

# ISLS Annual Meeting 2023

*Building Knowledge and Sustaining our Community*

Montreal, Canada, June 10-15

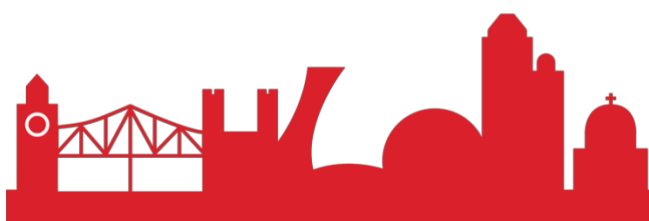
Workshops: June 10-11

Concordia University & Dawson College

3<sup>rd</sup> Annual Meeting  
of the  
International Society of the Learning Sciences (ISLS)

**- Proceedings -**

Edited by: James D. Slotta & Elizabeth S. Charles





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## Preface

We were honored to welcome everyone to the 2023 Annual Meeting of the International Society of the Learning Sciences (ISLS). This is the third year in which our society has hosted our two conferences together in a single annual meeting, with two separate but complementary programs: The International Conference of the Learning Sciences (ICLS) and Computer Supported Collaborative Learning (CSCL). This was the first year in which we were able to host this meeting in a physical gathering in-person, as we finally managed to emerge from the COVID-19 pandemic, and academic travel routines returned to normal. The meetings occurred in Montreal, Canada, on the campus of Concordia University, with more than 800 persons attending.

The General Proceedings comprise the cross-cutting, joint events of the new ISLS Annual Meeting: Keynotes, Invited Sessions, Pre-Conference Workshops & Tutorials, Mentoring Workshops (Doctoral Consortium, Early Career Workshop, Mid Career Workshop), and Interactive Tools & Demos. The organization of this Annual Meeting has been supported by several standing committees of ISLS, among which we would like to mention particularly the continuous support by the Communications Committee and the Membership Committee. We received a U.S. National Science Foundation (NSF) Grant sponsoring the Doctoral Consortium and Workshop related activities/events. Our society, ISLS, has made great efforts to support the participation of community members with specific economic exigencies. This involved substantial funds originating from the Wallace Foundation.

This year, we welcomed four Keynote presentations. The first was from Dr. Henri Giroux, titled, “Critical Pedagogy in the Age of Fascist Politics”, and was concerned with the commodification of knowledge and the need to reinforce the notion of the public intellectual. The second was given by Professor Susan Goldman from the University of Illinois at Chicago, titled “Research on Learning: Reflections on the Past and Speculations for the Future”, which reflected on Dr. Goldman’s professional history in a career that has intersected deeply with the ISLS throughout its history. Third, we heard from Professor Nikol Rummel, from Ruhr-University in Bochum, Germany, whose presentation was titled, “CSCL and Learning Analytics: The perfect marriage!...?” Finally, we heard from Professor Jan Hare, from the University of British Columbia, Canada, whose presentation was titled, “Decolonizing Online Learning Through Indigenous Ways of Knowing”, which focused on a particular model based in Indigenous ways of knowing, teaching and learning.

The theme of the ISLS Annual Meeting 2023 is “Building knowledge and sustaining our community”. Responding to our three-year series of remote, virtual conferences, this year we aimed to revisit the retreat experience of in-person programs. We recognize the value of in-person presentations, learning, networking, mentoring, seeking to revisit (or rediscover) this mode to remember what it is that we had lost. Our goal was to explore the recent unfolding educational and social climate and new roles and practices for technology and distributed communities that have been quick to evolve and become adopted. Despite the growing opportunities for digital and social media for knowledge building among teachers, researchers, and learners, it has been challenging to introduce new or expanded functions within our face to face or virtual exchanges, and we hoped to engage the community in sustained knowledge building and new forms of representing our knowledge to allow a fuller annual cycle. The ISLS is evolving rapidly, along with the rest of the world, and it is ever more critical that we maintain our own identity, reinforce our connections and build knowledge within and beyond our community. This annual meeting provides an opportunity for sharing our discoveries, reconnecting as an ISLS community.

