH Freiburg, Germany

**What we measure when measuring children’s Home Literacy Environment: A comparison of methods**
Astrid Wirth, Ludwig Maximilians-Universität München, Germany; Efsun Annac, Ludwig Maximilians-Universität (LMU), Germany; Frank Niklas, Ludwig Maximilians-Universität (LMU), Germany

**Extensions of the books-at-home index and their relevance for academic language comprehension**
Birgit Hepp, Humboldt-Universität zu Berlin, Germany; Melanie Olczyk, University of Leipzig, Germany; Anna Voletina, University of Bamberg, Germany

**The impact of the test administrator in assessing speech sound discrimination**
Renata Kiss, MTA-SZTE Research Group on the Development of Competencies, Hungary; Dóra Mokri, University of Szeged, Hungary; Benő Csapó, University of Szeged, Hungary

### Session Q: 4
#### Time: 09:00-10:00
#### Location: Session Room 10

**SINGLE PAPER: SCIENCE EDUCATION**

**Chair**
Max Scheja, Stockholm University, Sweden

**Issue-based and Action-oriented Instruction for Future Citizens: The Impact of Scientific Knowledge**
Shih-Yeh Chen, Taichung Municipal Dali High School, Taiwan; Shiang-Yao Liu, National Taiwan Normal University, Taiwan

**Digitalization in the Mirror of Time of COVID 19. How does school principals' perception change?**
Ullrike Krein, TU Kaiserslautern, Germany; Mandy Schiefner-Rohs, TU Kaiserslautern, Germany

**Person- and Situation-Specific Factors in Discounting Science via Scientific Impotence Excuses**
Tom Rosman, Leibniz Institute for Psychology (ZPID), Germany; Martin Krewe, Leibniz Institute for Psychology (ZPID), Germany; Anita Chasiotis, Leibniz Institute for Psychology (ZPID), Germany; Oliver Wedderhoff, Leibniz Institute for Psychology (ZPID), Germany
### Session Q: 5
**Time:** 09:00-10:00  
**Location:** Session Room 7

#### SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT

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<tr>
<td>Dirk Tempelaar</td>
<td>Maastricht University, Netherlands</td>
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**Toward an embodied, cultural, and social view of teacher noticing**
Thorsten Scheiner, Australian Catholic University, Australia

**New ways in video-based research: Exploring teachers’ “professional vision” with eye-tracking**
Corinne Wyss, FHWN School of Education, Switzerland; Katharina Rosenberger, University College for Teacher Education, Austria; Wolfgang Bührer, PH Zürich, Switzerland

**Development of Constructivist Teaching Competences in Teacher Education: A Video-based Intervention**
Mirjam Kocher, University of Education Zurich, Switzerland; Anna Locher, University of Education Brugg-Windisch (PH FHWN), Switzerland; Matthias Baer, University of Education Zurich (PHZH) and University of Zurich (UZH), Switzerland

### Session Q: 6
**Time:** 09:00-10:00  
**Location:** Session Room 9

#### SINGLE PAPER: MOTIVATION AND QUANTITATIVE METHODS

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<tr>
<td>Yuri Uesaka</td>
<td>The University of Tokyo, Japan</td>
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**Explaining Interindividual Stability in Knowledge – A Meta-Analysis on the Role of Motivation**
Thomas Simaoek, University of Trier, Germany; Bianca Simonsmeier, University of Trier, Germany; Michael Schneider, University of Trier, Germany

**Effects of Student-Teacher-Conferences on motivational aspects of learning**
Sonja Ertl, Friedrich-Alexander Universität, Germany; Andreas Hartinger, Universität Augsburg, Germany; Benjamin Kücherer, Universität Augsburg, Germany

**Profiles of mathematical skills and motivation among first grade students**
Heta Tuominen, University of Turku, Finland; Markku Nenivirta, University of Eastern Finland, Finland; Joho Korhonen, Åbo Akademi University, Finland; Anna Tapola, University of Helsinki, Finland; Riikka Mononen, University of Oslo, Norway

### Session Q: 7
**Time:** 09:00-10:00  
**Location:** Session Room 5

#### SINGLE PAPER: QUANTITATIVE METHODS AND PRE-SERVICE TEACHER EDUCATION

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<tr>
<td>Jonas Emanuelsson</td>
<td>University of Gothenburg, Sweden</td>
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**Empirical Relations between Communicative Skills, General Pedagogical Knowledge and Grades**
Ulrike Schwabe, DZHW - German Centre for Research on Higher Education and Science Studies, Germany; Kristina Walz, Justus-Liebig-Universität Gießen, Germany; Edith Braun, Justus-Liebig-Universität Gießen, Germany

**Sensitivity to diagnostic task potential: pre-service teachers task selection during diagnosis**
Stephanie Kron, Ludwig-Maximilians-Universität (LMU), Germany; Daniel Sommerhoff, Leibniz Institute for Science and Mathematics Education, Germany; Makee Achtner, Ludwig Maximilians-Universität (LMU), Germany; Christof Wecker, Universität Hildesheim, Germany; Matthias Siebeck, Ludwig-Maximilians-Universität (LMU), Germany; Kathleen Stürmer, Universität of Tübingen, Germany; Stefan Ufer, Ludwig Maximilians-Universität (LMU), Germany

**Supporting preservice teachers’ learning of quantitative research method with learning analytics.**
Erikko Sointu, University of Eastern Finland, Finland; Teemu Valtonen, University of Eastern Finland, Finland; Susanne Halberg, University of Eastern Finland, Finland; Sanna Väisänen, University of Eastern Finland, Finland; Laura Hiristo, University of Eastern Finland, Finland

### Session Q: 8
**Time:** 09:00-10:00  
**Location:** Session Room 1

#### SINGLE PAPER: SELF-REGULATION

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<tr>
<td>Pia Naykki</td>
<td>University of Jyväskylä, Finland</td>
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**Task or Self-Based Goals? A Goal-Setting Intervention Study within a Workplace SRL Training**
Anne Frieda Doris Kettel, Ulm University, Germany; Madita Daupke, Ulm University, Germany; Sophia Rommel, Ulm University, Germany; Anita Christina Rudi-Penzt, Ulm University, Germany; Tina Seufert, Ulm University, Germany

**Nurses’ self-regulated learning in the hospital: insights from a multi-perspective study**
Katrien Cuyvers, Spaarne Gasthuis, Netherlands; Maaike Endendijk, University of Twente, Netherlands; Catharina Van Oostveen, Spaarne Gasthuis, Netherlands; Veerle Struben, Spaarne Gasthuis, Netherlands

**What’s relationship between self-efficacy, self-regulation and performance in screen-based simulator?**
Guillaume DECORMELLE, Université Toulouse Jean-Jaurès, France; Thomas Geeraerts, Université Toulouse, France; Nathalie Huet, University of Toulouse 2, France
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<th>Time: 09:00-10:00</th>
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<tr>
<td><strong>SINGLE PAPER: MOTIVATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Bernhard Schmitz, TU Darmstadt, Germany</td>
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<td><strong>Week-to-week interplay between teachers’ motivating style and students’ engagement</strong></td>
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<td>Akaterini Michou, Bilkent University, Turkey; Athanasios Mouratidis, Hacettepe University, Greece; Servet Atlan, Bilkent University, Turkey; Johnmarshall Reeve, Australian Catholic University, Australia; Lars-Erik Malmberg, University of Oxford, United Kingdom</td>
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<td><strong>Students’ lesson-to-lesson perceptions of the three basic dimensions of instructional quality</strong></td>
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<td>Irma Talić, Bundeswehr University, Germany; Ronny Scherer, University of Oslo, Norway; Herb Marsh, Australian Catholic University, Australia; Samuel Greiff, Université du Luxembourg, Luxembourg; Jens Möller, Christian-Albrechts-Universität zu Kiel, Germany; Christoph Nöpel, University of Luxembourg, Luxembourg</td>
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<td><strong>Long-term Effects of a Learning Diary on Regulatory Processes: A Mixed-Methods Study</strong></td>
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<td>Diana Pistoll, Medical School Hamburg, Germany; Thomas Martens, Medical School Hamburg, Germany</td>
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<tr>
<td><strong>SINGLE PAPER: ACHIEVEMENT AND MOTIVATION</strong></td>
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<tr>
<td><strong>Chair</strong></td>
<td>Charalambos Charalambous, University of Cyprus, Cyprus</td>
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<tr>
<td><strong>Only performance counts? Predicting university grades through prior performance &amp; interest-major fit</strong></td>
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<td>Laura Messerer, University of Mannheim, Germany; Hanna Bürkle, University of Mannheim, Germany; Karina Karst, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany</td>
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<tr>
<td><strong>Relationships among achievement motivation, grades, and aspirations: English as a foreign language</strong></td>
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<td>Katerina Vlčková, Masaryk University, Czech Republic; Ondrej Papajcanu, Charles University in Prague, Faculty of Education, Czech Republic; Hana Vorková, Charles University in Prague, Faculty of Education, Czech Republic</td>
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<td><strong>Science Expectancy and Values across Academic Tracks: Results from Dutch PISA 2006 and 2015</strong></td>
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<td>Kate Xu, Open University of the Netherlands, Netherlands; Erik Roosken, Open Universiteit of the Netherlands, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands</td>
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<tr>
<td><strong>SINGLE PAPER: SOCIAL ASPECTS OF LEARNING AND TEACHING</strong></td>
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<td><strong>Chair</strong></td>
<td>Maximilian Knogler, Technical University of Munich (TUM), Germany</td>
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<tr>
<td><strong>Evaluating vs. Giving Feedback: Is Feedback Inflation Larger for Ethnic Minority Students?</strong></td>
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<td>Anna K Nishen, Freie Universität Berlin, Germany; Ursula Kessels, Freie Universität Berlin, Germany</td>
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<tr>
<td><strong>Global Citizenship Education in the age of digital transformation. From theory to teaching practice</strong></td>
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<tr>
<td>Ronald Tuschl, University of Graz/Department of Education Research and Teacher Education, Austria</td>
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<tr>
<td><strong>School differences in the degree to which students feel recognized by their teachers</strong></td>
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<tr>
<td>Svenja Vieluf, German Institute for International Educational Research (DIPF), Germany; Nina Ročzen, German Institute for International Educational Research (DIPF), Germany; Mojca Rožman, IEA, Germany; Ana Kozina, Pedagoški inštitut, Slovenia; Birgitte Lund Nielsen, VIA University College, Denmark; Sada Puzić, Institute for Social Research Zagreb, Croatia; Christine Sälzer, University of Stuttgart, Germany; Maria Rasmusson, MIUN, Sweden</td>
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</table>
### SINGLE PAPER: COMPUTER-SUPPORTED COLLABORATIVE LEARNING

**Chair**
Pedro Leite da Silva, ISPA-Instituto Universitário, Portugal

**Providing information on cognitive and emotional group aspects in social media learning environments**
Lisa Ollesch, University of Duisburg-Essen, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany

**Patterns of collaborative problem-solving processes in an online environment: A network approach**
Shupin Li, University of Jyväskylä, Finland; Johanna Pitsi-Tahonen, University of Jyväskylä, Finland; Päivi Häkkinen, University of Jyväskylä, Finland

**Creating presence from a distance. Comparing remote and on-site group experiences.**
Annelies Raes, KU Leuven, Belgium; Jean Heutte, CIREL, Centre Interuniversitaire de Recherche en Education de Lille, Université de Lille, France

### SINGLE PAPER: ATTITUDES, BELIEFS AND MOTIVATION

**Chair**
Sebastian Anselmann, University of Education Schwäbisch Gmünd, Germany

**Examining students’ expectancies and values with networks and directed acyclic graphs**
Hye Rin Lee, University of California Irvine, United States; Daniela Alvarez-Vargas, University of California, Irvine, United States; Xin Tang, University of Helsinki, Finland; Drew H. Bailey, University of California, United States; Ji Seung Yang, University of Maryland, United States; Naysan Safavian, University of California, Irvine, United States; Hanna Gaspard, TU Dortmund University, Germany; Sandra Simpkins, University of California, Irvine, United States; Katarina Salmela-Aro, Helsinki University, Finland; Jacquelyne S. Eccles, University of California, Irvine, United States; Allan Wigfield, University of Maryland, United States

**Networks of expectancies-values-costs in Finnish adolescents across subjects, years, and achievement**
Xin Tang, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

**The “situative nature” of expectancies and values and the predictive power of autonomy support**
Cora Parrisius, University of Tübingen, Germany; Hanna Gaspard, TU Dortmund University, Germany; Steffen Zitzmann, University of Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany

### SINGLE PAPER: HISTORY IN SECONDARY EDUCATION

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

**Developing a standardized questionnaire to assess the learning experience with eyewitness accounts**
Lisa Zachrich, University of Tübingen, Germany; Christine Bertram, University of Konstanz, Germany; Ulrich Trautwein, University of Tübingen, Germany; Wolfgang Wagner, University of Tuebingen, Germany

**Images of the past: the historical plausibility of students’ written texts, drawings and film clips**
Tessa de Leur, Amsterdam University of Applied Sciences (AUAS), Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Students’ motivation to learn history: A self-determination theory perspective**
Michiel Voet, Ghent University, Belgium; Robbe Brisard, Hogeschool Gent, Belgium; Bram De Wever, Ghent University, Belgium
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<th>Session Q: 15</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 14</th>
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<tr>
<td>ESPRESSO INVITED SYMPOSIUM: SIG 4: ENHANCING SUPPORT IN THE TRANSITION TO HIGHER EDUCATION – IN THE LIGHT OF STUDENTS’ DIVERSITY</td>
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<tr>
<td><strong>Chair</strong></td>
<td>Mikaël De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l'Enseignement Supérieur (ARES), Belgium</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Taiga Brahm, University of Tübingen, Germany</td>
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<tr>
<td><strong>Fair Enough?! Investigating the Specific Challenges of Diverse University First-Year Students</strong></td>
<td>Mikaël De Clercq, Université catholique de Louvain (UCL); Académie de Recherche et de l'Enseignement Supérieur (ARES), Belgium; Michaël Parmentier, Université Catholique de Louvain (UCL), Belgium; Florence Van Meenen, UCLouvain, Belgium</td>
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<tr>
<td><strong>Developing first-year students’ academic self-efficacy in a distance setting</strong></td>
<td>Ronja Böker, Paderborn University, Germany; Juliane Füge, Universität Paderborn, Germany; Tobias Jenert, Universität Paderborn, Germany</td>
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<tr>
<td><strong>Transitions in Higher Education for migrant students: Academic Language support in Italy and Sweden</strong></td>
<td>Sylvi Vigmo, University of Gothenburg, Sweden; Giulia Messina Dahlberg, University of Gothenburg, Sweden; Alessio Suri, University of Padova, Italy</td>
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<th>Time: 09:00-10:00</th>
<th>Location: Session Room 15</th>
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<td>SPONSORED SESSION: PROCTORIO</td>
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<tr>
<td><strong>Proctorio</strong></td>
<td>Markus Schwab, Proctorio GmbH, Germany; Melvin van Groeningen, Proctorio, Netherlands</td>
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<th>Time: 09:00-10:00</th>
<th>Location: Session Room 4</th>
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<tr>
<td>INVITED SYMPOSIUM: SIG 20: ENGAGING TEACHERS IN INQUIRY LEARNING</td>
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<tr>
<td><strong>Chair</strong></td>
<td>Koen Veer mans, University of Turku, Finland</td>
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<tr>
<td><strong>Organiser</strong></td>
<td>Wouter R. van Joolingen, Utrecht University, Netherlands</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Margus Pedaste, University of Tartu, Estonia</td>
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<tr>
<td><strong>Examining pre-service teachers’ capability to design simulation based inquiry learning activities</strong></td>
<td>Tasos Hovastias, University of Cyprus, Cyprus; Marinos-Papavridou, University of Cyprus, Cyprus; Nikoletta Xenofontos, University of Cyprus, Cyprus; Zacharias Zacharia, University of Cyprus, Cyprus</td>
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<tr>
<td><strong>A Lesson Study approach to the development of an augmented reality for biology teaching</strong></td>
<td>Wouter R. van Joolingen, Utrecht University, Netherlands; Suu Goei, Windesheim University of Applied Sciences, Netherlands; Henry Matimba, Freudenthal Institute, Utrecht University, Netherlands; Ryan Kyaw Thu Aung Ba, Nanyang Technological University, Singapore, Singapore</td>
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<tr>
<td><strong>Bringing simulations to the classroom: teachers’ perspectives</strong></td>
<td>Tomi Jaakkola, Tampere University, Finland; Koen Veermans, University of Turku, Finland</td>
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<tr>
<td><strong>Guiding student thinking through teacher questioning when learning with dynamic representations</strong></td>
<td>Antti Leh nickel, University of Jyväskylä, Finland; Markus Hähköniemi, University of Jyväskylä, Finland; Pasi Nieminen, University of Jyväskylä, Finland</td>
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<th>Keynotes III: 1</th>
<th>Time: 10:45-11:45</th>
<th>Location: Auditorium B</th>
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<tr>
<td>EARLI KEYNOTE SESSION: THE VITAL, THOUGH CHALLENGING NATURE OF SELF-REGULATED LEARNING MORE THAN EVER ACKNOWLEDGED</td>
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<tr>
<td><strong>Chair</strong></td>
<td>Ilse Hakvoort, Göteborg University, Sweden</td>
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<tr>
<td><strong>The vital, though challenging nature of self-regulated learning more than ever acknowledged</strong></td>
<td>Hilde Van Keer, Ghent University, Belgium</td>
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<th>Keynotes III: 2</th>
<th>Time: 10:45-11:45</th>
<th>Location: Auditorium A</th>
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<tr>
<td>EARLI KEYNOTE SESSION: A PRACTICAL THEORY OF TEACHING</td>
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<tr>
<td><strong>Chair</strong></td>
<td>Jonas Emanuelsson, University of Gothenburg, Sweden</td>
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<tr>
<td><strong>A Practical Theory of Teaching</strong></td>
<td>James Hiebert, University of Delaware, United States</td>
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### Session R: 1  
**Time:** 12:00-13:00  
**Location:** Session Room 8  
**SINGLE PAPER: COMPUTER-ASSISTED LEARNING**

**Chair**  
Sebastian Wurster, Johannes Gutenberg University Mainz, Germany

**Impact of audio-support on reading strategy, time, and performance in students with dyslexia**  
Carolien A. N. Knoop-van Campen, Radboud University Nijmegen, Netherlands; Danique ter Doest, Radboud University, Netherlands; Ludo Verhoeven, Radboud University Nijmegen, Netherlands; Eliane Segers, Radboud University Nijmegen, Netherlands

**How do Teachers make Sense of Formative Assessments and how can they be supported by Visualizations?**  
Sarah Bez, University of Tuebingen, Germany; Samuel Merk, University of Education Karlsruhe, Germany

**Evaluating the automatic scoring of text comprehension diagrams as feedback for monitoring accuracy**  
Héctor J. Pijeira-Díaz, Maastricht University, Netherlands; Sophia Braumann, University Utrecht, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands

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### Session R: 2  
**Time:** 12:00-13:00  
**Location:** Session Room 12  
**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN PRIMARY EDUCATION**

**Chair**  
Cristian Simoni, University of Padua, Italy

**The profiles of teacher’s professional agency development in the classroom**  
Roosa Yli-Pietilä, Tampere University, Finland; Kirsii Pyhältö, University of Helsinki, Finland; Janne Pietarinen, University of Eastern Finland, Finland

**Reference group effects on teachers’ judgements of student intelligence**  
Julius J. Weise, Saarland University, Germany; Jörm R. Sparkeft, Saarland University, Germany; Detlef H. Rost, Southwest University Chongqing, China

**Understanding oral language at school entry: dimensionality of speaking and listening skills**  
Jessica Massonnié, University College London - Institute of Education, United Kingdom; Anna Llaurado, University College London, Institute of Education, United Kingdom; Emma Sumner, University College London, Institute of Education, United Kingdom; Julie Dockrell, Institute of Education, United Kingdom

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### Session R: 3  
**Time:** 12:00-13:00  
**Location:** Session Room 7  
**SINGLE PAPER: EXPERIMENTAL STUDIES IN TEXT, GRAPHICS AND READING COMPREHENSION**

**Chair**  
Robbert Smit, University of Teacher Education St.Gallen, Switzerland

**How to learn with unorganized concept maps – Is organization highlighting the savior in need?**  
Felix Krieglstein, Chemnitz University of Technology, Germany; Sascha Schneider, Chemnitz University of Technology, Germany; Maik Beega, Chemnitz University of Technology, Germany; Günter Daniel Rey, Chemnitz University of Technology, Germany

**Elementary School Children's Mental Representations of Narrative and Expository Texts**  
Wienke Wannagat, University of Würzburg, Germany; Valentina Steinicke, University of Würzburg, Germany; Catharina Tibken, University of Würzburg, Germany; Gerhard Nieding, University of Würzburg, Germany

**A fNIRS study of static versus animated presentations processing in deaf and hearing learners**  
Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France; Sebastien Laurent, IFSTTAR, France; Laurence Paire-Ficout, Université Gustave Eiffel, France; Stephane Argin, University of Dijon, LEAD-CNRS, France; Antonio R. Hidalgo-Muñoz, University of Toulouse, CLE, France
### SINGLE PAPER: ASSESSMENT METHODS AND TOOLS

**Chair**
Susanne Seifert, University of Graz, Austria

**Assessing Critical Thinking and Metacognition in Higher Education**
Felipe López, Pontificia Universidad Católica de Chile, Chile; Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile; Víctor Muzzuto, Pontificia Universidad Católica de Chile, Chile; Mayra Contreras, Pontificia Universidad Católica de Chile, Chile; Ricardo Paredes, Pontificia Universidad Católica de Chile, Chile; Damien Gelerstein, Pontificia Universidad Católica de Chile, Chile; Ximena López, University of Huddersfield, United Kingdom; Matías Recabarren, Universidad de los Andes Chile, Chile; Pablo Chiuminatto, Pontificia Universidad Católica de Chile, Chile

**Identification of Tool User Clusters Based in a Computer-Based Office Simulation**
Sabrina Ludwig, University of Mannheim, Germany

**Without errors but not a good answer: assessing to guide progressions towards biology paradigm**
François Lombard, University of Geneva, Switzerland; Marie Sudries, University of Geneva, Switzerland; Séverine Perron, University of Geneva, Switzerland; Camille Larpin, University of Geneva, Switzerland; Laura Weiss, University of Geneva, Switzerland; Daniel K. Schneider, University of Geneva, Switzerland

### SINGLE PAPER: MATHEMATICS AND MOTIVATION

**Chair**
Evelyn Steinberg, Vetmeduni Vienna, Austria

**Gendered self-beliefs and interests: Influencing career pathways for mid-adolescent New Zealanders?**
Penelope Watson, University of Auckland, New Zealand; Gavin Brown, University of Auckland, New Zealand; Bing Mei, The University of Auckland, New Zealand; Bernhard Ertl, Bundeswehr University Munich, Germany

**Stability and change of motivation profiles in mathematics instruction in lower secondary education**
Tanja Held, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Student interest in mathematics and German: Gender differences and the role of teacher expectations**
Elsa Oppermann, University of Bamberg, Germany; Rebecca Lazarides, University of Potsdam, Germany

### SINGLE PAPER: ASSESSMENT IN STUDENT LEARNING

**Chair**
Roger Säljö, University of Gothenburg, Sweden

**The diagnostic test evaluation and the student misconception development in science**
Soeharto Soeharto, University of Szeged, Doctoral School of Education, Indonesia; Bernd Csapó, University of Szeged, Hungary

**Assessing instructional quality based on first impressions of untrained observers**
Lukas Begrich, DIPF | Leibniz Institute for Research and Information in Education, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany; Susanne Kuger, German Youth Institute (DfJ), Germany; Benjamin Caspar Fauth, University of Tübingen, Germany

**By The Teacher Side: Strategies and Practices for Student Self-assessment**
Serafina Pastore, University of Bari, Italy
### Session R: 7
**Time:** 12:00-13:00  
**Location:** Session Room 4

**SINGLE PAPER: MOTIVATION AND PSYCHOMETRICS**

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<td>Keep on watching? Context and domain specificity of interest in networks of science video watching</td>
<td>Maarten Sachsthal, University of Amsterdam, Netherlands; Brenda Jansen, University of Amsterdam, Netherlands; Thea Peetsma, University of Amsterdam, Netherlands; Maartje Raijmakers, Vrije Universiteit Amsterdam, Netherlands</td>
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<td>Perceptions of Preparedness and Success Inform Undergraduates' Feelings of Belonging</td>
<td>J. Elizabeth Richey, Carnegie Mellon University, United States; Nikki Lobczowski, Carnegie Mellon University, United States; Kevin Jarbo, Carnegie Mellon University, United States; Elise Morton, Georgia Institute of Technology, United States; Ken Koedinger, Carnegie Mellon University, United States</td>
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### Session R: 8
**Time:** 12:00-13:00  
**Location:** Session Room 6

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS**

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<td>Unravelling workplace educators’ judgement processes when assessing students’ performance</td>
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<td>Pedagogical Assessment: Relationships between Space, Active Learning, and High-order Thinking Skills</td>
<td>Irit Sasson, Tel-Hai College, Israel; Shirley Medijensky, Oranim Academic College, Shamir Institute, University of Haifa, Israel; Ilmar Yehuda, Tel Hai Academic College, Israel</td>
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<td>Using machine learning to support study selection for a meta-analysis on simulation-based learning</td>
<td>Olga Cheremkova, Ludwig Maximilian University, Germany; Ivan Melev, Ludwig Maximilian University, Germany; Frank Fischer, Ludwig-Maximilians-Universität (LMU), Germany</td>
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### Session R: 9
**Time:** 12:00-13:00  
**Location:** Session Room 16

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

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<td>Natalie Peters, TU Dresden, Fakultät Wirtschaftswissenschaften, Germany</td>
<td>Professional development preferences for blended learning in higher education teaching staff</td>
<td>Anja Garone, Vrije Universiteit Brussel, Belgium; Sarah Howard, University of Wollongong, Australia; Jack Yang, University of Wollongong, Australia; Jo Yondeur, Vrije Universiteit Brussel, Belgium; Bram Pynoo, VIVES hogeschool, Belgium; Karent Sittuyen, Hasselt University / Vrije Universiteit Brussel, Belgium</td>
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<td>Innovation and Transformational learning</td>
<td>Ilse Terpstra-Kamstra, Saxion University of Applied Sciences, Netherlands; Elis Boshuizen, Open University of the Netherlands, Netherlands</td>
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<td>The three paradoxes of professional learning</td>
<td>Rikka Hofmann, University of Cambridge, United Kingdom</td>
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### Session R: 10
**Time:** 12:00-13:00  
**Location:** Session Room 11

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, MOTIVATION AND EMOTION**

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<td>The effects of situational interest and task effort on eighth-graders’ math test performance</td>
<td>Anna Tapola, University of Helsinki, Finland; Maximilian Knogler, Technical University of Munich (TUM), Germany; Markku Niemivirta, University of Eastern Finland, Finland</td>
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<td>Longitudinal effects of perceived classroom support on students’ achievement emotions</td>
<td>Francesco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; Lara Forabloom, ISPA - Instituto Universitário / CIE - ISPA, Switzerland; Lourdes Mata, ISPA - Instituto Universitário / CIE - ISPA, Portugal</td>
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<td>Meaning in life and resilience among teachers</td>
<td>Maria Platsidou, University of Macedonia, Greece; Athena Daniilidou, University of Macedonia, Greece</td>
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### Session R: 11
**Time:** 12:00-13:00  
**Location:** Session Room 17

**SINGLE PAPER: AT-RISK STUDENTS**

**Chair**  
Franco Rau, University of Vechta, Germany

- **Facilitating novel word learning in pupils at inclusive elementary schools via iconic gestures**  
  Carina Löke, University of Würzburg, Germany; Nathalie Frey, University of Würzburg, Germany

- **Inclusive education and assessment: Teachers’ intentions to use an accommodate teaching material**  
  Mickaël Jury, Clermont Auvergne University, France; kamilla khamzina, Université Clermont Auvergne, France; Sylvette Menge, INSPE Clermont Auvergne, France; Caroline Desombre, INSPE Lille Haut-de-France, France

- **Noise-Cancelling Headphones for Students With Special Needs: A Systematic Scoping Review**  
  Pawel R. Kulawik, University of Potsdam, Germany

### Session R: 12
**Time:** 12:00-13:00  
**Location:** Session Room 3

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

**Chair**  
Alejandra Meneses, Pontificia Universidad Católica de Chile, Chile

- **Science, Maddá and ‘Ilm: The Language Divide in Scientific Information Available to Internet Users**  
  Aviv J. Sharon, Technion - Israel Institute of Technology, Israel; Kawther Zoubi, Technion – Israel Institute of Technology, Israel; Eyal Nitzany, Independent Scholar, Israel; Aylet Ilaram-Tsabari, Technion, Israel

- **It's here, are we ready? Exploring readiness for online teaching and implications for the future**  
  Sarah Howard, University of Wollongong, Australia; Jo Tondeur, Vrije Universiteit Brussel, Belgium; Ronny Scherer, University of Oslo, Norway; Fazilat Siddiq, University of South-Eastern Norway, Norway

- **Emergency remote teaching in higher education: Initial Insights into a living systematic review**  
  Victoria I. Marín Juarros, University of Lleida, Spain; Melissa Bond, EPPI-Centre, Institute of Education, University College London, United Kingdom; Svenja Bedenlier, Innovation in Learning Institute, University of Erlangen-Nuremberg, Germany; Marion Händel, University of Erlangen-Nuremberg, Germany

### Session R: 13
**Time:** 12:00-13:00  
**Location:** Session Room 2

**SINGLE PAPER: HISTORY**

**Chair**  
Rosario Palacios, Centro de Justicia Educatacional Pontificia Universidad Católica de Chile, Chile

- **Evaluating the trustworthiness of (historical) sources. Designing and testing of an intervention**  
  Maartje van der Eem, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Saskia Brand-Grüvel, University of Amsterdam, Netherlands; Carla Van Bostel, University of Amsterdam, Netherlands

- **Using analogy for teaching causal reasoning in History**  
  Jannet van Drie, University of Amsterdam, Netherlands; Gerhard Stoel, RICDE / University of Amsterdam, Netherlands; Carla Van Bostel, University of Amsterdam, Netherlands

- **Who benefits from a historical writing intervention? Empirical evidence from Secondary Schools**  
  Monika Waldis, University of Applied Sciences Northwestern Switzerland, Switzerland; Martin Nitsche, Fachhochschule Nordwestschweiz, Switzerland; Kevin van Loon, PH FHNW, Switzerland; Dominic Studer, University of Applied Sciences and Arts Northwestern Switzerland PH (FHNW), Switzerland

### Session R: 14
**Time:** 12:00-13:00  
**Location:** Session Room 5

**SINGLE PAPER: ATTITUDES AND BELIEFS**

**Chair**  
Nina Jude, University Heidelberg, Germany

- **How Can Homework Design Influence Teachers’ Beliefs? A Case Study in a Japanese High School**  
  Erik Ota, Saitama Gakuen University, Japan

- **#Uni@Home: How did media usage change during the corona semester 2020 compared to 2018?**  
  Taiga Brahm, University of Tübingen, Germany; Marina Pumpitow, University of Tübingen, Germany

- **Hungarian students’ experiences, attitudes towards traditional and COVID-induced digital education**  
### Session R: 15
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### Session S: 1
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<td><strong>The role of parents, peers, and teachers in school alienation among adolescents</strong></td>
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<td><strong>School dropout - analysis of key indicators of dropout risk</strong></td>
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<td><strong>Executive Functioning as a Predictor of Children’s Mathematics, Reading and Writing</strong></td>
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**Location:** Session Room 9  

**SINGLE PAPER: COMPETENCIES IN TEACHING AND INSTRUCTION**

**Chair**  
Anke Schmitz, Leuphana Universitaet Lueneburg, Germany

**Conceptualizing core coaching competencies for facilitating students' transition to the workplace**  
Niels van der Baan, Maastricht University School of Business and Economics, Netherlands; Irken Gast, Maastricht University, Netherlands; Simon Beausaert, Maastricht University, Netherlands; Wim Gijseleaes, Maastricht University, Netherlands

**Teaching Quality and the Attainment of Basic Competencies**  
Boris Eckstein, University of Teacher Education St. Gallen, Switzerland; Andrea B. Erzinger, University of Berne, Switzerland; Christian Bruehwiler, University of Teacher Education St. Gallen, Switzerland; Giang Pham, Pädagogische Hochschule St. Gallen, Switzerland

**Teaching reading comprehension in Austria: Do teachers do what science suggests?**  
Marcel Illitschko, IQS - Institut zur Qualitätssicherung im österreichischen Schulwesen, Austria; Antonia Bachinger, Federal Institute for the Quality Assurance in the Austrian School System, IQS, Austria; Veronika Østerbauer, IQS, Austria; Benedikt Winter, Federal Ministry of Education, Science and Research of Austria, Austria; Daniel Paasch, Federal Institute for the Quality Assurance in the Austrian School System, Austria

### Session S: 5  
**Time:** 14:30-15:30  
**Location:** Session Room 8

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY, EMOTION AND AFFECT**

**Chair**  
Kateryna Holubinka, FernUni Hagen, Germany, Germany

**First and second year education-degree students' perceived stress and perceived lack of control**  
Immaculada Martínez-García, University of Cadiz, Spain; Tine Nielsen, UCL University College, Denmark; Enrique Alastor, University of Cadiz, Spain

**Beyond math anxiety: Mood Induction of positive emotions promotes higher scores in undergraduates**  
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico

**Exploring Math Anxiety Factors and Heart Rate When Students Fail in Solving a Math Problem**  
Diego Oswaldo Camacho Vega, Universidad Autonoma de Baja California, Mexico; Gerardo Ramirez, Ball State University, United States

### Session S: 6  
**Time:** 14:30-15:30  
**Location:** Session Room 16

**SINGLE PAPER: HIGHER EDUCATION**

**Chair**  
Bernardita Munoz Chereau, University College London, United Kingdom

**Measuring medical students’ communication competence: a video-based situational judgment test**  
Sabine Reiser, University of Erfurt, Germany; Laura Schacht, University of Erfurt, Germany; Eva Thomm, University of Erfurt, Germany; Kristina Schick, Technical University of Munich, Germany; Pascal Berberat, TUM Medical Education Center, Germany; Martin Gartmeier, Technical University of Munich (TUM), Germany; Johannes Bauer, University of Erfurt, Germany

**Fostering medical communication through e-learning: Efficacy of video modelling and reflection.**  
Kristina Schick, Technical University of Munich, Germany; Laura Janssen, Technical University of Munich, Germany; Christina Figalist, Technical University of Munich (TUM), Germany; Sabine Reiser, University of Erfurt, Germany; Laura Schacht, University of Erlft, Germany; Johannes Bauer, University of Erfurt, Germany; Pascal Berberat, TUM Medical Education Center, Germany; Martin Gartmeier, Technical University of Munich (TUM), Germany

**Interpreter-mediated consultations with simulated patients – a digital solution**  
Mini Ruiz, Karolinska Institutet, Sweden; Anna Sundelin, Karolinska Institute, Sweden
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**SINGLE PAPER: COGNITIVE SKILLS IN MATHEMATICS**

**Chair**
Winnie-Karen Giera, Institut für Germanistik, University Potsdam (Germany), Germany

Adaptive use of subtraction by addition by 4th- to 6th-graders in multidigit subtraction.
Stijn Van Der Auwera, KU Leuven, Centre for Instructional Psychology and -Technology, Belgium; Joke Torbeyns, KU Leuven, Belgium; Bert De Smidt, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium

Exploring relations between EF and math: Implications of modeling on research, theory, and practice
Andrew Ribner, University of Pittsburgh, United States

Understanding longitudinal relationships between linguistic, mathematical, and working memory skills
Nurit Viesel-Nordmeyer, Technische Universität Dortmund, Germany; Ute Ritterfeld, TU Dortmund University, Germany; Carina Lüke, University of Würzburg, Germany; Camilla Crasawa, TU Dortmund University, Germany; Anja Starke, University of Bremen, Germany

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

**Chair**
Sina Fackler, Leibniz-Institute for Educational Trajectories (LIfBi), Germany

Examining structural relations among motivation, behavior, and performance in writing
Ana Camacho, University of Porto and Polytechnic Institute of Porto, Portugal; Fien De Smidt, Ghent University, Belgium; Pietro Boscolo, Università di Padova, Italy; Hilde Van Keer, Ghent University, Belgium

The impact of individual and parental factors on the job satisfaction of adolescents
Silke Luttenberger, University College of Teacher Education Styria, Austria; Manuela Paeochter, University of Graz, Austria

Exploring inductive reasoning, scientific reasoning and science motivation in Vietnam students
De Vo, University of Szeged, Doctoral School of Education, Hungary

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**SINGLE PAPER: EDUCATIONAL TECHNOLOGY**

**Chair**
Felipe López, Pontificia Universidad Católica de Chile, Chile

Scaffolding augmented reality learning: A systematic review of the literature
Yiannis Georgiou, Cyprus University of Technology / Cyprus Center for Environmental Research & Education, Cyprus; Eleni Kyza, Cyprus University of Technology, Cyprus

Explaining science teachers` intentions to use augmented reality
Juan Garzón, Universidad Católica de Oriente, Colombia; Hüseyin Ateş, Kırşehir Ahi Evran University, Turkey

Collaborative and individual learning in an augmented reality escape room game
Josef Buchner, University of Duisburg-Essen, Germany; Michael Kieres, University of Duisburg-Essen, Germany

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**SINGLE PAPER: DEVELOPMENTAL PROCESSES**

**Chair**
Lea Eldstål-Ahrens, University of Gothenburg, Sweden

Development of students' social support profiles and association with students' study wellbeing
Sanna Ulmanen, Tampere University, Finland; Tiina Soini-Ikonen, University of Tampere, Finland; Janne Pietarinen, University of Eastern Finland, Finland; Kira Pyhältö, University of Helsinki, Finland

Brokerage and School Improvement: A Systematic Review of Contexts, Theories, Methods and Effects
Beat Rechtsteiner, University of Zurich, Switzerland; Andrea Wültschleger, University of Zurich, Switzerland; Katharina Maag Merki, University of Zurich, Switzerland; Eva Kyndt, University of Antwerp, Belgium

The influence of emotional challenges on students' professional becoming – a comparative study
Linda Barman, The Royal Institute of Technology (KTH), Sweden; Maria Weurander, Stockholm University, Sweden; Henrik Lindqvist, Linköping University, Sweden; Anna Lena Lön, Karolinska Institutet, Sweden; Astrid Seeberger, Karolinska Institutet, Sweden; Håkan Hult, Karolinska Institutet, Sweden; Robert Thornberg, Linköping University, Sweden; Annika Wernerson, Karolinska Institutet, Sweden
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<td>ANASTASIA SKARPETI, NTNU - Norwegian University of Science and Technology, Norway</td>
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<td><strong>Intuitive Rules in the Physics’s Laboratory</strong></td>
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<td>Ida Kukliansky, Ruppin Academic Center, Israel</td>
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<td><strong>Scientific reasoning and science knowledge: Findings from a 4-year longitudinal study in high school</strong></td>
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<td>Christopher Osterhaus, University of Vechta, Germany; Susanne Koerber, University of Education Freiburg, Germany; Kristin Nyberg, University of Education Freiburg, Germany; Beate Sodian, Ludwig-Maximilians-Universität (LMU), Germany</td>
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<td><strong>Curiosity and science competencies in high school: A four-year-longitudinal study</strong></td>
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<td>Susanne Koerber, University of Education Freiburg, Germany; Christopher Osterhaus, University of Vechta, Germany; Kristin Nyberg, University of Education Freiburg, Germany</td>
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<th>Session S: 12</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 10</th>
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<tbody>
<tr>
<td><strong>SINGLE PAPER: ASSESSMENT AND EVALUATION</strong></td>
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<td><strong>Chair</strong></td>
<td>Marijke Veugen, Wageningen University and Research Centre, Netherlands</td>
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<td><strong>Teachers’ conceptions of assessment literacy</strong></td>
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<td>Kitty Meijer, HU University of Applied Sciences Utrecht; Open University of the Netherlands, Netherlands; Liesbeth Baartman, Utrecht University of Applied Sciences, Netherlands; Marjan Vermeulen, Heerlen Open Universiteit, Netherlands; Elly de Buijn, Hogeschool Utrecht / OU, Netherlands</td>
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<td><strong>Receiver proactive roles and natures of feedback in dialogic peer feedback</strong></td>
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<td>Qiyun Zhu, Guangdong University of Foreign Studies, China</td>
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<td><strong>Assessment Literacy, Data Use, and Teacher Decision-making: A Feasible Balance?</strong></td>
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<td>Serafina Pastore, University of Bari, Italy</td>
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<th>Session S: 13</th>
<th>Time: 14:30-15:30</th>
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<tr>
<td><strong>SINGLE PAPER: CONTENT ANALYSIS</strong></td>
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<td><strong>Chair</strong></td>
<td>Engin Ader, Boğaziçi University, Turkey</td>
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<td><strong>Standing up for physically active learning.</strong></td>
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<td>HQ Chim, Maastricht University, Netherlands</td>
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<td><strong>Tensions faced by social workers accompanying refugees’ professional integration in Switzerland</strong></td>
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<td>Stéphanie Cardoso, Educational Sciences Section, Switzerland</td>
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<td><strong>A review of student-created teaching materials: Types, data sources and learning-related matters</strong></td>
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<td>Jesús Ribosa, UAB Universitat Autònoma de Barcelona, Spain; David Duran Gisbert, Universitat Autònoma de Barcelona, Spain</td>
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<th>Session S: 14</th>
<th>Time: 14:30-15:30</th>
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<tr>
<td><strong>SINGLE PAPER: GAME-BASED LEARNING</strong></td>
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<td><strong>Chair</strong></td>
<td>Perry Klein, The University of Western Ontario, Canada</td>
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<td><strong>Self-reflection increases information usage in a digital serious game</strong></td>
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<td>Johannes Steinrücke, University of Twente, Netherlands; Bernard Veldkamp, University of Twente, Netherlands; Ton de Jong, University of Twente, Netherlands</td>
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<td><strong>Indicators for adaptive scaffolding in a medical emergency game</strong></td>
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<td>Tjitske Faber, Erasmus MC, Netherlands; Mary E.W. Dankbaar, Erasmus MC, Netherlands; Rob Kerkert, Erasmus University Rotterdam, Netherlands; Walter van den Broek, Erasmus MC, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands</td>
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<td><strong>Do Learning Gains and Problem-Solving Success Predict Reflection Duration in Game-based Learning?</strong></td>
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<td>Daryn Dever, University of Central Florida, United States; Roger Azevedo, University of Central Florida, United States</td>
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### Session S: 15
**Time:** 14:30-15:30  
**Location:** Session Room 3

**SINGLE PAPER: EARLY CHILDHOOD EDUCATION**

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<tr>
<th>Chair</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 3</th>
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| Chair | Tijs Rotsaert, Ghent University, Belgium | Visual images in biology books for young children: Semiotic analysis and pedagogical implications  
Vasilia Christidou, Aristotle University of Thessaloniki, Greece; Maria Koutsikou, University of Thessaly, Greece |
| Title | Understanding Grade One Student’s Transitional Competencies Throughout a Picture Book Intervention | Wan Yi Eva Liu, The University of Hong Kong, Hong Kong; Wai Ming Cheung, The University of Hong Kong, Hong Kong |
| Title | Post-Digital Block Play in a Nordic Pre-School | Kenneth Petterson, University of Oslo, Faculty of Education, Norway; Hans Christian Arnseth, University of Oslo, Norway; Kenneth Silseth, University of Oslo, Norway |

### Session S: 16
**Time:** 14:30-15:30  
**Location:** Session Room 2

**SINGLE PAPER: WORKPLACE LEARNING**

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<tr>
<th>Chair</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 2</th>
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</table>
| Chair | Alberto Nagle Cajes, Independent Consultant, Uruguay | Stress of experts and novices in the flight simulator: Is it order of scenarios that matter?  
Joni Lämsä, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Katriina Eerikäinen, University of Jyväskylä, Finland; Ville Helatala, University of Jyväskylä, Finland; Arto Heilo, Finnair Flight Academy, Finland; Jooni Helse, University of Jyväskylä, Finland; Tommi Kärkkäinen, University of Jyväskylä, Finland; Eemila Lammi, University of Jyväskylä, Finland; Ari Tuhkala, University of Jyväskylä, Finland; Ilkka Tynnyrinen, Finnair Flight Academy, Finland; Matti Virola, University of Jyväskylä, Finland |
| Title | Categorisation as interprofessional design work in health | Christopher Sadorge, University of Oslo, Faculty of Education, Norway; Monika Nerland, University of Oslo, Norway; Asa Makitalo, University of Gothenburg, Sweden |
| Title | Impact of clinical leadership professional development on individuals and organisations | Rikka Hofmann, University of Cambridge, United Kingdom; Jan Vermunt, Eindhoven University of Technology, Netherlands |