Our annual meeting included two special sessions. In a year that witnessed the historic arrival of generative language processing models and AI image generators, the first special session was titled, “The New Generation of AI: Opportunities for Research and the Role of ISLS”, and was organized by the CSCL program committee. The second special session was organized by the Local Organizing Committee, who had facilitated a series of workshops during the preceding months called “the ISLS ChangeLab”. Academic research societies, like most communities of practice, are experiencing dramatic pressure to change as a result of evolutions that occurred during the pandemic period (e.g., to hybrid forms of meetings and knowledge dissemination). As the world emerges into a “new normal,” these workshops built on a model introduced by Jyri Engeström, to explore the various forms that could be adopted by academic societies for features like the annual meeting, workshops, or doctoral consortium. The past several years have witnessed a heightened awareness about issues of equity and



inclusiveness, and the traditional formats have been called out as being exclusive and inequitable. The cost of travel and impact of time away from home have been recognized as barriers for many. Moreover, the affordances of internet technologies for synchronous meetings and asynchronous knowledge building suggest opportunities for more dynamic and sustained forms of exchange. Still, many veteran scholars recognize the importance of traditional meeting formats, not only because of the richness of in-person meetings, but also because of the retreat element, where all participants are pulled together in a common event, away from their usual business. This allows for more sustained interactions, as well as unplanned or serendipitous encounters. A great debate is now taking place across many academic societies, as they wrestle with these tensions, and the ChangeLab was an attempt by this year's Local Organizing Committee to explore the various tensions within our ISLS community, with regard to the annual meeting, and to make some progress in articulating possible visions.

We introduced several innovative elements this year, with an interest in extending community interactions and knowledge building related to the annual meeting in the “long tails” before and after the actual conferences. For example, consortia and workshops were encouraged to meet online before the event, and coordinate their materials and activities, as well as to post summaries of all products in the ISLS.org website, in order to sustain their interactions after the meeting was complete. We expanded our support for separate fee schedules, building on the previous three years' online conferences – which resulted in dramatically lower fees for students and scholars from lower income countries. We offered support for visa applications, special housing arrangements, childcare, and support for those with visual impairments. This was also the first in-person annual meeting to offer support for online participants, who were able to access all conference programs and any materials posted in the online system (i.e., by session chairs) and watch all keynote presentations, the presidential session, and the two special sessions. Session chairs also had an expanded role, in helping solve any issues related to hybrid formats (i.e., for those who were unable to attend the conference because they were denied a visa). We supported such hybrid sessions with technology solutions, but mainly through the special attention of session chairs. Finally, by working with the Concordia University Office of Sustainability, who performed a sustainability audit for our annual meeting, we were ultimately able to achieve the Platinum Certificate, which is the highest level of sustainability certificate.

We wish to offer one final thanks to all those who volunteered so much time, organizing elements of this meeting, reviewing papers, and participating in the event itself. Together, we have produced an enriching, productive, and lively community event!

Conference Co-Organizers:  
James D. Slotta & Elizabeth S. Charles

## Acknowledgements

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- International Society of the Learning Sciences (ISLS)
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- Dawson College
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- The Erindale Academy
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# Table of Contents

## ISLS Proceedings

### Keynotes

Critical Pedagogy in the Age of Fascist Politics.....	3
<i>Henry A. Giroux</i>	
Research on Learning: Reflections on the Past and Speculations for the Future.....	4
<i>Susan Goldman</i>	
CSCL and Learning Analytics: The Perfect Marriage!...?.....	5
<i>Nikol Rummel</i>	
Decolonizing Online Learning Through Indigenous Ways of Knowing.....	6
<i>Jan Hare</i>	

### Special Sessions

Change Lab Methodology in the Service of ISLS Community Building.....	9
<i>Alain Breuleux, Elizabeth S. Charles, Thérèse Laferrriere, James D. Slotta</i>	
The New Generation of AI: Opportunities for Research and the Role of ISLS.....	10
<i>Crina Damsa, Carolyn Rosé, Brian Smith, Margarida Romero, Sahana Murthy, Wenli Chen, Marcelo Worsley</i>	