### Session S: 17
**Time:** 14:30-15:30  
**Location:** Session Room 15

**INVITED SYMPOSIUM: MEET THE EARLI EDITORS**

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<tr>
<th>Chair</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 15</th>
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</table>
| Chair | Piet Van den Bossche, University of Antwerp, Belgium | Learning and Instruction  
Lars-Erik Malmberg, University of Oxford, United Kingdom |
| Title | Educational Research Review | Hans Gruber, University of Regensburg, Germany |
| Title | Frontline Learning Research | Thomas Martens, Medical School Hamburg, Germany |
| Title | New Perspectives on Learning and Instruction | Isabel Raemdonck, Université Catholique de Louvain, Belgium |

### Session S: 18
**Time:** 14:30-15:30  
**Location:** Session Room 11

**SYMPOSIUM: TEACHER MOTIVATION, TEACHING AND STUDENT MOTIVATION: EMPIRICAL PERSPECTIVES**

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<th>Chair</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 11</th>
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</table>
| Chair | Rebecca Lazarides, University of Potsdam, Germany | Beginning teachers’ intrinsic orientation for the profession and its relation to teaching quality  
Xiangyu Feng, University of Groningen, Netherlands; Michelle Helms-Lorenz, University of Groningen, Netherlands; Ridwan Maulana, GIeN - University of Groningen, Netherlands; Ellen Jansen, University of Groningen, Netherlands |
| Title | Identifying teachers’ motivational profiles and their consequences for teaching quality | Désirée Thommen, University of Zurich, Institute of Education, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Anna-Katharina Paarstius, Institut für Erziehungswissenschaft, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland |
| Title | The relative strength of relations between teacher motivation and teaching quality dimensions | Rebecca Lazarides, University of Potsdam, Germany; Ulrich Schiefele, University of Potsdam, Germany |
| Title | Teachers’ occupational commitment, school resources and teaching quality | Rebecca Collie, University of New South Wales, Australia |
### Session T: 1  
**Time:** 15:45-16:45  
**Location:** Session Room 11

**ESPEROSO INVITED SYMPOSIUM: SIG 27: THE PITFALLS AND PROMISES OF ONLINE COLLECTION OF PROCESS DATA**

**Chair**  
Leen Catrysse, Open Universiteit Nederland, Netherlands

**Organisers**  
Leen Catrysse, Open Universiteit Nederland, Netherlands; Ellen Kok, Utrecht University, Netherlands

**Discussant**  
Thomas Martens, Medical School Hamburg, Germany

**Processing strategies in learning from video: From the lab to a COVID-proof distance-based study**  
Marjin Gijsen, University of Antwerp, Belgium; Leen Catrysse, Open Universiteit Nederland, Netherlands; Sven De Maeyer, Antwerp University, Belgium; David Gijbels, University of Antwerp, Belgium

**Measuring electrodermal activity (EDA) with smart rings before and during COVID-19**  
Lisa Postareff, HAMK University of Applied Sciences, Finland; Petri Nokelainen, Tampere University, Finland; Anna Parpala, University of Helsinki, Finland; Heta Rintala, Häme University of Applied Sciences, Finland

**Webcam-based eye-tracking in educational sciences: Possibilities and some experiences**  
Ellen Kok, Utrecht University, Netherlands

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### Session T: 2  
**Time:** 15:45-16:45  
**Location:** Session Room 8

**ESPEROSO INVITED SYMPOSIUM: SIG 25: RE-THEORIZING LEARNING AND RESEARCH METHODS IN LEARNING RESEARCH**

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

**Organisers**  
Antti Rajala, University of Oulu, Finland; Giuseppe Ritella, University of Helsinki, Finland

**Discussant**  
Peter David Renshaw, The University of Queensland, Australia

**Utopian methodology: Adressing the social and ecological crises in research on learning**  
Antti Rajala, University of Oulu, Finland; Alfredo Jornet, University of Oslo, Department of Teacher Education and School Research, Spain; Inny Accioly, Universidade Federal Fluminense, Brazil

**Relating with the more-than-human world: Extending sociocultural theorizing with posthumanism**  
Kristina Kumpulainen, University of Helsinki, Finland

**Learning in and across digital/physical spaces and time: Methodological and theoretical explorations**  
Giuseppe Ritella, University of Helsinki, Finland

**Longitudinal social network analysis: a tool to examine social capital building in higher education**  
Jasperina Brouwer, University of Groningen, Netherlands; Dominik E. Froehlich, University of Vienna, Austria

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### Session T: 3  
**Time:** 15:45-16:45  
**Location:** Session Room 18

**PANEL DISCUSSION: SUPPORTING CREATIVE MINDS – FUNDING OPPORTUNITIES AT THE EUROPEAN RESEARCH COUNCIL**

**Chair**  
Anne Nielsen, European Research Council Executive Agency, Belgium

**Supporting creative minds – Funding opportunities at the European Research Council**  
KATRIEN VAN POECK, Ghent University & Uppsala University, Belgium; Pedro Carneiro, University College London, United Kingdom

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### Session T: 4  
**Time:** 15:45-16:45  
**Location:** Session Room 12

**PANEL DISCUSSION: BRIDGING RESEARCH AND PRACTICE: SELF-REGULATED LEARNING AND TEACHING DURING THE GLOBAL PANDEMIC**

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

**Bridging Research and Practice: Self-Regulated Learning and Teaching during the Global Pandemic**  
Reinhard Pekrun, Ludwig Maximilians-Universität, Germany; Alynson Hadwin, University of Victoria, Canada; Roger Azvedo, University of Central Florida, United States; Lili Safaty, University of Haifa, Faculty of Education, Israel; Insa Linnerud, Benedicteus-Realschule Tutzing (teacher in Germany), Germany; Fani Lauermann, TU Dortmund University, Germany; Moira Hood, University of Victoria, Canada

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### Session T: 5  
**Time:** 15:45-16:45  
**Location:** Session Room 13

**PANEL DISCUSSION: TRANSFORMING LEARNING: PARTNERING WITH UNDERGRADUATE STUDENTS TO TACKLE WORLD CHALLENGES**

**Chair**  
Tracy Zou, The University of Hong Kong, Hong Kong

**Transforming Learning: Partnering with Undergraduate Students to Tackle World Challenges**  
Gray Kochhar-Lindgren, The University of Hong Kong, Hong Kong; Lily Leung, University of Hong Kong, Hong Kong; Benita Chick, Encompass HK; Hong Kong; Mei Tin Ming, The University of Hong Kong, Hong Kong
# Session T: 6
**Time:** 15:45-16:45  
**Location:** Session Room 17

## Panel Discussion: Doctoral Education during the Pandemic and Beyond: Challenges and Strategies

**Chair:** Brian Cahill, Leibniz Information Centre for Science and Technology, Germany

**Doctoral education during the pandemic and beyond: challenges and strategies**
Gábor Kismihók, Leibniz Information Centre for Science and Technology, Germany; Inge Van der weijden, Leiden University, Netherlands; Alexander Hasgall, European University Association, Switzerland; Janet Metcalfe, Vitae, United Kingdom

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# Session T: 7
**Time:** 15:45-16:45  
**Location:** Session Room 5

## Symposium: New Ways of Measuring, Analysing and Scaffolding Self-Regulated Learning

**Chair:** Joep van der Graaf, Radboud University Nijmegen, Netherlands

**Organiser:** Joep van der Graaf, Radboud University Nijmegen, Netherlands

**Discussant:** Philip Winne, Simon Fraser University, Canada

### Improving the granularity for the measurement of self-regulated learning using multi-channel data
Yizhou Fan, The University of Edinburgh, United Kingdom; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Johanna Moore, The University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

### Understanding Self-Regulated Learning Processes through Process Mining
Lyn Lim, Technical University of Munich, Germany; Maria Bannert, Technical University of Munich (TUM), Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, The University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia

### How Self-Regulated Learning Affects Different Learning Outcomes
Joep van der Graaf, Radboud University Nijmegen, Netherlands; Lyn Lim, Technical University of Munich, Germany; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, The University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands

### Visualising student’s learning strategies in online learning to support self-regulation
Shaveen Singh, Monash University, Australia; Maden Raikovic, Monash University, Australia; Yizhou Fan, The University of Edinburgh, United Kingdom; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Jonathan Kilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, The University of Edinburgh, United Kingdom; Dragan Gasevic, Monash University, Australia; Maria Bannert, Technical University of Munich (TUM), Germany; Inge Molenaar, Radboud University Nijmegen, Netherlands; Bas Giesbers, Erasmus University Rotterdam, Netherlands

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# Session T: 8
**Time:** 15:45-16:45  
**Location:** Session Room 16

## Single Paper: Interdisciplinary Studies

**Chair:** Fleur van Gils, KU LEUVEN, Belgium

### Optimizing Students’ Mental Health and Academic Success: AI-Enhanced Life Crafting
Izaak Dekker, Erasmus University Rotterdam, Netherlands; Bettina De Jong, Erasmus University Rotterdam, Netherlands; Michaëla Schippers, Erasmus University Rotterdam, Netherlands; Monique De Brouj, Erasmus University Rotterdam, Netherlands; Andreas Alexiou, University of Tilburg, Netherlands; Bas Giesbers, Erasmus University Rotterdam, Netherlands; Andreas Alexiou, University of Tilburg, Netherlands; Bas Giesbers, Erasmus University Rotterdam, Netherlands

### Relevance of Spatial Visualization Ability for Study Achievement in different STEM study programs
Nils Nolte, University of Duisburg-Essen, Germany; Fleischer Fleischer, Ruhr-University Bochum, Germany; Christian Spoden, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Detlev Leutner, University of Duisburg-Essen, Germany

### Psychological stress = physiological stress? An experimental study with prospective teachers
Sara Becker, Pädagogische Hochschule Freiburg, Germany; Birgit Spinath, Heidelberg University, Germany; Beate Ditzen, Heidelberg University, Germany; Tobias Dörfler, Heidelberg University of Education, Germany

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## Session T: 9
**Time:** 15:45-16:45  
**Location:** Session Room 9

**Chair:** Janneke Sleenhof, Eindhoven School of Education, Netherlands

### SINGLE PAPER: READING COMPREHENSION AND SECONDARY DATA ANALYSIS

**What Makes Mathematics Difficult for Adults? The Role of Reading Components in Solving Math Items**
Nadine Cruz Neri, University of Hamburg, Germany; Jenny Wagner, University of Hamburg, Germany; Jan Retelsdorf, University of Hamburg, Germany

**Practices with digital reading devices in the language arts classroom: evidence from NAEP 2017**
Ladislao Salmeron, University of Valencia, Spain; Cristina Vargas, University of Valencia, Spain; Pablo Delgado, University of Valencia, Spain; Naomi Baron, American University, United States

**Gender effects of motivational and emotional orientations on math, science, and reading achievement**
Frank Reinhold, University of Education Freiburg, Germany; Jennifer Diedrich, Technical University of Munich, Germany; Sarah Hofer, University of the Federal Armed Forces in Munich, Germany; Anja Schiepe-Tiska, Technical University of Munich, Germany

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

**Chair:** Inga Wagner, University of Koblenz-Landau, Germany

### SINGLE PAPER: DESIGN-BASED RESEARCH

**Design principles for argumentative writing focusing on strategic and conversational support**
Yana Landrieu, Ghent University, Belgium; Fien De Smedt, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Knowledge building process and learning outcomes of collaborative research ethics training**
Anu Tammeleht, University of Helsinki, Estonia; Erika Löttström, University of Helsinki, Finland; Maria Jesus Rodriguez-Triana, Tallinn University, Estonia; Kairi Koort, Tallinn University, Estonia

**Facilitating conceptual change when high school students are taught about cell membranes**
Leonie Johann, NORD University, Norway; Fredrik Rusk, Nord University, Norway; Jorge Gross, Otto-Friedrich-Universität Bamberg, Germany; Michael Reiss, University College London, United Kingdom

## Session T: 11
**Time:** 15:45-16:45  
**Location:** Session Room 14

**Chair:** Camilla Björklund, University of Gothenburg, Sweden

### SINGLE PAPER: INSTRUCTIONAL DESIGN IN MATHEMATICS

**Toddlers' numerical development: modes of representation in interactive picture book reading**
Camilla Björklund, University of Gothenburg, Sweden; Hanna Palmér, Linnaeus University, Sweden

**Eye-tracking for investigating teachers’ diagnostic judgments from a process-view**
Saskia Schreiter, PH Heidelberg, Germany; Markus Vogel, University of Education Heidelberg, Germany; Tobias Doerfler, PH Heidelberg, Germany; Markus Rehm, PH Heidelberg, Germany

**Preservice preschool teachers’ mathematical questions during interactive book reading**
Emke Op ‘t Eynde, KU LEUVEN, Belgium; Fien Depaepe, KU Leuven, Belgium; Lieven Verschaffel, KU Leuven, Belgium; Joke Torbevns, KU Leuven, Belgium

## Session T: 12
**Time:** 15:45-16:45  
**Location:** Session Room 1

**Chair:** Maria Theobald, DIPF | Leibniz Institute for Research and Information in Education, Germany

### SINGLE PAPER: TEACHING AND INSTRUCTION IN EARLY CHILDHOOD EDUCATION

**To make or not to make? The effect of expected implementation on children's idea selection**
Kim van Broekhoven, Radboud University, Netherlands; Barbara Belfi, Maastricht University, Netherlands; Lex Borghans, Maastricht University, Netherlands

**Unfolding interaction during reading with at-risk and not at-risk first and second graders**
Silke Vanparys, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

**Dialogic book reading in early childhood classrooms**
Chiel van der Veen, VU University Amsterdam, Netherlands; Mireille Smits, Vrije Universiteit Amsterdam, Netherlands; Femke van der Witt, Vrije Universiteit Amsterdam, Netherlands
Session T: 13  |  Time: 15:45-16:45  |  Location: Session Room 10
ICT DEMONSTRATION: TELEPRESENCE ROBOTS IN HIGHER EDUCATION: A LONGITUDINAL STUDY

Telepresence Robots in Higher Education: A Longitudinal Study
Fabian Wolff, Universität Koblenz-Landau, Germany; Jens Möller, University of Kiel, Germany

Session T: 14  |  Time: 15:45-16:45  |  Location: Session Room 4
ICT DEMONSTRATION: ASYNCHRONOUS ONLINE VIDEO-BASED MODULES TO SUPPORT MATHEMATICS TEACHERS’ PROFESSIONAL LEARNING

Asynchronous Online Video-based Modules to Support Mathematics Teachers’ Professional Learning
Angela Knotts, WestEd, United States; Nanette Seago, WestEd, United States

Session T: 15  |  Time: 15:45-16:45  |  Location: Session Room 2
ICT DEMONSTRATION: COMMUNICATING SUSTAINABILITY: DEVELOPMENT AND EVALUATION OF AN ONLINE COURSE ON ACCESSIBLE WRITING

Communicating Sustainability: Development and Evaluation of an Online Course on Accessible Writing
Alessandra Rossetti, Universiteit Antwerpen, Belgium; Luuk Van Waes, University of Antwerp, Belgium

Session T: 16  |  Time: 15:45-16:45  |  Location: Session Room 15
INVITED SYMPOSIUM: SIG 12: THE ROLE OF NON-ACADEMIC SKILLS IN WRITING

The role of executive functions in writing: A cross-sectional study across 7 years of schooling
Naymé Salas, Universitat Autònoma de Barcelona, Spain

Writer profiles: Occurrence and relationship with student characteristics and writing outcomes
Fien De Smedt, Ghent University, Belgium; Yana Landrieu, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium

Exploring the relationship between mindfulness and writing skills in sixth graders
Carolina Cordeiro, University of Porto, Portugal; Sofia Magalhães, University of Porto, Portugal; Andreia Nunes, University of Porto, Portugal; Thierry Olive, CNRS & Université de Poitiers, France; Sã o Luís Castro, University of Porto, Portugal; Teresa Limpo, University of Porto, Portugal

Session U: 1  |  Time: 17:30-18:30  |  Location: Session Room 8
SYMPOSIUM: EARLY CHILDHOOD TEACHERS’ PROFESSIONAL COMPETENCE IN MATHEMATICS

Preschool teachers’ mathematical pedagogical content knowledge and classroom practice
Febe Demedts, University of Leuven - Campus KULAK, Belgium; Fien Depaepe, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium

Performance expectations and learning objectives in early mathematics – Austria and Switzerland
Karoline Rettenbacher, Karl-Franzens-Universität Graz, Austria; Lars Eichen, University of Graz, Austria; Manfred Pfittner, Zurich University of Teacher Education, Switzerland; Catherine Walter-Laager, University of Graz, Austria

Development of Early Childhood Teachers’ Knowledge and Emotions in Mathematics
Lars Jenßen, Humboldt-Universität zu Berlin, Germany; Michael Eid, Freie Universität Berlin, Germany; Markus Szczesny, TU Braunschweig, Germany; Katja Eilerts, Humboldt-Universität zu Berlin, Germany; Sigrid Blömeke, Centre for Educational Measurement at the University of Oslo (CEM), Norway

Cognitive and affective-motivational dispositions and children's achievement in mathematics
Lara Pohle, Humboldt-Universität zu Berlin, Germany; Lars Jenßen, Humboldt-Universität zu Berlin, Germany; Katja Eilerts, Humboldt-Universität zu Berlin, Germany
### SYMPOSIUM: YOUTUBE IN THE CLASSROOM AND BEYOND: COMPREHENSION AND EVALUATION OF ONLINE VIDEOS ON SCIENCE TOPICS

| Chair            | Ladislao Salmeron, University of Valencia, Spain |
| Organiser        | Marc Stadtler, University of Bochum, Germany     |
| Discussant       | Carita Kili, Tampere University, Finland         |

**‘Youtubers’ as teachers: Are streaming videos suitable for learning in Secondary education?**
Ladislao Salmeron, University of Valencia, Spain; Inmaculada Fajardo, University of Valencia, Spain; Álvia Vicenta, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Olstein Ammarkrud, University of Oslo, Norway; Silvia Maria Chirnez, University of Valencia, Spain; Marco Gómez Puerta, University of Alicante, Spain; Ana Pérez, University of Granada, Spain; Nadina Gómez-Merino, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Pablo Delgado, University of Valencia, Spain

**Learning about science on YouTube: Simplified language affects laypeople’s evaluation of the content**
Marc Stadtler, University of Bochum, Germany; Lisa Scharrer, Goethe University Frankfurt, Germany; Katharina Bauer, University of Bochum, Germany

**Expert but not persuasive: do students consider source when processing conflicting videos?**
Colin Lescarret, CLE; LTC, University of Toulouse, France; Franck Amadieu, University of Toulouse, France; Valerie Le Floch, University of Toulouse, CLE, France; Jean-Christophe Saldavong, University of Toulouse, CLE, France; Jean-Michel Bouchex, University of Dijon, LEAD-CNRS, France; André Tricot, University of Montpellier, France

**Video as a Modality for Introducing Students to Affectively-Laden Issues in Bioethics**
Gala Campos Oaxaca, The Pennsylvania State University, United States; Alexandra List, The Pennsylvania State University, United States; Hye Yeon Lee, The Pennsylvania State University, United States; Bailing Lyu, The Pennsylvania State University, United States; Ana Pérez, University of Alicante, Spain; Sanna Järvelä, University of Oulu, Finland; Tiina Törmänen, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Tim Mainhard, Utrecht University, Netherlands; Monika Borker, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

### SYMPOSIUM: TEACHER-CHILD RELATIONSHIPS AND RELATED FACTORS IN TODDLER AND PRE-SCHOOL CLASSROOMS

| Chair            | Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland |
| Organiser        | Eija Pakarinen, University of Jyväskylä, Finland        |
| Discussant       | Karine Vercruyssen, KU Leuven, Belgium                 |

**Associations between the Teacher-Child Relationship and Children’s Expressive Vocabulary Development**
Jessica Alves, Faculty of Psychology and Educational Sciences of the University of Porto, Portugal; Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Joana Cadima, University of Porto, Portugal

**Teacher-child interactions as a context for development of social competence in toddler classrooms**
Jenni Salminen, University of Jyväskylä, Finland; Eija Pakarinen, University of Jyväskylä, Finland; Anna Maia Polkka, University of Jyväskylä, Finland; Marja-Leena Laakso, University of Jyväskylä, Finland; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland

**Child-, group- and teacher predictors of child-teacher relationships in Greek pre-schools**
Mirna Sumatic, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom; Athanasios Gregoriadis, Aristotle University of Thessaloniki, Greece; Vasilis Grammatikopoulos, International Hellenic University, Greece; Evridiki Zachopoulou, International Hellenic University, Greece

### SYMPOSIUM: LOOKING TO THE ROLE OF INTERACTION PROCESSES FOR LEARNING-RELATED EMOTIONS

| Chair            | Hanna Jarvenoja, University of Oulu, Finland |
| Organiser        | Jonna Malmberg, University of Oulu, Finland  |
| Discussant       | Jeff Greene, University of North Carolina, United States |

**Emotion Regulation in Socio-Emotionally Challenging Learning Contexts: A Case Study Approach**
Mehdi Kazemitabar, Tehran University, Iran; Susanne Lapie, McGill University, Canada

**How Individual Students’ Monitoring Events Occur During Collaborative Learning - A Network Analysis**
Jonna Malmberg, University of Oulu, Finland; Mohammed Saqr, University of Eastern Finland, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Jarvela, University of Oulu, Finland

**Group members’ situational socio-emotional conditions during collaborative learning**
Tina Törmänen, University of Oulu, Finland; Hanna Jarvenoja, University of Oulu, Finland; Sanna Jarvela, University of Oulu, Finland

**Teachers’ Physiological Effort and Behavioral Instability Undermine Positive Effects of Support**
Tim Mainhard, Utrecht University, Netherlands; Monika Borker, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands
Session U: 5
Time: 17:30-18:30
Location: Session Room 4