### Interactive Tools and Demos

iTalk–iSee: A Participatory Visual Learning Analytical Tool for Developing Productive Peer Talk.....	13
<i>Liru Hu, Jiajun Wu, Gaowei Chen</i>	
Life on the Edge: Supporting Students’ Learning of Cell Biology.....	17
<i>Isabelle Sperano, Liam Byrne, Ji Yae Bong, Ross Shaw, Robert Andruchow</i>	
Automatically Generated Practice for Textbooks.....	21
<i>Bill Jerome, Rachel Van Campenhout, Benny Johnson</i>	
Demonstrating Operation Outbreak, an Experiential Learning App-Based Pandemic Simulation for Middle and High School Students.....	23
<i>Andonag Grozdani, Yinan Dong, Hung Hong, Shannen Lin, Ben Kresge, Mansi Khandpekar, Kian Sani, Todd Brown, Pardis C. Sabeti, Andrés Colubri</i>	
Interactive Storybooks for Mathematical Learning: What Worked and What Did Not?.....	27
<i>Mahtob Aqazade, Laura Bofferding</i>	
SPEERLoom: Collaboratively Re-Crafting CS Education.....	31
<i>Samantha Speer, Joey Huang, Nickolina Yankova, Carolyn Rosé, Kylie Pepler, Melisa Orta Martinez</i>	
Augmenting Learning With Augmented Reality: Exploring the Affordances of AR in Supporting Mastery of Complex Psychomotor Tasks.....	35
<i>Dong Woo Yoo, Nicholas Wilson, Mohsen Moghaddam</i>	
Assessment of Computational Thinking in an Ill-Defined Problem-Solving Task With Modular Robots.....	39
<i>Margarida Romero</i>	
MITHOS-Mixed Reality Interactive Teacher Training System for Conflict Situations at School.....	43
<i>Chirag Bhuvaneshwara, Manuel Anglet, Bernhard Hilpert, Lara Chehayeb, Ann-Kristin Meyer, Daksitha Withanage Don, Dimitra Tsovaltzi, Patrick Gebhard, Antje Biermann, Sinah Auchtor, Nils Lauinger, Julia Knopf, Andreas Kaiser, Fabian Kersting, Gregor Mehlmann</i>	
Zine Machine: A Tinkering Kit Combining Math and Motion.....	47
<i>Khushbu Kshirsagar, Kristen Bethke Wendell</i>	

MAIDR: Multimodal Access and Interactive Data Representation System for Inclusive Data Science Education .....	51
<i>JooYoung Seo, Yilin Xia, Yu Jun Yam, Sean McCurry</i>	
A Technology-Enhanced Learning Environment Integrating Science, Computing, and Engineering for Upper-Elementary Grades .....	55
<i>Nicole M. Hutchins, Satabdi Basu, Arif Rachmatullah, Kevin McElhaney, Nonye Alozie, Naveeduddin Mohammed, Gautam Biswas</i>	
Traveling Bazaar: Portable Support for Face-to-Face Collaboration .....	59
<i>Rosanna Vitiello, Soham Dinesh Tiwari, R. Charles Murray, Carolyn Rosé</i>	
“Smart Greenhouse” Project: Combining Physical Computing With Plant Science .....	63
<i>Sheikh Ahmad Shah, Jaai Phatak, Avneet Hira, Helen Zhang, Mike Barnett</i>	
MultiMod: A Platform for Qualitative Analysis Of Multimodal Learning Analytics .....	66
<i>Chris Proctor, David Mawer</i>	
<b>Pre-Conference Workshops</b>	
Orchestrating Hybrid Learning Scenarios: Challenges and Opportunities .....	72
<i>Ishari Amarasinghe, Yannis Dimitriadis, Annelies Raes, Ulrich Hoppe, Davinia Hernández-Leo, Alejandra Martínez-Monés, Anouschka van Leeuwen, Alejandro Ortega-Arranz, Carlos Alario-Hoyos, Korah Wiley</i>	
K-12 Data Science Education: Outcomes of a National Workshop; International Perspectives; & Next Steps for the Learning Sciences .....	76
<i>Michelle Hoda Wilkerson, Dani Ben-Zvi, Tamara Clegg, Michal Dvir, Camillia Matuk, Susanne Podworny, Amy Stephens, Lucia Zapata-Cardona</i>	
Navigating the “In-Between”: Making a Place for Early Career Scholars to Share and Connect Across Borders .....	80
<i>Anna Keune, Naomi Thompson, Ryan Cain, Tolga Kargin, Areej Mawasi, Maggie Dahn</i>	
Engaging With Learning Experience Design .....	84
<i>Saul Carliner, Giuliana Cucinelli</i>	
Doing Quantitative Research in the Learning Sciences and CSCL: Current Developments and Applications ...	87
<i>Frank Fischer, Freydis Vogel, Daniel Bodemer, Olga Chernikova, Ulrike Cress, Bram De Wever, Julia Eberle, Heisawn Jeong, Ingo Kollar, Jim Pellegrino, Peter Reimann, Carolyn Rosé, Nikol Rummel, David Williamson Shaffer, Matthias Stadler, Jan-Willem Strijbos, Armin Weinberger, Jianwei Zhang</i>	
Techniques for Investigating Collaboration With Multimodal Approaches .....	91
<i>Daniel Spikol, Zach Swiecki, Xavier Ochoa, Olga Viberg, Yeyu Wang, Irene-Angelica Chounta, Alexander Nolte, Roberto Martinez-Maldonado, Jonna Malmberg, Kateryna Zabolotna</i>	
Maybe We Should Talk: Bringing Together Diverse Perspectives on Supporting Teachers’ Reflective Dialogue .....	95
<i>Sara van der Linden, Susan McKenney, Adam Lefstein, Gaowei Chen</i>	
Demystifying Text-to-Image Generation for K-12 Educators .....	98
<i>Safinah Ali, Prerna Ravi, Katherine Moore, Cynthia Breazeal, Hal Abelson</i>	
Anyone Can Analyze Quantitative Data (With a Little Help) .....	101
<i>Chris Teplovs, Nobuko Fujita</i>	
Cultivating Ensembles in Education and Research at ISLS .....	103
<i>Carolyn D. Sealfon, Nicholas Gross, Preeti Raman, Marisa Holzapfel, Sofya Borinskaya, Barbara J. Natalizio, Raquell M. Holmes</i>	
Emerging Approaches to Collaborative Education Research: Learning, Unlearning, and Relearning Through Critical Attention to Tensions .....	105
<i>Shulong Yan, Lindsey Kaiser, Leanne Ma, Indigo Esmonde, Arun Balajjee Lekshmi Narayanan, Erin Lane, Christopher Jaddah, Emily Southerton</i>	