POSTER PRESENTATION: LEARNING TECHNOLOGIES

Chair
Stephanie Pieschl, Technical University of Darmstadt, Germany

Engagement and Formative Assessment Mediate the Relation between Attendance and Academic Performance
Chang Lu, University of Alberta, Canada; Maria Cutumisu, University of Alberta, Canada

Outcomes of a large-scale development project about differentiation and digital technologies
Johanna Lundqvist, Mälardalen University, Sweden; Karin Franzen, Karlstads University, Educational Studies, Sweden; Gun-Marie Wetso, Mälardalens University, Sweden; Margareta Sandström, Mälardalens högskola, Sweden; Ulrika Larsdotter Bodin, Mälardalen University, Sweden; Petra Runström Nilsson, Mälardalen University, Sweden

Exploring students' emotions during learning with adaptive learning technology: a multimodal approach
Anne Horvers, Radboud University Nijmegen, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Tibor Bosse, Radboud University Nijmegen, Netherlands; Ard Lazonder, Radboud University, Netherlands

Measuring the Development of ICT Skills for Personalized Learning
Kevin Askernans, Open University, Netherlands; Marjoke Bakker, Hogeschool van Arnhem en Nijmegen (HAN), Netherlands; Pierre Gorissen, HAN University of Applied Sciences, Netherlands; Gino Camp, Wolten Institute - Open University of the Netherlands, Netherlands; Anne-Marieke van Loon, HAN University of Applied Sciences, Netherlands; Marijke Kral, HAN University, Netherlands

Teacher evaluation of technology usage and assessment of an educational digital platform
Natalia Lara Nieto-Márquez, Universidad Camilo José Cela, Spain; Manuel Iglesias Solán, Universidad Complutense de Madrid, Spain; Elisa Martín Dobón, Universidad Complutense de Madrid, Spain

Digital competencies of literacy educators and the effective use of an innovative search engine
Mareike Khohl, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Sarah Weiss, Department of Linguistics, University of Tübingen, Germany; Heiko Holz, Department of Linguistics, University of Tübingen, Germany; Detmar Meurers, Department of Linguistics, University of Tübingen, Germany; Simone Jambor-Fahlen, Mercator Institute for Literacy and Language Education, Cologne, Germany; Nadine Mayer, Mercator Institute for Literacy and Language Education, Cologne, Germany; Michael Becker Mrozek, Mercator Institute for Literacy and Language Education, Cologne, Germany; Josef Schrader, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany; Hannes Schröter, German Institute for Adult Education - Leibniz Centre for Lifelong Learning, Germany

Session U: 6
Time: 17:30-18:30
Location: Session Room 13

POSTER PRESENTATION: MATHEMATICS IN EARLY CHILDHOOD EDUCATION

Chair
Laurie Delnoij, Open University, Netherlands

The relation between Structural Quality and Math Talk in Early Childhood Education
Johanna Klemm, Otto-Friedrich-Universität Bamberg, Germany; Simone Lehrl, Otto-Friedrich-Universität Bamberg, Germany; Anja Linberg, German Youth Institute, Germany; Dorothea Dornheim, Otto-Friedrich-Universität Bamberg, Germany; Nadine Besser, Otto-Friedrich-University of Bamberg, Germany; Franka Baron, German Youth Institute, Germany

Early numerical knowledge, its relation to language skills and the importance of social disparities
Nadine Besser, Otto-Friedrich-University of Bamberg, Germany; Dorothea Dornheim, Otto-Friedrich-University of Bamberg, Germany; Simone Lehrl, Otto-Friedrich-University of Bamberg, Germany; Anja Linberg, Otto-Friedrich-University of Bamberg, Germany

Finger patterns and cardinality
Josefus Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain

Cognitive correlates of early math abilities and finger gnosia
Josefus Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Rosario Sánchez, University of Salamanca, Spain; Laura Matilla, University of Salamanca, Spain

Is there any differences between the recognition and production of finger numeral representations?
Rosario Sánchez, University of Salamanca, Spain; Josefus Orrantia, University of Salamanca, Spain; David Munez, National Institute of Education / Nanyang Technological University, Singapore; Laura Matilla, University of Salamanca, Spain

The association of cardinal finger patterns and quantity-number concepts in early childhood
Roberta Barrocas, Leibniz Institut für Wissensmedien, Germany; Stephanie Roesch, University of Tuebingen, Institute of Education, Germany; Julia Bahrmueller, Loughborough University, United Kingdom; Korbinian Moeller, Loughborough University, United Kingdom
### SYMPOSIUM: LEARNING IN THE SCHOOL PRACTICUM MENTORING AS PROFESSIONAL DEVELOPMENT FOR STUDENT & MENTOR TEACHERS

**Chair**  
Clara Kuhn, University of Salzburg, Austria  
**Organiser**  
Gerda Hagenauer, University of Salzburg, Austria  
**Discussant**  
Kari Smith, Norwegian University of Science and Technology, Norway

**Mentoring quality of internship in teacher education – individual and mentoring related predictors**  
Isabelle Grassmé, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany; Antje Biermann, Saarland University, Germany; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany

**Learning opportunities for mentor teachers in practice-based teacher education**  
Tina Hascher, University of Bern, Institute of Educational Science, Switzerland; Daniela Freistor, Pädagogische Hochschule, Institut Forschung & Entwicklung, Bern, Switzerland; Christiane Ammann, Pädagogische Hochschule Bern, Switzerland

*Why did you become a mentor teacher? A qualitative study on the motives to become a mentor teacher*  
Clara Kuhn, University of Salzburg, Austria; Gerda Hagenauer, University of Salzburg, Austria; Alexander Groeschner, Friedrich Schiller University Jena, Germany

### SYMPOSIUM: THE ROLE OF SELF-GENERATED VISUALIZATIONS IN STUDENT LEARNING PERFORMANCE

**Chair**  
Stanislaw Schukajlow, University of Münster, Germany  
**Organiser**  
Emmanuel Manalo, Kyoto University, Japan  
**Discussant**  
Peggy Van Meter, The Pennsylvania State University, United States

**Can planning with diagrams help students think more critically about moral questions?**  
Emmanuel Manalo, Kyoto University, Japan; Reena Cheruvattath, Birb Institute of Technology and Science, Pahari Goa, India; Hiroaki Ayabe, National Institute for Physiological Sciences, Aichi, Japan

**Is Learning by Drawing Worth the Time and Effort?**  
Qian Zhang, University of Georgia, United States; Logan Fiorella, University of Georgia, United States

**Effects of strategy-based motivation on the quality of drawings and performance in mathematics**  
Stanislaw Schukajlow, University of Münster, Germany; Johanna Rellensmann, University of Münster, Germany; Judith Blomberg, University of Münster, Germany; Claudia Leopold, University of Fribourg, Switzerland

### SYMPOSIUM: LEVERAGING SRL RESEARCH INTO INTELLIGENT LEARNING TECHNOLOGIES

**Chair**  
Sanna Järvelä, University of Oulu, Finland  
**Organisers**  
Sanna Järvelä, University of Oulu, Finland; Inge Molenaar, Radboud University Nijmegen, Netherlands  
**Discussant**  
Arthur Graesser, University of Memphis, United States

**Multimodal Data Analysis of Student’s own Regulation Activities to Advance Personalized Scaffolds**  
Maria Bannert, Technical University of Munich (TUM), Germany; Lyn Lim, Technical University of Munich, Germany; Joep van der Graaf, Radboud University Nijmegen, Netherlands; Yizhou Fan, The University of Edinburgh, United Kingdom; Jonathan Gilgour, The University of Edinburgh, United Kingdom; Inge Molenaar, Radboud University Nijmegen, Netherlands; Johanna Moore, Monash University, Australia; Draga Gasevic, Monash University, Australia

**Uses and applications of AI to investigate Emotions and Self-Regulated Learning in Medicine**  
Susanne Lapcey, McGill University, Canada; Shan Li, McGill University, Canada; Juan Zheng, McGill University, Canada; Alejandro Ruiz-Segura, McGill University, Canada

**Predicting regulatory patterns for socially shared regulation to optimize collaborative learning**  
Sanna Järvelä, University of Oulu, Finland; Andy Nguyen, University of Oulu, Finland

**Towards Hybrid Human-AI Regulation: Supporting Young learners’ Self-regulated Learning**  
Inge Molenaar, Radboud University Nijmegen, Netherlands
SYMPOSIUM: GRADE RETENTION EFFECTIVENESS RESEARCH IN EUROPE: STATE OF THE ART

**Chair**
Jannick Demanet, Ghent University, Belgium

**Discussant**
Mieke Goos, UCLL, Belgium

**Effects of retention in grade 5-6 on Portuguese students’ psychosocial development in middle school**
Joana Pêpa, ISPA - Instituto Universitário / CIE-ISPA (Research Center in Education), Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal; João Daniel, ISPA - Instituto Universitário, Portugal

**Effects of retention in grade 7 on multiple socioemotional outcomes among German repeaters**
Paul Fabian, CENTER FOR RESEARCH ON EDUCATION AND SCHOOL DEVELOPMENT, Germany; Katja Scharenberg, University of Education Freiburg, Germany

**Long-term effects of retention in grade 8 in Luxembourg**
Florian Klapproth, Medical School Berlin, Germany; Ulrich Keller, University of Luxembourg, Luxembourg; Antoine Fischbach, Luxembourg Centre for Educational Testing, Luxembourg

**Does retention in grades 1-9 produce cynical citizens? A cross-national multilevel analysis**
Timo Van Canegem, Ghent University (Department of Sociology), Belgium; Mieke Van Houtte, UGENT, Belgium; Jannick Demanet, UGENT, Belgium

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SYMPOSIUM: USING EDUCATIONAL TECHNOLOGY TO SCAFFOLD STUDENTS’ ACADEMIC WRITING

**Chair**
Andreas Lachner, University of Tübingen, Germany

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

**Discussant**
Rod Roscoe, Arizona State University, United States

**Where to Next? Mapping the Landscape of Research on Computer-Based Feedback on Writing**
Salome Wagner, University of Tübingen, Germany; Jürgen Schneider, University of Tübingen, Germany; Andreas Lachner, University of Tübingen, Germany

**Automated Writing Evaluation System and its Effects on Students’ Writing: A Systematic Review**
Andreia Nunes, University of Porto, Portugal; Teresa Limpo, University of Porto, Portugal; São Luís Castro, University of Porto, Portugal

**Writing process feedback based on keystroke logging data and exemplars**
Nina Vandermeulen, Umeå University, Sweden; Elke Van Steendam, University of Leuven, Belgium; Gert Rijlaarsdam, University of Amsterdam, Netherlands

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SYMPOSIUM: EXPERIENCE SAMPLING AND THE DYNAMICS OF STUDENTS’ MOTIVATION AND ENGAGEMENT.

**Chair**
Hanke Korpershoek, University of Groningen, Netherlands

**Organiser**
Elisa Kupers, University of Groningen, Netherlands

**Discussant**
Mayra Mascareño Lara, University of Groningen, Netherlands

**Momentary engagement profiles among upper secondary school students**
Jussi Järvinen, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland; Lauri Hietajärvi, University of Helsinki, Finland; Katarina Salmela-Aro, Helsinki University, Finland

**Differential Trajectories of Intrinsic Motivation and Basic Psychological Need Satisfaction**
Judith Loopers, University of Groningen, Netherlands; Elisa Kupers, University of Groningen, Netherlands; Arie de Boer, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands

**Lesson-to-lesson links between teacher self-efficacy need-supportive teaching and student motivation**
Elisa Kupers, University of Groningen, Netherlands; Judith Loopers, University of Groningen, Netherlands; Arie de Boer, University of Groningen, Netherlands; Allanne Bakker, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands

**Student-perceived teachers’ enthusiasm and humor related to students’ enjoyment and boredom**
Sonja Bieg, Paedagogische Hochschule Weingarten, Germany; Ulrike Nett, Augsburg University, Germany
### Session U: 13
**Time:** 17:30-18:30  
**Location:** Session Room 11

**INVITED SYMPOSIUM: EFG: EDUCATIONAL NEUROSCIENCE: A JOURNEY FROM THE LAB TO THE REAL-WORLD, AND BACK...**

**Chair**
Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands

**Discussant**
Ido Davidesco, University of Connecticut, United States

| Opportunities and limitations of mobile neuroimaging technologies in educational neuroscience | Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands |
| Cycling to and fro: Using mobile EEG to study cognition and brain activity during biking | Kyle Mathewson, University of Alberta, Canada |
| Engineering light to monitor brain oxygenation and hemodynamics in naturalistic environments | Paolo Pinti, Birkbeck College, University of London, United Kingdom |

### Session U: 14
**Time:** 17:30-18:30  
**Location:** Session Room 10

**COLLABORATIVE WORKSPACE: INTERCULTURAL COLLABORATION FOR HE STUDENTS: CURRENT AND POSSIBLE RESEARCH DIRECTIONS**

| Intercultural collaboration for HE students: current and possible research directions | Becky Bergman, Chalmers University of Technology, Sweden; Irene Poort, University of Groningen, Netherlands; Kirsten Davis, Purdue University, United States |

### Session V: 1
**Time:** 18:45-19:45  
**Location:** Session Room 13

**SINGLE PAPER: WORKPLACE LEARNING**

**Chair**
Inge Van der weijden, Leiden University, Netherlands

| Work-Oriented Project Learning in Vocational Education | Marjaana Kangas, University of Lapland, Finland; Solja Uopola, Lapland Education Centre Redu, Finland |
| Competence development of a student teacher already working as a teacher | Jiri Vilppola, Tampere University of Applied Sciences, Finland; Rajja Hämäläinen, University of Jyväskylä, Finland; Katja Vähäsantanan, University of Jyväskylä, Finland; Pentti Sato, University of Vaasa, Finland |
| Shaping the futures of higher education through international academic networks | Monica Fenias, Zurich University of Teacher Education, Switzerland; Barbara Class, University of Geneva, Switzerland; Samir Boulos, Zurich University of Teacher Education, Switzerland |

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

**SINGLE PAPER: EDUCATIONAL TECHNOLOGY IN MATHEMATICS AND NUMERACY**

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

| Examining the development of adaptive number knowledge through game performance measures | Jake McHull, University of Turku, Finland; Boglárka Boglárka, University of Turku, Hungary; Minna M Hannula-Sormunen, University of Turku, Finland; Erno Lehtinen, University of Turku, Finland |
| The Role of the Situational Interest in Game-Based Learning | Antti Koskinen, University of Tampere, Finland; Jake McHull, University of Turku, Finland; Hilma Halme, University of Turku, Finland; Kristian Kii, Tampere University, Finland |
| Effectiveness of an adaptive digital game for the training of early numerical abilities | Stefanie Vanbeelaere, KU Leuven, Belgium; Frederik Cornelie, KU LEUVEN, Belgium; Bert Reyvoet, KU LEUVEN, Belgium; Delphine Sasanguie, KU Leuven, Centre for Instructional Psychology and Technology (Vesaliusstraat 2, 3000 Leuven), Belgium; Fien Depaes, KU Leuven, Belgium |
### Session V: 3

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

**SINGLE PAPER: ASSESSMENT METHODS AND TOOLS IN MATHEMATICS**

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| Ari Tuhkala, University of Jyväskylä, Finland | Construction and validation of a test to measure students’ proportional reasoning in Mathematics  
Ruth Wafubwa, University of Szeged, Kenya | Validity of a mathematics test for the selection of university applicants for teacher training  
Robin Göller, Leuphana University Lüneburg, Germany; Michael Beisser, Leuphana Universität Lüneburg, Germany; Larissa Altenburger, Leuphana University of Lüneburg, Germany; Natalie Tropper, Georg-Christoph-Lichtenberg-Schule Kassel, Germany; Made Hagena, University of Hamburg, Germany | What Features of Equivalence Problems Relate to Adults’ Problem-Solving Performance?  
Emine Simsek, Loughborough University, United Kingdom; Ian Jones, Loughborough University, United Kingdom; Iro Xenidou-Dervou, Loughborough University, United Kingdom | ‘Finally studying for myself!’ Examining agency in summative and formative self-assessment models  
Juuso Henrik Nieminen, University of Eastern Finland, Finland; Laura Tuohilampi, UNSW, Australia |

### Session V: 4

**Time:** 18:45-19:45  
**Location:** Session Room 18

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

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| Jeff Vomund, George Mason University, United States | Comparing ways to conceptualize person-environment fit in higher education  
Carla Bohndik, University of Hamburg, Germany; Jonas Breetzke, University of Hamburg, Germany; Tom Rosman, ZPID Leibniz Institute for Psychology Information, Germany | Designing an Online Self-assessment for Informed Study Decisions: The User Perspective  
Laurie Delnoij, Open University, Netherlands; José Janssen, Open University of the Netherlands, Netherlands; Kim Dirkx, Open University, Netherlands; Rob Martens, Open University of the Netherlands, Netherlands | The Resilience Journal: Fostering Resilience at the University through a Diary Intervention  
Max S. Lohner, University of Mannheim, Germany; Carmela Aprea, University of Mannheim, Germany |

### Session V: 5

**Time:** 18:45-19:45  
**Location:** Session Room 7

**SINGLE PAPER: META-ANALYSIS AND MOTIVATION**

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| Julia Eberle, Ruhr-Universität Bochum, Germany | Do Achievement Goals for Teaching Matter and if so, How Much? A meta-analytic review  
Ruth Butler, Hebrew University of Jerusalem, Israel; Martin Daumiller, University of Augsburg, Germany; Raven Rinas, Augsburg University, Germany | Effects of Computer-Based Feedback on Learning and Motivation: A Network Meta-Analysis  
Ute Mortens, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Bridgid Finn, ETS, United States; Marilù Annalena Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany | Effectiveness of interventions that foster reading motivation: A meta-analysis  
Lisa van der Sande, Vrije Universiteit Amsterdam, Netherlands; Roel van Steensel, Erasmus University Rotterdam, Netherlands; Suzanne Fikrat-Wevers, Erasmus MC, Netherlands; Arens Lidia, Erasmus University Rotterdam, Netherlands |

### Session V: 6

**Time:** 18:45-19:45  
**Location:** Session Room 5

**SINGLE PAPER: MOTIVATION AND STUDENT LEARNING**

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| Elizabeth Olivier, Université de Montréal, Canada | The Relations between Teacher Interest, Instructional Quality, and Student Motivation  
Martha Claire Frommelt, University of Potsdam, Germany; Ulrich Schiefele, University of Potsdam, Germany | Do Teachers’ Competence Beliefs Matter for Students’ Academic Outcomes?  
Inga ten Hagen, TU Dortmund University, Germany; Fani Lauermann, TU Dortmund University, Germany; Jacquelyne S. Eccles, UC-Irvine, United States | Diagnostic competencies of elementary school math teachers - how can they be measured efficiently  
Luisa Wagner, Universität Potsdam, Germany; Jenny Lenkeit, University of Potsdam, Germany; Anne Hartmann, University of Potsdam, Germany; Michel Kriegge, HU Berlin, Germany; Nadine Spörer, University of Potsdam, Germany; Antje Ehliert, University of Potsdam / University of Johannesburg, Germany |
### Session V: 7  
**Time:** 18:45-19:45  
**Location:** Session Room 1

**SINGLE PAPER: SCIENCE EDUCATION**

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<td>Qiyun Zhu, Guangdong University of Foreign Studies, China</td>
<td>Are students invited into socioscientific discussion? A discourse analysis of science textbooks</td>
<td>Ka Lok Cheng, The University of Hong Kong, Hong Kong</td>
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<td>Scientists' emotions in children's drawings</td>
<td>Vassila Christidou, Aristotle University of Thessaloniki, Greece; Fotini Bonoti, University of Thessaly, Greece; Vassilia Hatzimikita, Hellenic Open University, Greece</td>
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<td>Learning and expertise with scientific external representations: a 4E cognition model</td>
<td>Prajakat Pande, Roskilde University, Denmark</td>
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### Session V: 8  
**Time:** 18:45-19:45  
**Location:** Session Room 2

**SINGLE PAPER: SELF-REGULATION**

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<tr>
<td>Debra Myhill, University of Exeter, United Kingdom</td>
<td>Primary school students' academic help-seeking and help-giving: an intraindividual study</td>
<td>Kylie Davison, University of Oxford, United Kingdom; Kathy Sylva, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom</td>
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<td>The relation between self-regulation and cognition of pre-school children: a longitudinal study</td>
<td>Sina Fazlali, Leibniz-Institute for Educational Trajectories (LIfBi), Germany; Lars-Erik Malmberg, University of Oxford, United Kingdom; Alexander Baron, E. L. Haynes Public Charter School, United States; Kate Mee, University of Bath, United Kingdom</td>
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<td>Associations Between Children's Self-Regulation and Their Approaches to Learning across Preschool</td>
<td>Carolina Guedes, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal; Marina Lemos, University of Porto, Portugal; Joana Cadima, University of Porto, Portugal</td>
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### Session V: 9  
**Time:** 18:45-19:45  
**Location:** Session Room 4

**SINGLE PAPER: TEACHING AND TEACHER EDUCATION**

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<td>Michael Goller, Friedrich Schiller University Jena, Germany</td>
<td>Transformation of practices into dialogic teaching: towards a dialogic notion of teacher learning</td>
<td>Valentina Guzmán, Universidad Alberto Hurtado, Chile; Antonia Larrain, Universidad Alberto Hurtado, Chile</td>
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<td>How effective are coaching and mentoring for student teachers' instructional skills? A meta-analysis</td>
<td>Sog Yee Mok, University of Zurich, Switzerland; Fritz C. Staub, University of Zurich, Switzerland</td>
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<td>Simulation Games in Teacher Education: Fostering Reflection and Belief Change on Inclusion</td>
<td>Katja Ad-Amini, TU Darmstadt, Germany; Maria Theresa Messner, Goethe-University Frankfurt, Germany; Ilonca Hardy, Goethe-Universität Frankfurt, Germany</td>
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<td>New approach to teachers' intercultural competencies: implicit theories of malleability</td>
<td>Inkeri Rissanen, Tampere University, Finland; Elina Kuusisto, Tampere University, Finland</td>
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### Session V: 10  
**Time:** 18:45-19:45  
**Location:** Session Room 16

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

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<th>Chair</th>
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<tr>
<td>Erika Schlatter, Radboud University, Netherlands</td>
<td>Mentors and their professional vision of inclusive classrooms: Do they reach the expert norm?</td>
<td>Ine Ophakken, Ghent university, Belgium; Karolien Koppens, Ghent University, Belgium; Hanne Tack, Ghent University, Belgium; Ruben Vanderlinden, Ghent University, Belgium</td>
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<td>Student Teachers’ Beliefs about the Role of Teachers: A Person-Centered Approach</td>
<td>Daniel Mann, University of Bamberg (Otto-Friedrich-Universität Bamberg), Germany; Jennifer Paetsch, University of Bamberg, Germany; Donata Perekis, Otto-Friedrich-University of Bamberg, Germany; Barbara Drechsel, University of Bamberg, Germany</td>
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<td>Domain-specific mindsets of German student teachers</td>
<td>Katharina Hiltjert, Leibniz Institute for Science and Mathematics Education (IPN), Germany; Janina Rolof-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Karin Guili, Leibniz Institute for Science and Mathematics Education, Germany; Uta Huxmarn, Leibniz Institute for Science and Mathematics Education (IPN), Germany</td>
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## Session V: 11 (18:45-19:45, Session Room 10)

**SINGLE PAPER: ATTITUDES AND BELIEFS**

**Chair**
Adrian Lundberg, Malmö University, Sweden

**Design and evaluation of a scale measuring the protective factors of teachers’ resilience**
Athena Danilidou, University of Macedonia, Greece; Maria Platsidou, University of Macedonia, Greece

**Higher education students’ life purposes in The Netherlands and Finland**
Elisa Kuusisto, Tampere University, Finland; Iside De Groot, University of Humanistic Studies, Netherlands; Doret de Ruiter, University of Humanistic Studies, Netherlands; Ingrid Schulte, Hanzehogeschool Groningen University of Applied Sciences, Netherlands; Inkeri Rissanen, Tampere University, Finland; Päivi Vartiainen, Tampere University of Applied Sciences, Finland

**Examining stakeholders’ representations on the exploitation of educational Socially Assistive Robots**
Panagiota Christodoulou, University of Western Macedonia, Greece; Dimitris Pnevmatikos, University of Western Macedonia, Greece

## Session V: 12 (18:45-19:45, Session Room 8)

**SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND HIGHER EDUCATION**

**Chair**
Fabian Wolff, Universität Koblenz·Landau, Germany

**University teachers’ enactment of feedback literacy during peer mentoring meetings**
Rachelle Esterhazy, University of Oslo, Norway; Crina Damsa, University of Oslo, Norway; Thomas de Lange, University of Oslo, Norway

**Unpacking effective mentorship practices in distance learning: a mixed method study**
Bart Rienties, Open University, United Kingdom; Julia Sargent, Open University, United Kingdom

**Collective meaning-making in teacher educators’ talk about academic writing instruction**
Ingunn Otte, Norwegian University of Science and Technology (NTNU), Norway

## Session V: 13 (18:45-19:45, Session Room 9)

**SINGLE PAPER: TEACHING, INSTRUCTION AND LEARNING TECHNOLOGIES**

**Chair**
Martin Gartmeier, Technical University of Munich (TUM), Germany

**Humanistic KB Community— Aspects of Teaching Practices of Educators in Future Learning Spaces**
Yael Yondler, Kibbutzim College of Education, Technology and Art, Israel; Dovi Weiss, Kibbutzim College of Education, Technology and the Arts, Israel

**What teachers think and do: adaptive teaching in blended classrooms**
Ina Cijvat, Radboud University, Netherlands; Eddie Denessen, Radboud University, Netherlands; Inge Molenaar, Radboud University Nijmegen, Netherlands; Peter Siegors, BMC Group, Netherlands

**The Importance of HOW, WHY, and WHAT: Learnings from Setting up an Online Course Overnight**
Alessia Ruf, School of Applied Psychology, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Anna-Lena Roos, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Livia Müller, University of Basel, Switzerland; Judith Müller, University of Basel, Switzerland; Klaus Opwis, University of Basel, Switzerland

## Session V: 14 (18:45-19:45, Session Room 11)

**SINGLE PAPER: EDUCATIONAL TECHNOLOGY**

**Chair**
Henrik Bellhäuser, Johannes Gutenberg-University Mainz, Germany

**Student teachers and task-related self-efficacy for using digital technologies**
Ove Edvard Hatlevik, Oslo and Akershus University College of Applied Sciences, Norway; Louise Mifsud, OsloMet – Oslo Metropolitan University, Norway; Torgeir Gjøen, OsloMet – Oslo Metropolitan University, Norway; Bård Ketil Engen, OsloMet – Oslo Metropolitan University, Norway; Greta Gudmundsdottir, University of Oslo, Norway; Anubha Rohtagi, University of Oslo, Norway

**This Mentor Shapes “U”: Change of Preservice Teachers’ ICT Self-Efficacy During a Teaching Practicum**
Mathias Dehne, Friedrich-Schiller-University Jena, Germany; Alexander Groeschner, Friedrich Schiller University Jena, Germany

**Developing preservice teachers’ digital competencies: Building blocks for an online/blended future**
Jo Tondeur, Vrije Universiteit Brussel, Belgium; Sarah Howard, University of Wollongong, Australia
### Session V: 15
**Time:** 18:45-19:45  
**Location:** Session Room 6

#### SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND MOTIVATION

<table>
<thead>
<tr>
<th>Chair</th>
<th>Mindset profiles of high school students: More complex than a growth or a fixed mindset</th>
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<tbody>
<tr>
<td>Gamze Görel, Paderborn University, Germany</td>
<td>Sibel Altikulaç, Vrije Universiteit Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Smiddy Nieuwenhuis, VU University Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands</td>
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<tr>
<th>The role of relatedness in online courses during social distancing</th>
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<tr>
<td>Aysepur Alp, Christ, Institute of Education, University of Zurich, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland; Carmen Kühler, DIPF</td>
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<tr>
<th>Connections between temperament, perfectionism, and well-being at school</th>
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<tr>
<td>Anna Rawlings, University of Helsinki, Finland; Anna Tapola, University of Helsinki, Finland; Heta Tuominen, University of Turku, Finland; Markku Niemivirta, University of Eastern Finland, Finland</td>
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</table>

### Session V: 16
**Time:** 18:45-19:45  
**Location:** Session Room 12

#### SINGLE PAPER: SELF-EFFICACY IN TEACHER PROFESSIONAL DEVELOPMENT

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<thead>
<tr>
<th>Chair</th>
<th>Self-regulation and self-efficacy as resources for teachers to prevent strain and foster motivation</th>
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<tr>
<td>Azizul Ghofar Candra Wicaksono, University of Szeged, Doctoral School of Education, Hungary</td>
<td>Christine Wolfgramm, University of Teacher Education Zurich, Switzerland; Zippora Bührer, Pädagogische Hochschule Zürich, Switzerland; Simone Berweg, Zurich University of Teacher Education, Switzerland; Andrea Keck Frei, Zürich University of Teacher Education, Switzerland; Christine Bierl Buscher, Zurich University of Teacher Education, Switzerland</td>
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<tr>
<th>Sources of primary school teachers’ self-efficacy to teach in inclusive classrooms</th>
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<tr>
<td>Katja Franzen, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany; Barbara Moschner, Carl von Ossietzky Universität Oldenburg, Germany</td>
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<tr>
<th>The Promotion of Pre-Service Teachers’ Team-Teaching Competencies for Inclusive Education</th>
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<tr>
<td>Frank Hellmich, Paderborn University, Germany; Jan R. Schulze, Paderborn University, Germany; Fabian Hoya, Paderborn University, Germany</td>
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### Session V: 17
**Time:** 18:45-19:45  
**Location:** Session Room 15

#### INVITED SYMPOSIUM: SIG 17: TIDYING THE TOOLBOX: TRIALS, TRIBULATIONS AND TRIUMPHS IN RESEARCH ON LEARNING AND EDUCATION

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<thead>
<tr>
<th>Chair</th>
<th>Lessons Learnt From Research in Learning Transfer Around Participant Mortality</th>
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<tbody>
<tr>
<td>Dominik E. Froehlich, University of Vienna, Austria</td>
<td>Aitana Gonzalez Ortiz de Zarate, Udima (Madrid Open University), Spain; Carla Quesada-Pallarés, Universitat Autònoma de Barcelona, Spain</td>
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<tr>
<th>Mixing theories and its implications for mixing methods</th>
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<tr>
<td>Victoria Murphy, Open University, United Kingdom; Debbie Vermond, University Medical Center Utrecht, Netherlands; Esther de Groot, UMC Utrecht, Netherlands</td>
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<th>Embracing experimentation: a pragmatist approach to participant engagement in mixed methods studies</th>
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<td>Marc Sarazin, University of Edinburgh, United Kingdom</td>
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THURSDAY, 26 AUGUST 2021
<table>
<thead>
<tr>
<th>Session W: 1</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 8</th>
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<tbody>
<tr>
<td><strong>INVITED SYMPOSIUM: SIG 21: BEYOND THE PANDEMIC: SHAPING OF FUTURES IN (EVEN MORE?) DIVERSE EDUCATIONAL SETTINGS</strong></td>
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<td><strong>Chair</strong></td>
<td>Chair</td>
<td>Sylvi Vigmo, University of Gothenburg, Sweden</td>
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<td><strong>Organiser</strong></td>
<td>Organiser</td>
<td>Becky Bergman, Chalmers University of Technology, Sweden</td>
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<tr>
<td><strong>Discussant</strong></td>
<td>Discussant</td>
<td>Charles Max, University of Luxembourg, Luxembourg</td>
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<td><strong>Face(ing) learning: who am I learning with?</strong></td>
<td>Natalia Durus, Luxembourg multi-LEARN Institute asbl, Luxembourg</td>
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<td><strong>Changing learning and development in organizations from past-focused to future-focused</strong></td>
<td>Natalia Durus, Luxembourg multi-LEARN Institute asbl, Luxembourg; Florian Feltes, XU Exponential University, Germany</td>
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<td><strong>From survival mode to conceptualising a/the « new normal » in educational settings</strong></td>
<td>Gudrun Ziegler, Luxembourg multi-LEARN Institute, France</td>
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<tr>
<th>Session W: 2</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 14</th>
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<tbody>
<tr>
<td><strong>INVITED SYMPOSIUM: EFG: LEARNER-CENTERED PROCESSES IN FEEDBACK ACROSS CONTEXTS: THEORETICAL AND EMPIRICAL FINDINGS</strong></td>
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<tr>
<td><strong>Chairs</strong></td>
<td>Chairs</td>
<td>Anastasiya Lipnevich, The Graduate Center of the City University of New York, United States; Naomi Winstone, University of Surrey, United Kingdom</td>
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<td><strong>Discussant</strong></td>
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<td>Robert Nash, Aston University, United Kingdom</td>
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<td><strong>How do learners process and use feedback? A systematic review of research using online measures</strong></td>
<td>Florence Van Meenen, UCLouvain, Belgium; Nicolas Masson, Université catholique de Louvain (UCL), Belgium; Liesje Coertjens, Université catholique de Louvain (UCL), Belgium</td>
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<td><strong>Effects of error tolerance, feedback tolerance, and perceived expertise on peer feedback processing</strong></td>
<td>Jochem Aben, University of Groningen, Netherlands; Anneke Timmermans, University of Groningen, Netherlands; Mayra Mascareño Lara, University of Groningen, Netherlands; Filita Dingyiboudi, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands</td>
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<td><strong>The eye-mind of processing feedback: Unravelling how students read and use feedback for revision</strong></td>
<td>Renise Bouwer, Utrecht University, Netherlands; Kim Dirix, Open University, Netherlands</td>
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<td><strong>Says Who?: Credibility Effects in Self-verification Strivings</strong></td>
<td>Ewa Szumowska, Jagiellonian University, Poland; Natalia Wójcik, Jagiellonian University, Poland; Paulina Szved, Jagiellonian University, Poland; Arie Kruglanski, University of Maryland, United States</td>
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<tr>
<th>Session W: 3</th>
<th>Time: 09:00-10:00</th>
<th>Location: Session Room 12</th>
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<tr>
<td><strong>INVITED SYMPOSIUM: SIG 6: THE IMPACT OF DIFFERENT EDUCATIONAL TECHNOLOGY DESIGNS ON LEARNING IN WORK-RELATED CONTEXTS</strong></td>
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<td><strong>Chair</strong></td>
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<td>Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland</td>
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<td><strong>Organisers</strong></td>
<td>Organisers</td>
<td>Alberto Cattaneo, Swiss Federal Institute for Vocational Education and Training, Switzerland; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Moritz Sahlender, German Institute for Adult Education – Leibniz Centre for Lifelong Learning, Germany</td>
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<td><strong>Discussant</strong></td>
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<td>Esi Ryymin, Hämie University of Applied Sciences, Finland</td>
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<td><strong>The effect of signaling and feedback in learning forest ecosystems in Immersive Virtual Reality</strong></td>
<td>Jean-Michel Bouchoux, University of Dijon, LEAD-CNRS, France; Porte Laure; Lead - CNRS / Université de Bourgogne, France; Louis Rapet, Arts et Métiers, Institute of Technology, LISPE, HESAM, University of Bourgogne Franche-Comté, Chalon sur Saône, France; Benoît Haigre, LEAD-CNRS, University of Bourgogne Franche-Comté, Dijon, France; Jean-Luc Martinez, Arts et Métiers, Institute of Technology, LISPE, HESAM, University of Bourgogne Franche-Comté, Chalon sur Saône, France</td>
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<td><strong>Garden designing in virtual reality for apprentice gardeners in vocational education</strong></td>
<td>Kevin Gonyop Kim, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Martin Dobrucki, Bem University of Teacher Education, SFIVET, Switzerland; Richard Lee Davis, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Pierre Difemberg, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland</td>
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<td><strong>Integrative design and development of a digital game and game-based learning in financial education</strong></td>
<td>Carmela Aprea, University of Mannheim, Germany; Julia Schultheis, University of Mannheim, Germany</td>
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<td><strong>Teachers’ experiences of designing for digital learning across boundaries in vocational education</strong></td>
<td>Ann-Brigit Enochsson, Karlstad University, Sweden; Nina Kilbrink, Karlstad University, Sweden; Annelie Andersen, Department of Educational Studies, Karlstad University, Sweden; Annica Ådefors, Karlstad university, Sweden</td>
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**Session W: 4**

**Time:** 09:00-10:00  
**Location:** Session Room 17

**SYMPOSIUM: TEACHER EXPECTATION STABILITY AND MODERATORS OF TEACHER EXPECTATION EFFECTS**

**Chair**  
Ineke Pit-ten Cate, University of Luxembourg, Luxembourg

**Organiser**  
Anneke Timmermans, University of Groningen, Netherlands

**Discussant**  
Ineke Pit-ten Cate, University of Luxembourg, Luxembourg

**The stability and trajectories of teacher expectations in Chinese junior high schools**  
Shengnan Wang, The University of Auckland, New Zealand; Christine Rubie-Davies, University of Auckland, New Zealand; Kane Meissel, University of Auckland, New Zealand

**Adjusting expectations or maintaining first impressions? The stability of teachers’ expectations**  
Anneke Timmermans, University of Groningen, Netherlands; Christine Rubie-Davies, University of Auckland, New Zealand; Shengnan Wang, The University of Auckland, New Zealand

**Gender and minority status as moderators of teacher expectation effects**  
Christine Rubie-Davies, University of Auckland, New Zealand; Anneke Timmermans, University of Groningen, Netherlands

**Why do females prefer humanities, while males choose to study technology?**  
Sławomir Trusz, Pedagogical University of Cracow, Poland

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**Session W: 5**

**Time:** 09:00-10:00  
**Location:** Session Room 1

**SINGLE PAPER: ACHIEVEMENT AND MOTIVATION**

**Chair**  
Peter Edelsbrunner, ETH Zurich, Switzerland

**Discussant**  
Peter Edelsbrunner, ETH Zurich, Switzerland

**Learning activities as mediators between teaching quality and student outcomes: A systematic review**  
Ayşenur Alp Christ, Institute of Education, University of Zurich, Switzerland; Vanda Sieber, Institute of Education, University of Zurich, Switzerland; Urs W. Grob, University of Zurich, Switzerland; Anna-Katharina Praetorius, Institut für Erziehungswissenschaft, Switzerland

**Cognitive and Affective-Motivational Effects of Computer-Based Knowledge of Results Feedback**  
Livija Kuklick, IPN - Leibniz Institute for Science and Mathematics Education, Germany; Marli A. Lindner, IPN - Leibniz Institute for Science and Mathematics Education, Germany

**East meets West: Teaching motivation, instructional quality and academic achievers**  
XIN LIU, Ghent University, Belgium; Ming Tang, Ghent University / Sichuan Normal University, Belgium

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**Session W: 6**

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

**SINGLE PAPER: WRITING IN SECONDARY EDUCATION**

**Chair**  
Tuike Iiskala, University of Turku, Finland

**Discussant**  
Tuike Iiskala, University of Turku, Finland

**The Effects of a Reading-to-Write Instruction in History**  
Johan van Driel, University of Amsterdam, Netherlands; Jannet van Drie, University of Amsterdam, Netherlands; Carla Van Boxtel, University of Amsterdam, Netherlands

**Writing in Civic Education at lower secondary school: The Effects of an intervention?**  
Claudia Forkarth, Universität Duisburg-Essen, Germany

**Synthesis writing in Science Orientation classes, a design study**  
Edith Alkama, RICDE / University of Amsterdam, Netherlands; Gert Rijlaarsdam, University of Amsterdam, Netherlands; Daphne van Weijen, University of Amsterdam, Netherlands

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**Session W: 7**

**Time:** 09:00-10:00  
**Location:** Session Room 11

**SINGLE PAPER: SELF-REGULATION**

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

**Discussant**  
Sarah Howard, University of Wollongong, Australia

**Exposing Cues for Cognitive Load Monitoring in Problem Solving**  
Yael Sidi, the Open University of Israel, Israel; Rakefet Ackerman, Technion - Israel Institute of Technology, Israel

**Effects of Video Modeling and Metacognitive Prompts on Scientific Reasoning and Self-Regulation**  
Yoana Omarchevska, Leibniz-Institut für Wissensmedien, Germany; Andreas Lachner, University of Tübingen, Germany; Katharina Scheiter, Leibniz-Institut für Wissensmedien, Germany

**Homogeneous Problem Perception, Immedicacy and Intensity of Strategy Use in Online CSCL**  
Laura Spang, University of Augsburg, Germany; Martin Greisel, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany
Session W: 8  
**Time:** 09:00-10:00  
**Location:** Session Room 13

**SINGLE PAPER: COOPERATIVE AND COLLABORATIVE LEARNING**

**Chair**  
Karolina Doulougeri, Eindhoven School of Education, Netherlands

**Development and validation of the Collaborative Skills Questionnaire**  
Attila Pásztor, MTA-SZTE Research Group on the Development of Competencies, Hungary; Anita Pásztor-Kovács, Institute of Education University of Szeged, Hungary; Gyöngyver Molnar, University of Szeged, Hungary

**Peer review in online HE: does the group size influence students’ participation and performance?**  
Anna Serbati, University of Padova, Italy; Valentina Giron, University of Padova, Italy; Lan Li, Bowling Green State University, United States

**Exploring group-based learning assessment’s construct and consequential validity in higher education**  
Hajo Meijer, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Rink Hoekstra, University of Groningen, Netherlands; Jan-Willem Strijbos, University of Groningen, Netherlands

Session W: 9  
**Time:** 09:00-10:00  
**Location:** Session Room 16

**SINGLE PAPER: EDUCATIONAL AND LEARNING TECHNOLOGIES**

**Chair**  
Irina Engeness, Østfold University College, Norway

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

**The Use of Educational Technology in Early Mathematics Education and its Associated Factors**  
Sandy Vertongen, KU Leuven, Belgium; Fien Depaepe, KU Leuven, Belgium; Joke Torbeyns, KU Leuven, Belgium

**Speech-to-Text and the Struggling Writer: Effects on Learning a New Writing Strategy**  
Katrina Haug, Western University, Canada; Perry Klein, The University of Western Ontario, Canada

Session W: 10  
**Time:** 09:00-10:00  
**Location:** Session Room 18

**SINGLE PAPER: EDUCATIONAL PSYCHOLOGY AND MOTIVATION**

**Chair**  
Scarlett Madeline Kobs, Humboldt Universität zu Berlin, Germany

**Teachers’ communicative style: The role of autonomy, competence and relatedness**  
Samuel Falcon, University of Las Palmas de Gran Canaria, Spain; Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Juan L. Nuñez, University of Las Palmas de Gran Canaria - Faculty of Educational Sciences, Spain; Juan Francisco Loro, University of Las Palmas de Gran Canaria, Spain; Jaime Leon, University of Las Palmas de Gran Canaria, Spain

**Do motivational messages predict motivation to learn and performance?**  
Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Dave Putwain, Liverpool John Moores University, United Kingdom; Juan L. Nuñez, University of Las Palmas de Gran Canaria - Faculty of Educational Sciences, Spain; Juan Francisco Loro Ferrer, University of Las Palmas de Gran Canaria, Spain; Jaime Leon, University of Las Palmas de Gran Canaria, Spain

**Teacher Classroom Management Self-Efficacy: Relations to Perceived Teaching Behaviors and Enjoyment**  
Katharina Hettinger, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany; Ullrich Schiefele, University of Potsdam, Germany
Session W: 11
Time: 09:00-10:00
Location: Session Room 15

SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND TEACHING APPROACHES

Chair
Mandy Hommel, OTH Amberg-Weiden, Germany

A follow-up study on university teachers' visual and verbal processing of classroom situations
Henna Vilppu, University of Turku, Finland; Erkki Anto, University of Turku, Finland; Mari Murtonen, University of Turku, Finland

Teachers' regulation, learning patterns and teaching approaches: Does pedagogical training matter?
Tahani Aldahdouh, Tampere University, Finland; Mari Murtonen, University of Turku, Finland; Trang Nguyen, University of Turku / Faculty of Education, Finland; Jere Riekkinen, Tampereen yliopisto, Finland; Henna Vilppu, University of Turku, Finland; Jan Vermunt, Eindhoven University of Technology, Netherlands

Effects of micro- and macro-adaptive instruction on children’s learning of scientific reasoning
Erika Schlatter, Radboud University, Netherlands; Inge Meelmaar, Radboud University Nijmegen, Netherlands; Ard Lazonder, Radboud University, Netherlands

Session W: 12
Time: 09:00-10:00
Location: Session Room 2

SINGLE PAPER: METACOGNITION AND SELF-REGULATION

Chair
Frank Hellmich, Paderborn University, Germany

How individual learner characteristics are (not) related to students' adoption of shared regulation
Liesje De Backer, Ghent University, Belgium; Hilde Van Keer, Ghent University, Belgium; Martin Valcke, Ghent University, Belgium

Individual Performance Feedback: Does It Increase the Use of Retrieval Practice?
Luutong Hui, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Donkers, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands

Metacognitive illusion or self-regulated learning? Learning strategies in engineering education
Maria Cervin-Ellqvist, Chalmers University of Technology, Sweden; Daniel Larsson, Chalmers University of Technology, Sweden; Tom Adawi, Chalmers University of Technology, Sweden; Christian Stibhr, Chalmers University of Technology, Sweden; Raffaella Negretti, Chalmers University of Technology, Sweden

Session W: 13
Time: 09:00-10:00
Location: Session Room 3

SINGLE PAPER: INTERDISCIPLINARY, MIXED-METHOD RESEARCH

Chair
Clara Schumacher, Humboldt Universität zu Berlin, Germany

Extending phenomenographic analysis by using Q methodological approach – a theoretical contribution
Mona Holmqvist, Malmö University, Sweden; Adrian Lundberg, Malmö University, Sweden

When to co-create education with students? Comparing different momentums of co-creation
Tanguy Dewaele, Maastricht University, Netherlands; Stephanie Meeuwissen, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands; Marijan Vermueen, Heerlen Open Universiteit, Netherlands; Karen Könings, Maastricht University, Netherlands

The Impact of Technology on Work Characteristics and Professional Development
Patrick Beer, University of Regensburg, Germany; Regina Mulder, University of Regensburg, Germany

Session W: 14
Time: 09:00-10:00
Location: Session Room 4

SINGLE PAPER: TEACHER PROFESSIONAL DEVELOPMENT AND INSTRUCTION

Chair
Leila Ferguson, Kristiania University College, Norway

Towards a future vocational profession: Longitudinal orientations in vocational teaching practices
Stig-Börje Asplund, Karlstad University, Sweden; Nina Kilbrink, Karlstad University, Sweden; Hamid Asghari, Karlstad University, Sweden; Minna Viljamaa, Karlstad University, Sweden

Supporting Teachers to Promote Cognitive Activation and Differentiation: Product or Process?
Charalambos Charalambous, University of Cyprus, Cyprus; Evi Kasi, University of Cyprus, Cyprus; Georgiou Foivou, University of Cyprus, Cyprus

Digital as the new “normal” during COVID19: Implications for teachers of Swedish for immigrants
Sylvana Sofkova Hashemi, University of Gothenburg; Halmstad University, Sweden; Nataliya Berbyuk Lindström, University of Gothenburg, Sweden
## Session W: 15
### Time: 09:00-10:00
### Location: Session Room 9

### SINGLE PAPER: ENVIRONMENTAL EDUCATION

**Chair**
Alessio Surian, Università degli Studi di Padova, Italy

**Enchantment and student activism: Designing pedagogies to address current climate-related crises**
Peter David Renshaw, The University of Queensland, Australia; Ron Tooth, Pullenvale Environmental Education Centre, Australia; Harriet Mortlock, Pullenvale Environmental Education Centre, Australia; Kirsty Jackson, The University of Queensland, Australia

**Agency formation of youth climate activists: A learning ecology perspective**
Antti Rajala, University of Oulu, Finland; Paula Ahola, University of Eastern Finland, Finland; Sanna Ryynänen, University of Eastern Finland, Finland; anna stetsenko, CUNY Graduate Center, United States

**Self-education for our times**
Jan Varpanen, University of Tampere, Finland, Finland; Antti Saari, University of Tampere, Finland

### Keynotes IV: 1
### Time: 10:45-11:45
### Location: Auditorium B

**EARLI KEYNOTE SESSION: THINKING BEYOND THE CRISIS: WHAT IS A UNIVERSITY EDUCATION FOR?**

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

**Thinking Beyond the Crises: what is a university education for?**
Paul Ashwin, Lancaster University, United Kingdom

### Keynotes IV: 2
### Time: 10:45-11:45
### Location: Auditorium A

**EARLI KEYNOTE SESSION: VISION FOR EDUCATION – HOW EYE-TRACKING HELPS TO UNDERSTAND AND IMPROVE LEARNING AND INSTRUCTION**

**Chair**
Erno Lehtinen, University of Turku, Finland

**Vision for Education – How eye-tracking helps to understand and improve learning and instruction**
Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands

### Session X: 1
### Time: 12:00-13:00
### Location: Session Room 9

### SINGLE PAPER: METACOGNITION AND SELF-REGULATION

**Chair**
Rimma Nyman, University of Gothenburg, Sweden

**The Role of Achievement Emotions for Metacomprehension Judgments and Accuracy**
Anja Piriz, University of Freiburg, Germany; Joerg Wittwer, University of Freiburg, Germany

**Does feedback on students' diagramming affect monitoring accuracy of their text comprehension?**
Sophia Braumann, University Utrecht, Netherlands; Janneke van de Pol, Utrecht University, Netherlands; Héctor J. Piñeiro-Díaz, Maastricht University, Netherlands; Ellen Kok, Utrecht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

**Can the Overestimation-with-Internet-Bias be reduced by making task demands explicit?**
Björn Mattes, Technical University of Darmstadt, Germany; Stephanie Peschel, Technical University of Darmstadt, Germany
### Session X: 2
**Time: 12:00-13:00**  
**Location: Session Room 16**

**SINGLE PAPER: SOCIAL ASPECTS OF LEARNING AND TEACHING**

**Chair**  
Julienne Ferreira, University of Tampere, Finland

**Teenagers perception of cyberbullying in rural and urban schools. A case study in Galicia, Spain**  
Angel Torres-Toukoomidis, Universidad Politecnica Salesiana, Ecuador; Claudia Pardo-Ramos, Universidad de Santiago de Compostela, Spain; Mari Carmen Caldeiro-Pedreira, Universidad de Santiago de Compostela, Spain

**Follow the Act or Consider the Consequences? Teachers’ Ethics, Self-efficacy and Job Satisfaction**  
Annette-Pascale Denfeld, University of Agder, Norway; Esther Canninus, University of Agder, Norway; Inger Marie Dalehette, University of Agder, Norway

**How do adolescents’ interests develop in relation to the interests of their school network of peers?**  
Joris Beek, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

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### Session X: 3
**Time: 12:00-13:00**  
**Location: Session Room 7**

**SINGLE PAPER: ATTITUDES AND BELIEFS**

**Chair**  
Lionel Alvarez, HEP-Fribourg | Université de Fribourg, Switzerland

**Self-efficacy and outcome expectations of adolescents with (non)-stereotypic career choices**  
Gernot Dreisiebner, University of Graz, Austria; Michaela Stock, School of Business Economics and Social Sciences, Austria

**Expectancy-value theory and emotions in a COVID world: a study on vocational teachers**  
Catherine Audrin, University of Teacher Education Lausanne, Switzerland; Marine Hascœft, University of Teacher Education Lausanne, Switzerland; Crispin Ginrich, University of Teacher Education Lausanne, Switzerland

**Role of the school context in parental expectations’ development**  
Marine Hascœft, Lausanne University of Teacher Education, Switzerland; Valentina Giacori, Universidad de O’Higgins, Chile; Ludvine Jamain, Université Grenoble Alpes, France

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### Session X: 4
**Time: 12:00-13:00**  
**Location: Session Room 12**

**SINGLE PAPER: MATHEMATICS IN PRIMARY EDUCATION**

**Chair**  
Christian Thurn, ETH Zurich, Switzerland

**Development of children’s strategy use from Grade 3 to 4: Individual and classroom predictors**  
Henning Sievert, Leibniz-Institute for Science and Mathematics Education (IPN), Germany; Marian Hickendorff, Leiden University, Netherlands; Ann-Katrin Van der Ham, Universität Hamburg, Germany; Aiso Heinze, Leibniz Institute for Science and Mathematics Education (IPN), Germany

**The Effect of Problem Format on Second Grade Children’s Arithmetic Problem-Solving Performance**  
Iro Xenidou-Dervou, Loughborough University, United Kingdom; Eminre Simsek, Loughborough University, United Kingdom; Johannes Van Luij, Utrecht University, Netherlands; Evelyn Kroosbergen, Radboud University, Netherlands; Ibona-Friso-van den Bos, University of Twente, Netherlands; Menno van der Schoot, Vrije Universiteit Amsterdam, Netherlands; Ernest C. D. M. van Lieshout, Vrije Universiteit Amsterdam, Netherlands

**Solving addition tasks within 20 – Strategy use, error rates and preconditions**  
Heidwig Gasteger, Osnabrück University, Germany

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### Session X: 5
**Time: 12:00-13:00**  
**Location: Session Room 3**

**SINGLE PAPER: ASSESSMENT IN PRIMARY EDUCATION**

**Chair**  
Andreas Rieu, PH Freiburg, Germany

**Supporting primary students’ math reasoning: Formative feedback and self-efficacy as mediator**  
Robbert Smit, University of Teacher Education St.Gallen, Switzerland; Patricia Bachmann, University of Teacher Education St.Gallen, Switzerland

**Students’ (in)consistent performance and the relation with SES, gender, and track recommendations**  
Anne van Leest, Utrecht University, Netherlands; Janneke van der Pol, Utrecht University, Netherlands; Jan van Tartwijk, Utrecht University, Netherlands; Lisette Hornstra, Utrecht University, Netherlands

**Online assessment of morphological awareness and its development in grades 2-4**  
Szlvia Varga, John von Neumann University, Hungary
### Session X: 6  
**Time: 12:00-13:00**  
**Location: Session Room 10**

**SINGLE PAPER: COMPUTER-ASSISTED AND MULTIMEDIA LEARNING**

**Chair**  
Eleni Kyza, Cyprus University of Technology, Cyprus

**Modality effect in virtual reality**  
Patrick Albus, Ulm University, Germany; Andrea Vogt, Ulm University, Institute of Psychology and Education, Department Learning and Instruction, Germany; Tina Seufert, Ulm University, Germany; Sebastian Hartwig, Institute of Institute of Media Informatics, Germany

**Can segmented lecture slides foster online learning?**  
Tim Kühl, University of Mannheim, Germany; Susanne Kappes, University of Mannheim, Germany

**Do a rating task and a pause button affect video-based learning? Insights from two experiments.**  
Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany; Daniel Bodemer, University of Duisburg-Essen, Germany

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### Session X: 7  
**Time: 12:00-13:00**  
**Location: Session Room 17**

**SINGLE PAPER: SCHOOL EFFECTIVENESS**

**Chair**  
Monika Gigerl, Pädagogische Hochschule Steiermark, Institut für Elementar- und Primarpädagogik, 8010 Graz, Österreich, Austria

**Reform@work: Analyzing policy implementation under the impact of COVID-19 in Switzerland**  
Michelle Jutzi, University of Teacher Education Bern, Switzerland; Marina Grgic, Pädagogische Hochschule Bern, Switzerland; Thomas Wicki, PHBern, University of Teacher Education, Switzerland; Ueli Hostettler, PHBern – University of Teacher Education, Switzerland

**Enacting an RCT on small-group mathematics tuition in elementary schools: practitioners’ voices**  
Jamilla Bukkova-Moan, Kristiania University College, Norway; Vibeke Opheim, NIFU, Norway

**Primary school principals’ views on designing inclusive schools**  
Gamze Göröc, Paderborn University, Germany; Frank Hellmich, Paderborn University, Germany

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### Session X: 8  
**Time: 12:00-13:00**  
**Location: Session Room 13**

**SINGLE PAPER: DEVELOPMENTAL PROCESSES IN EARLY CHILDHOOD EDUCATION**

**Chair**  
Jessica Carolyn Bühler, University of Basel, Switzerland

**Writing for all: Studying the development of handwriting and keyboarding skills in early education**  
Anabela Maia-Pique, Murdoch University, Australia, Australia; Margaret Merga, Edith Cowan University, Australia; Deborah Pino-Pasternak, University of Canberra, Australia; Susan Ledger, Murdoch University, Australia; Debora Valcan, Murdoch University, Australia

**Emerging school readiness profiles of 3-year-old typically developing children**  
Erica Kamphorst, University of Groningen, Netherlands; Maïa Cantell, University Groningen, Netherlands; Gerda Van der Veer, University of Groningen, Netherlands; Alexander Minnaert, University of Groningen, Netherlands; Suzanne Houwen, University of Groningen, Netherlands

**Reading precursors developmental trajectories according to socioeconomic status in Chile**  
Victoria Espinoza, Pontificia Universidad Católica de Chile, Chile; Catalina Santa Cruz, Centro de Justicia Educacional, Chile; Ricardo Rosas, Psychology, Chile

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### Session X: 9  
**Time: 12:00-13:00**  
**Location: Session Room 18**

**SINGLE PAPER: COMPUTER-ASSISTED LEARNING IN PRE-SERVICE TEACHER EDUCATION**

**Chair**  
Birgitta Fröjdendahl, Department of Language Education, Stockholm University, Sweden

**Pre-service teachers’ conceptions on online learning in emergency distance education**  
Christian Tarchi, University of Florence, Italy; Eva Wennäs Brante, Malmö University, Sweden; Mohammad Jokar, Monash University, Australia; Elham Marzaii, Monash University, Australia

**Learning to diagnose: effects of scaffolding in a simulation for prospective primary school teachers**  
Christian Schors, Technical University of Munich, Germany; Andreas Obersteiner, Technische Universität of Munich, Germany; Kristina Reiss, Technische Universität München (TUM), Germany

**How professional knowledge affects teachers’ diagnoses of students’ scientific reasoning skills**  
Amadeus J. Pickal, University of Hildesheim, Germany; Raimund Ginwitz, LMU Munich, Germany; Birgit J. Neuhaus, LMU Munich, Germany; Christof Wecker, Universität Hildesheim, Germany
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**Time:** 12:00-13:00  
**Location:** Session Room 6

**SINGLE PAPER: COMPUTER-ASSISTED LEARNING TECHNOLOGIES**

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<td>Boris Eckstein, University of Teacher Education St. Gallen, Switzerland</td>
<td>Online measures of learning engagement: patterns in time and relationships with off-line measures</td>
<td>Dirk Tempelaar, Maastricht University, Netherlands</td>
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<td>Learners’ Adjustment Strategies Following Impasses in Medical Simulations</td>
<td>Nicole Heitzmann, Ludwig-Maximilians-Universität (LMU), Germany; Matthias Studer, LMU Munich, Germany; Anika Radkowitsch, Ludwig Maximilians-Universität München, Germany; Constanze Richters, Ludwig Maximilians-Universität (LMU), Germany; Ralf Schmidmaier, LMU University Hospital Munich, Germany; Martin R. Fischer, LMU University Hospital, Germany</td>
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<td>Learning from Gaze: Eye Movement Modeling Examples in Software Engineering Education</td>
<td>Kenneth Holmqvist, Lund University, Sweden; Mottok Jürgen, OTHR, Germany; Theresa Stark, OTH Regensburg, Germany; Stefan Schreistetter, OTH Regensburg, Germany; Rebecca Reuter, OTH Regensburg, Germany; Florian Hauser, OTH Regensburg, Germany; Hans Gruber, University of Regensburg, Germany</td>
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### Session X: 11
**Time:** 12:00-13:00  
**Location:** Session Room 2

**SINGLE PAPER: ACHIEVEMENT**

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<td>Izzet Utku Caybas, Middle East Technical University, Turkey</td>
<td>Associations among students’ achievement goals, perceived teachers’ goals and didactic practices</td>
<td>Georgia Stavropoulou, Aristotle University of Thessaloniki, Greece; Dimitrios Stamovlasis, Aristotle University of Thessaloniki, Greece; Eleftheria Gorina, Aristotle University of Thessaloniki, Greece</td>
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<td>The Role of Metacognitive Competences in the Development of School Achievement among Gifted Youths</td>
<td>Catharina Tixen, University of Würzburg, Germany; Tobias Richter, University of Würzburg, Germany; Sandra Schmiedeler, University of Würzburg, Germany; Nicole von der Linden, University of Wuerzburg, Germany; Wolfgang Schneider, University of Würzburg, Germany</td>
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<td>Adolescents’ Subjective Well-being with respect to school-related factors across 48 countries</td>
<td>Yi-Jhen Wu, Institute for School Development Research (IfS), TU Dortmund, Germany; Jihyun Lee, UNSW-Sydney, Australia</td>
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### Session X: 12
**Time:** 12:00-13:00  
**Location:** Session Room 14

**SINGLE PAPER: MOTIVATION AND SOCIAL INTERACTION**

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<th>Chair</th>
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<tr>
<td>Jessica To, National Institute of Education, Nanyang Technological University, Hong Kong</td>
<td>Parental Support and Pressure in Adolescents’ Development of Stress</td>
<td>Stefan Kuliakow, University Greifswald, Germany; Diana Raufelder, University Greifswald, Germany; Frances Hoferichter, University of Greifswald, Germany</td>
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<td>Teachers’ Psychobiological Stress in Social Interactions and the Role of Emotional Stability</td>
<td>Sandra Isabel Schneider, PHBern / University of Bern, Switzerland; Alexander Wettstein, PHBern / University of Bern, Switzerland; Fabienne Kühne, PHBern / University of Bern, Switzerland; Martin grosse Holforth, University of Bern, Switzerland; Roberto La Marca, University of Zurich, Switzerland; Wolfgang Tschacher, University of Bern, Switzerland</td>
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<td>Primary school student’s perceived social support and study engagement – Three-year follow-up</td>
<td>Pihla Rautanen, Tampere University, Finland; Tiina Soininen, Tampere University, Finland; Janne Pietarinne, University of Eastern Finland, Finland; Kirsi Pyhältö, University of Helsinki, Finland</td>
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### Session X: 13 | Time: 12:00-13:00 | Location: Session Room 11

**SINGLE PAPER: MOTIVATION IN AT-RISK STUDENTS**

**Chair**
Junlin Yu, University of Helsinki, Finland

**Affective-motivational characteristics of at-risk children at the transition to secondary school**
Melike Oemerogullari, University of Erlangen-Nuremberg, Germany; Michaela Gläser-Zikuda, University of Erlangen-Nuremberg, Germany

**Motivational Pathways to Gifted Underachievement: Trajectory Classes and Educational Outcomes**
Alicia Ramos, KU Leuven, Belgium; Jeroen Lavrijsen, KU Leuven, Belgium; Lisa Linnenbrink-Garcia, Michigan State University, United States; Bart Soenens, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Sabine Sypre, KU Leuven, Belgium; Michel Boncouet, Universiteit Gent, Belgium; Karina Verschueren, KU Leuven, Belgium

**Test Anxiety, Anxiety Disorders, and School-Related Wellbeing: The Same or Different Constructs?**
Dave Putwain, Liverpool John Moores University, United Kingdom; Kristina Loderer, University of Augsburg, Germany; Nathaniel von der Embse, University of South Florida, United States; Shannon Suldo, University of South Florida, United States; Martin Daumiller, University of Augsburg, Germany

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### Session X: 14 | Time: 12:00-13:00 | Location: Session Room 4

**SINGLE PAPER: INSTRUCTIONAL DESIGN AND COMPREHENSION OF TEXT AND GRAPHICS**

**Chair**
Tomi Jaakkola, Tampere University, Finland

**Bar Drawing is a Double-Edged Sword For Solving Inconsistent Word Problems**
Björn de Koning, Erasmus University Rotterdam, Netherlands; Anton Boonen, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands; Joran Jongerling, Erasmus University Rotterdam, Netherlands; Floort van Wesel, Vrije Universiteit Amsterdam, Netherlands; Menno van der Schoot, Vrije Universiteit Amsterdam, Netherlands

**Developing Abstraction and Diagram Use Skills for Solving Math Problems in Early Elementary School**
Yuri Uesaka, The University of Tokyo, Japan

**Learning with Dynamic Visualizations: Influence of Observing Hands, Spatial Ability, and Perspective**
Birgit Brucker, Leibniz-Institut für Wissensmedien (IWM), Germany; Jana Adam, Eberhard Karls Universität Tübingen, Germany; Nadine Marcus, University of New South Wales, Australia; Björn De Koning, Erasmus University Rotterdam, Netherlands; Peter Gerjets, Leibniz-Institut für Wissensmedien (IWM), Eberhard Karls Universität Tübingen, Germany

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### Session X: 15 | Time: 12:00-13:00 | Location: Session Room 8

**SINGLE PAPER: MOTIVATION AND QUANTITATIVE METHODS**

**Chair**
Vibeke Ankersborg, Copenhagen Business School, Denmark

**Exploring the Dynamics of Situated Expectancy-Value Theory: A Repeated Measures Network Analysis**
Patrik Beymer, University of Wisconsin - Madison, United States; Daria Katharina Benden, TU Dortmund University, Germany; Maien Sachisthal, University of Amsterdam, Netherlands

**Social integration and development of intrinsic motivation: A latent transition analysis**
Marion Reindl, University of Salzburg, Austria; Tanja Auer, University of Salzburg, Austria; Burkhard Gniewosz, University of Salzburg, Austria

**Motivational mindset of first-year university students determines purpose and study engagement**
Job Hudig, Erasmus University Rotterdam, Netherlands; Ad Scheepers, Rotterdam School of Management, Erasmus University, Netherlands; Michaela Schippers, Rotterdam School of Management, Erasmus University, Netherlands; Guus Smeets, Erasmus University Rotterdam, Netherlands
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**Time:** 12:00-13:00  
**Location:** Session Room 1

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<td>Marjon Fokkens-Bruinsma, University of Groningen, Netherlands</td>
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<td>Green not Grey: Exposure to Nature as a Resource for Students’ Cognition and Emotional Well-Being</td>
<td>Angelica Ronconi, University of Padova, Italy; Lucia Mason, University of Padova, Italy</td>
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<td>Student Adaptability, Emotions, and Achievement: Navigating New Academic Terrains in a Pandemic</td>
<td>Martin Daumiller, University of Augsburg, Germany; Kristina Loderer, University of Augsburg, Germany; Raven Rinas, Augsburg University, Germany</td>
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<td>Physical fitness and psychosocial health, cognitive and academic outcomes in healthy adolescents</td>
<td>Barbara Haverkamp, University of Groningen, University Medical Center Groningen, Center for Human Movement Sciences, Netherlands; Jaap Oosterlaan, Vrije Universiteit Amsterdam, Netherlands; Esther Hartman, University Medical Center Groningen / University of Groningen, Netherlands</td>
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**Location:** Session Room 15

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<tr>
<td><a href="#">INVITED SYMPOSIUM: SIG 15: VALIDITY AND RELIABILITY EVIDENCE OF MEASURES USED TO SCREEN LEARNING DIFFICULTIES IN MATHS</a></td>
<td>Pirjo Aunio, University of Helsinki, Finland</td>
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<td>Discussant</td>
<td>Annemie Desoete, Ghent University / Artevelde University of applied sciences, Belgium</td>
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<td>Validity and reliability evidence of numeracy measures used in elementary school</td>
<td>Airi Hakkarainen, University of Helsinki, Finland; Annukka Relander, The University of Helsinki, Finland; Pirjo Aunio, University of Helsinki, Finland; Anu Laine, University of Helsinki, Finland</td>
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<td>Validity of an online dyscalculia screener for grades 3 to 9</td>
<td>Johan Korhonen, Åbo Akademi University, Finland; Peppa Rasänen, University of Turku, Finland; Pirjo Aunio, University of Helsinki, Finland; Anu Laine, University of Helsinki, Finland; Airi Hakkarainen, University of Helsinki, Finland; Eija Väisänen, University of Helsinki, Finland; Jonatan Finell, Åbo Akademi University, Finland; Teemu Rajala, University of Turku, Finland; Mikko-Juasi Laakso, University of Turku, Finland</td>
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<td>The SYmbolic Magnitude Processing Test (SYMP-Test). A validation in Belgium and Finland</td>
<td>Bert De Smedt, KU Leuven, Belgium; Johan Korhonen, Åbo Akademi University, Finland; Pirjo Aunio, University of Helsinki, Finland</td>
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<td>Number Estimation Line tasks: The impact of instructional variations</td>
<td>Jo Van Herwegen, UCL Institute of Education, United Kingdom; Laura Outhwaite, UCL- Institute of Education, United Kingdom; Victoria Simms, Ulster University, United Kingdom</td>
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### Session Y: 1
**Time:** 14:30-15:30  
**Location:** Session Room 13

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<td>Huib Tabbers, Erasmus University Rotterdam, Netherlands</td>
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<td>Economic imperatives on CET: Challenges for pedagogical professionality</td>
<td>Christian Hartels, University of Paderborn, Germany; Josefine Finke, University of Paderborn, Germany; Carolin Brandt, University of Paderborn, Germany; Joelle-Marie Krautz, University of Paderborn, Germany</td>
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<td>Measuring Creativity in Business, Medicine, Information and Technical Professions</td>
<td>Silke Fischer, Estgenössische Hochschule für Berufsbildung (SFIVET), Switzerland; Anike Barabasch, EHB, Switzerland</td>
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<td>Key competences: Citizens’ perspectives</td>
<td>Joona Mannonen, Finnish Institute for Educational Research, University of Jyväskylä, Finland; Raija Hämäläinen, University of Jyväskylä, Finland; Jori Lämsä, University of Jyväskylä, Finland; Bram De Wever, Ghent University, Belgium</td>
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**SINGLE PAPER: EDUCATIONAL POLICY AND CONTENT ANALYSIS**

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<th>Actor-structure dynamics, digital learning, and homeschooling during the corona pandemic</th>
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<td>Christian Herzog, Leuphana University Lueneburg, Germany; Alessandro Immanuel Bel, Leuphana University Lueneburg, Germany</td>
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**ICT-related Teacher Professional Development in Germany before COVID-19: Where do we go from here?**

| Lara-Idili Enges, University of Duisburg-Essen, Germany; Manuela Endberg, University of Duisburg-Essen, Germany |

**The Times They Are a-Changin’ (Bob Dylan): Migrants in school system - something old or new?**

| Gülçay Teke, University of Potsdam, Germany; Michel Krogge, Humboldt-University Berlin, Germany |

### Session Y: 3 | Time: 14:30-15:30 | Location: Session Room 2

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

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<th>What COVID-19 distance-education transitions reveals about learning and teaching practices?</th>
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<td>Bernadette Charlier, University of Fribourg, Switzerland; Joris Felder, Haute école pédagogique de Fribourg, Switzerland; Laura Molteni, University of Fribourg, Switzerland; Katharina Baran, University of Fribourg, Switzerland</td>
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**Temporal contiguity in learning biological ecosystem in Virtual Reality and individual differences**

| Porto Laurie, Lead - CNRS / Université de Bourgogne, France; Jean-Michel Boucheix, University of Dijon, LEAD-CNRS, France |

**Effects of Teachers Acting Naturally vs. Didactically During Video Learning**

| Selina Nadine Emhardt, Open Universiteit Nederland, Faculty of Educational Sciences, Netherlands; Halszka Maria Jarodzka, Open University of the Netherlands, Netherlands; Saskia Brand-Gruwel, Open University of the Netherlands, Netherlands; Christian Drumm, FH Aachen University of Applied Sciences, Germany; Tamara Van Gog, Utrecht University, Netherlands |

### Session Y: 4 | Time: 14:30-15:30 | Location: Session Room 14

**SINGLE PAPER: AT-RISK STUDENTS**

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<td>Karlijn Soppe, Utrecht University, Netherlands; Irene Klugkist, Utrecht University, Netherlands; Theo Wubbels, Utrecht University, Netherlands; Leoniek Wijngaards-de Meij, University Utrecht, Netherlands</td>
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**The long-haul of COVID: Fall 2020 challenges for students, families, & staff in high-poverty schools**

| Courtney Pollack, Boston College, Massachusetts Institute of Technology, United States; Maria Theodorakakis, Boston College, United States; Yan Leigh, Boston College, United States; Mary E. Walsh, Boston College, United States; Allison Morgan, Boston College, United States |

**Resilient students in the social structure of the class**

| Dóra Fanni Szabó, MTA-SZTE Research Group on the Development of Competencies, Hungary |

### Session Y: 5 | Time: 14:30-15:30 | Location: Session Room 9

**SINGLE PAPER: LIFELONG AND WORKPLACE LEARNING**

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<tr>
<th>Chair</th>
<th>Learning Barriers at the Workplace: Development and Validation of a measurement instrument</th>
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<td></td>
<td>Sebastian Anselmann, University of Education Schwäbisch Gmünd, Germany; Uwe Fallhauer, University of Education Schwäbisch Gmünd, Germany</td>
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</table>

**Continuing education through video-based interaction analysis**

| Laurent Filliettaz, University of Geneva, Switzerland; Stephanie Garcia, University of Geneva, Switzerland; Marianne Zogmal, University of Geneva, Switzerland |

**Low-educated adults’ perceived educational needs and barriers to learning: Evidence from PIAAC**

| Lisse Van Nieuwenhove, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium |

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**FRIDAY, 27 AUGUST 2021**

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### Session Y: 6 (Time: 14:30-15:30, Location: Session Room 7)

**SINGLE PAPER: SECONDARY EDUCATION**

**Chair**
Javier Fernández, Universidad Autonoma de Madrid, Spain

- **Manifestations of non-interest**
  Jael Draijer, University Utrecht, Netherlands; Larike Bronkhorst, Utrecht University, Netherlands; Sanne Akkerman, Utrecht University, Netherlands

- **Micro-analyses of students’ productions in physics reveal misunderstandings not misconceptions**
  Alaric Kohler, HEP-BEJUNE, Switzerland; Anne-Nelly Perret-Clermont, University of Neuchâtel, Switzerland

- **Orycty skills development in the language of instruction (L2) through Dialogic Literary Gatherings**
  Maite Santiago-Garabieta, University of Deusto, Spain; Rocío García-Carrion, University of Deusto, Spain; Aitana Fernandez-Villardon, University of Deusto, Spain

### Session Y: 7 (Time: 14:30-15:30, Location: Session Room 16)

**SINGLE PAPER: QUALITATIVE METHODS AND HIGHER EDUCATION**

**Chair**
Sergio Grossi, University of Padova, Italy, Italy

- **Students’ perception of critical thinking as related to the undergraduate thesis**
  Maria Öhrstedt, Stockholm University, Sweden

- **Competing meanings of international experiences for researchers: Collaborative autoethnography**
  Yusuke Sakurai, Ochanomizu University, Japan

- **Supervision and academic literacies**
  Karl-Heinz Pigner, Copenhagen Business School, Denmark; Vibeke Ankersborg, Copenhagen Business School, Denmark

### Session Y: 8 (Time: 14:30-15:30, Location: Session Room 10)

**SINGLE PAPER: COGNITIVE DEVELOPMENT AND SKILLS**

**Chair**
Rianne van Lambalgen, Utrecht University, Netherlands

- **Self-Regulated Learning in Turkish Preschool Context**
  Seda Sarac, Bahcesehir University, Turkey; Sema KARAKELLE, Istanbul Universitesi, Turkey

- **The Relationship between Executive Functioning and Self-Regulated Learning in Australian Children**
  Deborah Pino-Pasternak, University of Canberra, Australia; Debora Valcan, Murdoch University, Australia; Helen Davis, Murdoch University, Australia

- **Self-regulation in instructional and guided play: Insights from pre-kindergarten classrooms in Chile**
  Valeska Grau, Pontificia Universidad Católica de Chile, Chile; Amaya Lorca de Urante, Pontificia Universidad Católica de Chile, Chile; Carolina Araya, Pontificia Universidad Católica de Chile, Chile

### Session Y: 9 (Time: 14:30-15:30, Location: Session Room 4)

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

**Chair**
Claudia Schreiner, University of Innsbruck, Austria, Austria

- **Self-efficacy, emotions, and peer support of university students during the COVID-19 pandemic**
  Jasperina Brouwer, University of Groningen, Netherlands; Liga Klavina, University of Groningen, Netherlands; Marloes Huis, University of Groningen, Netherlands; Hanke Kopersthoek, University of Groningen, Netherlands

- **Student-Teacher Relationships Drive Student Help-Seeking from Teachers for Math Learning Challenges**
  Kevin Jarbo, Carnegie Mellon University, United States; Nikki Labczewski, Carnegie Mellon University, United States; J. Elizabeth Richey, Carnegie Mellon University, United States; Elke Morton, Georgia Institute of Technology, United States; Kenneth R. Koedinger, Carnegie Mellon University, United States

- **Dynamic relations of achievement goal orientations with daily experiences of success and failure**
  Florian Schmiedek, DIPF | Leibniz Institute for Research and Information in Education, Germany; Judith Dirk, Deutsches Institut für Internationale Pädagogische Forschung (DIPF), Germany; Andrea Schmidt, Deutsches Institut für Internationale Pädagogische Forschung (DIPF), Germany; Andreas B. Neubauer, Deutsches Institut für Internationale Pädagogische Forschung (DIPF), Germany
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<th>Session Y: 10</th>
<th>Time: 14:30-15:30</th>
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<tr>
<td><strong>SINGLE PAPER: STUDENT LEARNING AND TEACHING</strong></td>
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<td><strong>Chair</strong></td>
<td><strong>Student-centred learning environments promoting regulated learning: A mixed-methods approach</strong></td>
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<tr>
<td>Jarkko Hautala, Niilo Mäki Institute, Finland</td>
<td>Juulia Lahdenperä, Håme University of Applied Sciences, Finland; Johanna Rämö, University of Helsinki, Finland; Lisa Postareff, HAMK University of Applied Sciences, Finland</td>
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<tr>
<td><strong>Defining key components of Challenge Based Learning in engineering education: a review study</strong></td>
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<td>Karolina Doulougeri, Eindhoven School of Education, Netherlands; Jan Vermunt, Eindhoven University of Technology, Netherlands; Gunter Bombaerts, Eindhoven University of Technology, Netherlands; Michael Bots, Eindhoven University of Technology, Netherlands</td>
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<td><strong>Pedagogical Patterns for Seamless Learning in Higher Education</strong></td>
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<td>Bernadette Ditger, University of St.Gallen, Switzerland; Luci Gommers, University of St.Gallen, Switzerland</td>
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<th>Time: 14:30-15:30</th>
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<tr>
<td><strong>SINGLE PAPER: SOCIAL INTERACTION IN COLLABORATIVE LEARNING</strong></td>
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<td><strong>Chair</strong></td>
<td><strong>A bodily view of collaboration in asymmetrical peer interactions in early childhood education</strong></td>
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<td>Charalambos Charalambous, University of Cyprus, Cyprus</td>
<td>Juliene Fensma, University of Tampere, Finland</td>
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<td><strong>Motivational and emotional conditions and socially shared regulation – two sides of the same coin</strong></td>
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<td>Hanna Jarvenoja, University of Oulu, Finland; Tiina Törmanen, University of Oulu, Finland; Tatiana Shubina, University of Oulu, Finland; Jonna Malmberg, University of Oulu, Finland</td>
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<td><strong>Process-mining the shared physiological arousal during collaborative problem solving</strong></td>
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<td>Muhterem Dindar, University of Oulu, Finland; Sanna Järvelä, University of Oulu, Finland; Eetu Haataja, University of Oulu, Finland; Ahsen Çini, University of Oulu, Finland</td>
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<th>Session Y: 12</th>
<th>Time: 14:30-15:30</th>
<th>Location: Session Room 18</th>
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<tr>
<td><strong>SINGLE PAPER: EDUCATIONAL PSYCHOLOGY IN TEACHER PROFESSIONAL DEVELOPMENT</strong></td>
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<td><strong>Chair</strong></td>
<td><strong>Entry characteristics of student teachers and their academic success. A person-centered approach</strong></td>
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<tr>
<td>Janina Roloff-Bruchmann, IPN - Leibniz Institute for Science and Mathematics Education, Germany</td>
<td>Antje Biermann, Saarland University, Germany; Julia Karbach, University of Koblenz-Landau, Germany; Frank Spinath, Saarland University, Germany; Roland Brunken, Saarland University, Germany</td>
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<td><strong>How skilled are future teachers in the domains of learning, thinking, reading and ICT literacy?</strong></td>
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<td>Györgyver Molnár, University of Szeged, Hungary</td>
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<th>Time: 14:30-15:30</th>
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<td><strong>SINGLE PAPER: QUANTITATIVE METHODS IN PRIMARY EDUCATION</strong></td>
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<td><strong>Chair</strong></td>
<td><strong>Teacher well-being in Taiwan: from real-time experience in class to general well-being</strong></td>
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<td>Stefanie Rach, Otto-von-Guericke-Universität Magdeburg, Germany</td>
<td>Pei-Hsin Li, University of Oxford, United Kingdom; Diane Mayer, University of Oxford, United Kingdom; Lars-Erik Malmberg, University of Oxford, United Kingdom</td>
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<tr>
<td><strong>How did Covid-19 related lockdowns affect learning at different levels of education?</strong></td>
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<tr>
<td>Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands</td>
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### Session Y: 14
**Time:** 14:30-15:30  
**Location:** Session Room 6

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<thead>
<tr>
<th><strong>SINGLE PAPER: SCIENCE EDUCATION</strong></th>
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<tr>
<td><strong>Chair</strong></td>
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<tr>
<td>Nadine Schlomske-Bodenstein, Karlsruhe University of Education, Germany</td>
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</table>

**Preparing to Learn Linear Algebra: Report on an Ongoing Study**  
Vera Baumgartner, ETH Zurich, Switzerland; Simona Daguati, ETH Zurich, Switzerland; Dragan Trninic, ETH Zurich, Switzerland; Norbert Hungerbühler, ETH Zurich, Switzerland; Meike Akveld, ETH Zurich, Switzerland; Alexander Caspar, ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland

**Assessing control of variables strategy in physics of high school students**  
De Vo, University of Szeged, Doctoral School of Education, Hungary

**Effective Science and Mathematics Teaching: an overview of meta-analyses**  
Maximilian Knogler, Technical University of Munich (TUM), Germany; Andreas Hetmanek, Technical University of Munich (TUM), Germany; Tina Seidel, Technische Universität München, Germany

### Session Y: 15
**Time:** 14:30-15:30  
**Location:** Session Room 8

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<tr>
<th><strong>ROUNDTABLE: TEACHING AND TEACHER EDUCATION</strong></th>
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<td><strong>Chair</strong></td>
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<tr>
<td>Chiara Pacini, University of Florence, Italy</td>
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**Exploring learning and teaching in interdisciplinary educational designs for future citizens**  
Anniken Furberg, University of Oslo, Norway; Kenneth Sletseth, University of Oslo, Norway; Andreas Lund, University of Oslo, Norway; Hans Christian Amsteth, University of Oslo, Norway; Ole Andreas Kvarme, Department of Teacher Education and School Research, University of Oslo, Norway; Ingvill Rasmussen, Department of Education, Norway; Kari Anne Radnes, University of Oslo, Norway; Elin Sæther, University of Oslo, Department of Teacher Education and School Research, Norway; Kristin Vassie, University of Oslo, Department of Teacher Education and School Research, Norway

**Tutorials in teacher training: Perspectives on the formation of professional teacher action**  
Matthea Wagener, Institute for Educational Science, TU Dresden, Germany

**Implementing and testing a gender-free curriculum for the development of digital citizenship**  
Ania Tadlaoui-Brahmi, HEP Fribourg, Switzerland

### Session Y: 16
**Time:** 14:30-15:30  
**Location:** Session Room 3

<table>
<thead>
<tr>
<th><strong>ROUNDTABLE: HIGHER EDUCATION</strong></th>
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<tr>
<td><strong>Chair</strong></td>
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<tr>
<td>Tim Mainhard, Utrecht University, Netherlands</td>
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**Exploring Students’ Critical Thinking in Undergraduate Theses in the Discipline of Education**  
Max Scheja, Stockholm University, Sweden

**Developing a model for self-regulated learning in a higher education medical workplace environment**  
Evelyn Steinberg, Vetmeduni Vienna, Austria; Franziska Pereis, Saarland University, Germany; Ulrike Auer, Vetmeduni Vienna, Austria; Lukas Schwarz, Vetmeduni Vienna, Austria

**The Physiological Mechanisms of Learning through Productive Failure**  
Cléa Formaz, ETH Zurich, Switzerland; Venera Gashaj, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Dragan Trninic, Swiss Federal Institute of Technology ETH Zurich, Switzerland; Manu Kapur, ETH Zurich, Switzerland
INVITED SYMPOSIUM: SIG 16: HOW TEACHERS THINK ABOUT SRL AND JUDGE SRL IN STUDENTS

Chair
Janneke van de Pol, Utrecht University, Netherlands

Organisers
Janneke van de Pol, Utrecht University, Netherlands;
Charlotte Dignath, DIPF Leibniz Institute for Education Research Frankfurt, Germany

Discussant
Mariette van Loon, University of Bern, Switzerland

Assessing Teachers’ Professional Knowledge about Self-regulated Learning
Yves Karlen, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; Carmen Hirt, University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Switzerland; Silke Hertel, Ruprecht-Karls-Universität Heidelberg, Germany

Teachers’ Judgment Accuracy of Students’ Monitoring: A Conceptual Framework and Descriptive Study
Janneke van de Pol, Utrecht University, Netherlands; Sophie Oudman, Utrecht University, Netherlands

The illusion of incompetence is a burden for children: self-evaluation biases and school judgment
Anne-Laure de Place, Université Grenoble Alpes, France; Rebecca Lévesque-Guillemette, Université du Québec à Montréal, Canada; Andrée-Ann Labranche, 2Université du Québec à Montréal, Canada; Therese Bouffard, Université du Québec à Montréal, Canada; Pascal Panou, Université Grenoble Alpes, France

Assessing teachers’ diagnostic skills for applying the use of self-regulatory strategies
Charlotte Dignath, DIPF Leibniz Institute for Education Research Frankfurt, Germany; Phuc Tran Lu, Goethe-Universität Frankfurt am Main, Germany; Mareke Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

Session Z: 1

Time: 15:45-16:45
Location: Session Room 7

POSTER PRESENTATION: MOTIVATION, EMOTION AND METACOGNITION

Chair
Lina Markauskaite, University of Sydney, Australia

Teacher Value Messages Predict Greater Engagement through Expectancy, Value, and Cost Beliefs
Dave Putwain, Liverpool John Moores University, United Kingdom; Andrea Mallaburn, Liverpool John Moores University, United Kingdom

Italian university students’ learning experience during COVID-19 forced online education
Giulia Vettori, University of Florence, Italy

Metacognition During Visualization and Metavisualization Practice: Constructs and Instruments
Hsin-Yi Chang, National Taiwan Normal University, Taiwan; Theerapong Binali, National Taiwan University of Science and Technology, Taiwan; Yen-Jung Chang, National Taiwan Normal University, Taiwan; Yun-Syuan He, National Taiwan Normal University, Taiwan; Ching-Hwa Chang, National Taiwan Normal University, Taiwan; An-Yu Wu, National Taiwan Normal University, Taiwan

A Study of Homophily in Peer Group Members’ Academic Motivation
Izzet Utku Caybas, Middle East Technical University, Turkey; Nur Akkus Cakir, Middle East Technical University, Turkey; Yesim Capa Aydint, Middle East Technical University, Turkey

Elucidating the Research on Achievement Goals and Academic Dishonesty: A Meta-Analysis
Tanja Fritz, University of Augsburg, Germany; Anne Petersen, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany; Martin Daumiller, University of Augsburg, Germany

Relating Teachers’ Coping Styles to Student Noise and Perceived Stress
Raphaëla Fenzl, University of Passau, Germany; Detlef Urtahne, University of Passau, Germany
## Session Z: 2

**Time:** 15:45-16:45  
**Location:** Session Room 10

### POSTER PRESENTATION: EDUCATIONAL POLICY AND SCHOOL EFFECTIVENESS

**Chair**  
Ali Yildirim, University of Gothenburg, Sweden

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<th>Authors</th>
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<tbody>
<tr>
<td>School climate and educational reform - The relationship factor</td>
<td>Orly Shapira, The Hebrew University of Jerusalem, Israel; Benzi Slakmon, Tel Aviv University, Israel</td>
</tr>
<tr>
<td>&quot;I’ll be There&quot;: Improving Online Class Attendance With a Commitment Nudge During COVID-19</td>
<td>Robert Weijers, Erasmus University Rotterdam, Netherlands; Lesya Ganushchak, Erasmus University Rotterdam, Netherlands; Kim Ouwehand, Erasmus University Rotterdam, Netherlands; Björn de Koning, Erasmus University Rotterdam, Netherlands</td>
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<tr>
<td>Beliefs and Behaviours: A longitudinal study of leadership networks and self-efficacy</td>
<td>Jasperina Brouwer, University of Groningen, Netherlands; Yi-Hwa Liu, National Taipei University of Education, Taiwan; Alan Daly, University of California, United States</td>
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<tr>
<td>Using student achievement data for decision making to improve school effectiveness</td>
<td>Girts Burgmanis, University of Latvia, The Interdisciplinary Centre for Educational Innovation, Latvia; Dace Namsone, University of Latvia, Latvia; Pavels Pestovs, University of Latvia, The Interdisciplinary Centre for Educational Innovation, Latvia; Ilze Saleniece, University of Latvia, Interdisciplinary Centre for Educational Innovation, Latvia</td>
</tr>
<tr>
<td>How to get teachers excited about all-day school. Leadership’s influence on teachers’ enthusiasm</td>
<td>Karsten Wutschka, Center for Research on Education and School Development, TU Dortmund University, Germany; Lisa Brücher, Center for Research on Education and School Development, TU Dortmund University, Germany; Karin Lossen, Center for Research on Education and School Development, TU Dortmund University, Germany</td>
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<tr>
<td>Insights from Field Testing of School Leadership Framework</td>
<td>Ilze Saleniece, University of Latvia, Interdisciplinary Centre for Educational Innovation, Latvia; Dace Namsone, University of Latvia, Latvia</td>
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## Session Z: 3

**Time:** 15:45-16:45  
**Location:** Session Room 18

### POSTER PRESENTATION: QUALITATIVE METHODS

**Chair**  
Kate Xu, Open University of the Netherlands, Netherlands

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<tr>
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<tbody>
<tr>
<td>Training Teamwork Skills Online: Possibilities of a Multi-player Serious Game</td>
<td>Lara van Peppen, Erasmus University Medical Center, Netherlands; Tjitske Faber, Erasmus University Medical Center, Netherlands; Vicki Erasmus, Erasmus University Medical Center, Netherlands; Mary Dankbaar, Erasmus MC, Netherlands</td>
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<tr>
<td>What Makes Educational Development Initiatives Successful? – a case study</td>
<td>Klara Bolander Laksov, Stockholm University, Sweden</td>
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<tr>
<td>An Empirical Comparison of Methods for Observing Motivationally Supportive STEM Teaching Practices</td>
<td>Sanheeta Potola, McGill University, Canada; So Yeon Lee, McGill University, Canada; Solomon Friedman, McGill University, Canada; Eila Christaams, McGill University, Canada; Kira Rudakova, McGill University, Russia; Harshadaa Deshpande, McGill University, Canada; Phoenix Horrocks, McGill University, Canada; Sun Jung Choi, McGill University, Canada; Kristy Robinson, Michigan State University, United States</td>
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<td>A preschool for all children? Applying a self-reflection tool for improving inclusion</td>
<td>Hanna Ginner Hau, Stockholm University, Sweden; Heidi Salenius, Stockholm University, Sweden; Eva Björck Åkesson, Jönköping University, Sweden</td>
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<tr>
<td>Identification item properties related to the instructional sensitivity of mathematics test items</td>
<td>Stephanie Musow, University of Teacher Education St.Gallen, Switzerland; Jan Hochheiber, St. Gallen University of Teacher Education, Switzerland; Stephan Schönberger, University of Teacher Education Thurgau, Switzerland; Mark K. List, German Institute for International Educational Research (DIPF), Germany; Johannes Hartig, German Institute for International Educational Research (DIPF), Germany; Alexander Naumann, DIPF; Leibniz Institute for Research and Information in Education, Germany</td>
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<tr>
<td>Exploring students’ perceptions on citizenship education in authentic learning environments</td>
<td>Reineke de Leeuw, Saxion University of Applied Sciences, Netherlands; Annemarie Walberg, Saxion University of Applied Sciences, Netherlands; Willeke Slingerland, Saxion University of Applied Sciences, Netherlands; Detlef Wagenaar, Saxion University of Applied Sciences, Netherlands</td>
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## POSTER PRESENTATION: SOCIAL SCIENCES

**Chair**
Tessa de Leur, Amsterdam University of Applied Sciences (AUAS), Netherlands

**Interest in doctoral studies in relation to experiences of burnout and drop-out intentions**
Solveig Corrè, University of Helsinki, Finland; Kirsi Pyhältö, University of Helsinki, Finland; Jouni Peltonen, University of Oulu, Finland; Erika Löfström, University of Helsinki, Finland

**Education and spirituality in a project for the reintegration of convicts**
Sergio Grossi, University of Padova, Italy; Italy

**Changes in reading habits during the COVID-19 confinement in Spain**
Pablo Delgado, University of Valencia, Spain; Maria Angéles Serrano, University of Valencia, Spain; Nadina Gómez-Merino, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Marina Pi-Ruano, University of Valencia, Spain; Alba Rubio, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Noemi Skrobiszewska, University of Valencia, Spain; Ladislao Salmeron, University of Valencia, Spain

**Young professionals’ conceptions of the tax system in Germany: An interview study**
Carmela Aprea, University of Mannheim, Germany

## POSTER PRESENTATION: TEACHING AND TEACHER EDUCATION

**Chair**
Nina Bonderup Dohn, University of Southern Denmark, Denmark

**How to trigger historical reasoning in elementary school students? Creating a teacher PD-programme**
Yolande Potjer, University of Amsterdam, Netherlands

**Challenges in the Recruitment of Student Teachers for Vocational Education in Germany**
Lars Müller, JLU Gießen, Germany

**Sustainability in the context of Responsible Research and Innovation as perceived by teachers**
Mirjam Burget, University of Tartu, Estonia

**Teaching in flexible spatial and digital conditions**
Anna Maria Hipkiss, Göteborgs universitet, Sweden; Pernilla Andersson Varga, Center for Development, Learning & Research, City of Gothenburg, Sweden; Sylvana Sofkova Hashemi, University of Gothenburg; Halmstad University, Sweden; Maria Spante, University West, Sweden; Martin Tallvid, Center for Development, Learning & Research, City of Gothenburg, Sweden; Mats Widigson, Center for Development, Learning & Research, City of Gothenburg, Sweden

**Efficacy Messages used by Teachers Prior to High Stakes Examinations**
Hannah Wilkinson, Liverpool John Moores University, United Kingdom; Dave Putwain, Liverpool John Moores University, United Kingdom; Andrea Malaburn, Liverpool John Moores University, United Kingdom
### Session Z: 6  
**Time:** 15:45-16:45  
**Location:** Session Room 8

**POSTER PRESENTATION: MATHEMATICS**

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<tr>
<th>Chair</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Juuso Henrik Nieminen, University of Eastern Finland, Finland</td>
<td><strong>Testing the effectiveness of a cognitive training designed for academically talented children</strong>&lt;br&gt;<strong>Differences in Word-Problem Solving Based on Item Characteristics</strong>&lt;br&gt;<strong>Stability of task values in a university mathematics course</strong>&lt;br&gt;<strong>Teach what you have been preached? Influencing preservice teachers’ views on mathematical content</strong>&lt;br&gt;<strong>Reciprocal effects between self-determined motivation and engagement in mathematics instruction</strong>&lt;br&gt;<strong>Improving Instructional Quality by Comparing and Discussing Multiple Strategies</strong></td>
<td>Suzanne Splinter, Katholieke Universiteit Leuven, Belgium; Bart Vogelaar, Leiden University, Netherlands&lt;br&gt;Sarah Powell, University of Texas at Austin, United States; Tessa Arsenuault, The University of Texas at Austin, United States&lt;br&gt;Stefanie Rach, Otto-von-Guericke-Universität Magdeburg, Germany; Jan Retelsdorf, University of Hamburg, Germany&lt;br&gt;Simon Guse, University of Muenster, Germany; Dorothe Kienhues, University of Münster, Germany; Regina Jucks, WWU Münster, Germany&lt;br&gt;Tanja Held, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland&lt;br&gt;Jon Star, Harvard University, United States; Bethany Rittle-Johnson, Vanderbilt University, United States; Kelley Durkin, Vanderbilt University, United States; Jessica Sommer, Vanderbilt University, United States</td>
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### Session Z: 7  
**Time:** 15:45-16:45  
**Location:** Session Room 16

**POSTER PRESENTATION: COMPETENCIES**

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<tr>
<td>Antti Koskinen, University of Tampere, Finland, Finland</td>
<td><strong>Two dimensions of teacher students’ digital competence: practical and algorithmic</strong>&lt;br&gt;<strong>The Effect of Mentoring on Knowledge Gain for Beginning Teachers</strong>&lt;br&gt;<strong>Aggression management of pre-service teachers: Competence development via online simulations</strong>&lt;br&gt;<strong>Teacher educators’ competence to deal with diversity</strong>&lt;br&gt;<strong>Learning digital collaboration competencies through business simulation game: students’ insights</strong>&lt;br&gt;<strong>Enhancing training effectiveness: a methodology to capture dynamic transfer trajectories</strong></td>
<td>Milla Kruskopf, University of Helsinki, Finland; Heidi Lammassaari, University of Helsinki, Finland; Kirsti Lorkia, University of Helsinki, Finland&lt;br&gt;Eva Anderson-Park, University of Duisburg-Essen, Germany; Stephanie Morgenroth, Junior-Uni Wuppertal, Germany; Hermann J. Abs, University of Duisburg-Essen, Germany&lt;br&gt;Delphine Franco, University of Ghent, Belgium; Ruben Vanderlinde, Ghent University, Belgium; Martin Valkke, Ghent University, Belgium&lt;br&gt;Benjamin Ponet, University of Ghent, Belgium; Harine Tack, Ghent University, Belgium; Wendelien Vantieghem, Vrije Universiteit Brussel, Belgium; Piet Van Avermaet, Ghent University, Belgium; Ruben Vanderlinde, Ghent University, Belgium&lt;br&gt;Raja Hämäläinen, University of Jyväskylä, Finland; Kirsi Lainema, University of Jyväskylä, Finland; Kirs Syynimaa, University of Jyväskylä, Finland; Timo Lainema, University of Turku, Finland&lt;br&gt;Tine van Den Bossche, University of Antwerp, Belgium; David Gijsbers, University of Antwerp, Belgium; Sven De Maeyer, Antwerp University, Belgium</td>
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**FRIDAY, 27 AUGUST 2021**
### Session Z: 8
#### Time: 15:45-16:45
#### Location: Session Room 11

#### POSTER PRESENTATION: EMOTION AND AFFECT

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td>You Make Me Feel (2.0) – Emotions in Contentious Educational Discussions on Digital Settings</td>
<td>Efrat Firer, The Hebrew University of Jerusalem, Israel; Omer Keynan, The Hebrew University of Jerusalem, Israel; Benzi Slakmon, Tel Aviv University, Israel; Baruch Schwarz, Hebrew University of Jerusalem, Israel</td>
</tr>
<tr>
<td>Parents, Teachers, Peers – Who matters most for school students’ subjective and objective stress?</td>
<td>Frances Hoterichter, University of Greifswald, Germany; Miriam Hufenbach, University Greifswald, Germany</td>
</tr>
<tr>
<td>Does confusion predict greater engagement in learning physics?</td>
<td>Barbara Balaz, Catholic University of Croatia, Croatia; Nina Pavlin-Bernardic, Faculty of Humanities and Social Sciences, Croatia</td>
</tr>
<tr>
<td>Teachers and Student Creativity in Elementary School</td>
<td>Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Shoshana Yakobov, University of Haifa, Faculty of Education, Israel; Micky Shomron, University of Haifa, Faculty of Education, Israel; Hod Orkibi, University of Haifa, Israel</td>
</tr>
<tr>
<td>Emotion understanding and language among preschool-age single and dual language learners</td>
<td>Anika Jurke, University of Bern, Institute of Educational Science, Switzerland; Simona Halliday, University of Bern, Institute of Educational Science, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland</td>
</tr>
<tr>
<td>Assessing Academic Emotions in Civic Education: Development and Validation of Self-Report Scales</td>
<td>Elisabeth Graf, University of Vienna, Austria; Dana Murano, ACT, United States; Thomas Götz, University of Vienna, Austria</td>
</tr>
</tbody>
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### Session Z: 9
#### Time: 15:45-16:45
#### Location: Session Room 17

#### POSTER PRESENTATION: MOTIVATION AND EMOTION

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Motivation of first-year nursing students in France</td>
<td>Margault Sacré, Université Clermont Auvergne &amp; Université de Liége, France; Benjamin Le Hénaff, Université Clermont Auvergne, France; Marie-Christine Tozcek, Université Clermont Auvergne, France; Dominique Lafontaine, Université de Liége, Belgium</td>
</tr>
<tr>
<td>Why Do They Enroll in this Course? Undergraduates’ Course Choice from a Motivational Perspective</td>
<td>Hye Rin Lee, University of California Irvine, United States; Luise von Kesperlingk, University of California, Irvine, United States; Richard Arum, University of California, Irvine, United States; Jacquelyne Eccles, University of California, Irvine, United States</td>
</tr>
<tr>
<td>Expert perspectives on motivation regulation strategies targeting enjoyment of learning</td>
<td>Emily Cowin-Renner, Hector Research Institute of Education Sciences and Psychology, Germany; Kou Murayama, Hector Research Institute of Education Sciences and Psychology, Germany</td>
</tr>
<tr>
<td>COVID-19 effects on teachers’ teaching-related emotions in spring 2020</td>
<td>Jere Riekkinen, Tampereen yliopisto, Finland; Mati Murtonen, University of Turku, Finland; Tahani Alabdouh, Tampere University, Finland; Trang Nguyen, University of Turku / Faculty of Education, Finland; Henna Vippu, University of Turku, Finland</td>
</tr>
<tr>
<td>Validation of the Task Value Assessment for Secondary Students Scale with Portuguese students</td>
<td>Pedro Leite da Silva, ISPA-Instituto Universitário, Portugal; Francisco Peixoto, ISPA - Instituto Universitário / CIE - ISPA, Portugal</td>
</tr>
<tr>
<td>Piloting a Control-Value Intervention Promoting Adaptive Achievement Emotions in University Students</td>
<td>Christiane Hoessle, University of Munich (LMU), Germany; Kristina Loderer, University of Augsburg, Germany; Reinhard Pekrun, Ludwig-Maximilians-Universität, Germany</td>
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</table>
### Session Z: 10 | Time: 15:45-16:45 | Location: Session Room 9

**POSTER PRESENTATION: LEARNING APPROACHES AND HIGHER EDUCATION**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Age-based differences in effects of sensorimotor- and multisensory-enriched vocabulary training</td>
<td>Brian Mathias, Technical University Dresden, Germany; Christian Andrá, University of Leipzig, Germany; Anika Schwager, University of Leipzig, Germany; Manuela Macedonia, Johannes Kepler University Linz, Austria; Katharina von Kriegstein, Technical University Dresden, Germany</td>
</tr>
<tr>
<td>Transformative Learning in Higher Education: Towards the Holistic Education in the Age of Uncertainty</td>
<td>Anastasija Falkenstern, Justus-Liebig-University Giessen, Germany; Edith Braun, Justus-Liebig-University Giessen, Germany</td>
</tr>
<tr>
<td>The effects of a Biomedical Sciences curriculum reform on students’ perceived competence development</td>
<td>Sanne Rovers, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands; Jeroen Van Merrienboer, Maastricht University, Netherlands; Hans Savelberg, Maastricht University, Netherlands</td>
</tr>
<tr>
<td>University students’ resilience and self-management: in support of deep approaches to learning?</td>
<td>Sonia Ilie, University of Cambridge, United Kingdom; Jan Vemunt, Eindhoven University of Technology, Netherlands</td>
</tr>
<tr>
<td>Reflecting on lived experiences in story completions of higher education faculty</td>
<td>Kinga Kaplar-Kodacsy, Eötvös Loránd University, Hungary; Helga Dorner, Eötvös Loránd University, Hungary</td>
</tr>
<tr>
<td>Collaborative synthesis writing quality and collaboration satisfaction: the impact of roles</td>
<td>Karen Puzey, Ghent University, Belgium; Bram De Wever, Ghent University, Belgium</td>
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<tr>
<td>How first year experience relates to university students’ cognitive, social, and value developments</td>
<td>Maggie Zhao, The University of Hong Kong, Hong Kong</td>
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### Session Z: 11 | Time: 15:45-16:45 | Location: Session Room 13

**POSTER PRESENTATION: COMPUTER-ASSISTED LEARNING**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>Fostering Learning in Computer-based Office Simulation by Problem-Solving Analytics (PSA)</td>
<td>Andreas Rausch, University of Mannheim, Germany; Jürgen Safied, University of Mannheim, Germany; Viola Deutscher, University of Mannheim, Germany; Esther Winther, University of Duisburg-Essen, Germany; Steffen Brandt, OpenCampus.sh, Germany; Sabrina Ludwig, University of Mannheim, Germany; Sophia Gentner, University of Mannheim, Germany; Chris Mayer, University of Mannheim, Germany; Georg Danush Gorshid, University of Mannheim, Germany; Anke Braunstein, University of Mannheim, Germany; Jessica Paessler, University of Duisburg-Essen, Germany</td>
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<tr>
<td>Extrinsically integrated instructional quizzes in learning games: an educational disaster or not?</td>
<td>Cyril Brom, Charles University, Czech Republic; Lucie Jínská, Faculty of Education, Charles University, Czech Republic; Petra Sedláčková, Faculty of Arts, Charles University, Czech Republic; Lukáš Kolek, Faculty of Mathematics and Physics, Charles University, Czech Republic; Tereza Tetourová, Faculty of Education, Charles University, Czech Republic; Kristina Vohná, Czech Television, Czech Republic; Jiří Lukavský, Institute of Psychology, Czech Academy of Sciences, Czech Republic</td>
</tr>
<tr>
<td>Digital Learning</td>
<td>Falk Radisch, Institute of school education and educational research, Germany; Larissa Habeck, University Rostock, Germany; Mona Arndt, University Rostock, Germany</td>
</tr>
<tr>
<td>VR learning environments: Is it possible to support orientation with cueing?</td>
<td>Daniela Decker, Deutsches Institut für Erwachsenenbildung, Germany; Martin Merkt, Deutsches Institut für Erwachsenenbildung, Germany</td>
</tr>
<tr>
<td>Interactive learning platforms for teaching occupation-specific content in healthcare professions</td>
<td>Anna-Teresa Engl, Technische Universität München (TUM), Germany</td>
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<tr>
<td>Metacognitive Support in Digital Learning Environments for Primary School Students</td>
<td>Doreen Prasse, Schwyz University of Teacher Education, Switzerland; Michael Hielischer, Pädagogische Hochschule Schwyz, Switzerland; Elena Iten, Schwyz University of Teacher Education, Switzerland; Martina Conti, Schwyz University of Teacher Education, Switzerland; Rea Minder, Schwyz University of Teacher Education, Switzerland; Franziska Aeschlimann, Schwyz University of Teacher Education, Switzerland</td>
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**FRIDAY, 27 AUGUST 2021**

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<th>Session Z: 12</th>
<th>Time: 15:45-16:45</th>
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<tbody>
<tr>
<td>POSTER PRESENTATION: TEACHER PROFESSIONAL DEVELOPMENT</td>
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<tr>
<td><strong>Chair</strong></td>
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</table>
Brian Cahill, Leibniz Information Centre for Science and Technology, Germany  |
| **Building a Community of Practice to empower teachers in using open access educational resources**  |
Theresa Ruwe, Humboldt University Berlin, Germany; Maria Zimmermann, Humboldt University of Berlin, Germany; Elisabeth Mayweg, Humboldt University of Berlin, Germany  |
| **The development of lecturers’ collaboration networks during departmental professional development**  |
Ire Noben, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Jan Folkert Deinum, University of Groningen, Netherlands; Adriaan Hofman, University of Groningen, Netherlands  |
| **The Use of a Mechanical MOOC to Build a Practitioner Community of Practice in Educational Dialogue**  |
Meaghan Brugha, University of Cambridge, United Kingdom  |
| **Nursing teachers’ collaboration and professional development**  |
Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany  |
| **The development of lecturers’ collaboration networks during departmental professional development**  |
Ire Noben, University of Groningen, Netherlands; Jasperina Brouwer, University of Groningen, Netherlands; Jan Folkert Deinum, University of Groningen, Netherlands; Adriaan Hofman, University of Groningen, Netherlands  |
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| **The Use of a Mechanical MOOC to Build a Practitioner Community of Practice in Educational Dialogue**  |
Meaghan Brugha, University of Cambridge, United Kingdom  |
| **Nursing teachers’ collaboration and professional development**  |
Veronika Anselmann, University of Education Schwäbisch Gmünd, Germany  |
ICT DEMONSTRATION: A NEW METHOD TO EVALUATE MOVEMENT AND SHAPE QUALITY IN CHILDREN’S POOR HANDWRITING

A new method to evaluate movement and shape quality in children’s poor handwriting
Christian Marquardt, Science&Motion GmbH, Germany; Carlo Di Brina, Department of Human Neuroscience, Sapienza University of Rome, Italy; Sibylle Hurschler Lichtsteiner, Languages and handwriting research group, University of Teacher Education, Lucerne, Switzerland; Melanie Nideröst, University of Teacher Education of Lucerne, Switzerland; Werner Wicki, Languages and handwriting research group, University of Teacher Education Lucerne, Switzerland.


Chair
Fani Lauermann, TU Dortmund University, Germany

Organisers
Fani Lauermann, TU Dortmund University, Germany; Hanna Jarvenoja, University of Oulu, Finland; Julia Morinaj, University of Bern, Switzerland; Martin Daumiller, University of Augsburg, Germany

Discussant
Hanna Jarvenoja, University of Oulu, Finland

Stuart A. Karabenick’s Legacy in the Field of Academic Help Seeking and Self-regulated Learning
Eleftheria Gonida, Aristotle University of Thessaloniki, Greece; Jean-Louis Berger, University of Fribourg, Switzerland; Katerina Schenke, Katalyst Methods, United States; Erik Ruzek, University of Virginia, United States

The Relevance of Relevance in Expectancy-Value Theory
Jeffrey Albredt, University of Michigan, United States; Jacquelynne S. Eccles, University of California-Irvine, United States

Stuart A. Karabenick: His Legacy in the Field of Teacher Motivation
Ruth Butler, Hebrew University of Jerusalem, Israel; Paul Richardson, Monash University, Australia; Helen Watt, The University of Sydney, Australia

Taking Teacher Responsibility into Account(ability)
Fani Lauermann, TU Dortmund University, Germany