## **Early Career Workshops**

Research Agenda: Critical Computational Literacies .....	111
<i>Chris Proctor</i>	
Co-Designing Learning Environments to Support Young Learners and Educators Critical Engagement in Science & Technology Education .....	113
<i>Areej Mawasi</i>	
Toward Artificial Intelligence Enabled Adaptive Learning Systems (ARIALES) Across Reality-Virtuality Continuum.....	115
<i>Ville Heilala</i>	
Designing Next-Generation Game-Based Learning Experiences .....	117
<i>Zhichun Liu</i>	
Transformative Knowledge Creation Practices in Open-Ended Collaborative Inquiry.....	119
<i>Simona Pesaresi</i>	
Usefulness and Perceived Ease of Use of Digital Technologies by Lecturers in Support of Teaching and Learning and Research in Universities .....	121
<i>Rexwhite T. Enakrire</i>	
Critical Investigations of Learning Within Culturally Situated Forms of Creativity.....	123
<i>Peter J. Woods</i>	
Uncertainty Awareness in Digital and Social Learning Environments .....	125
<i>Lenka Schnaubert</i>	
Video-Supported Teacher Reflection and Coaching.....	127
<i>Sara van der Linden</i>	
Weaving Together STEAM and the Spaces That Surround It .....	129
<i>Naomi Thompson</i>	
You Belong Here: Creating Epistemic Tools for Families and Marginalized Youth in Informal Learning Spaces .....	131
<i>Catherine Dornfeld Tissenbaum</i>	
Towards a Learning Sciences of Higher Ed: Engaging the Pedagogical Possibilities of Postsecondary Education .....	133
<i>Aireale J. Rodgers</i>	
Exploring the Effective Design of a Pre-Class and a Face-to-Face Class in a Flipped Classroom .....	135
<i>Sachika Shibukawa</i>	
Supporting Collaborative Creation From Knowledge Building Perspective .....	137
<i>Ayano Ohsaki</i>	
Developing Epistemic Understanding and Productive Dialogue Through a Video-Based Analytics-Supported Approach.....	139
<i>Yuyao Tong, Gaowei Chen</i>	
Remaking Makerspaces: A Shift in the Design of Makerspaces Through a 4E Cognition Perspective.....	141
<i>Aditi Kothiyal</i>	
<b>Doctoral Consortium</b>	
Measuring and Fostering Peer Collaboration in Higher Education .....	145
<i>Verena Schürmann</i>	
Psychological Infrastructuring for Knowledge Building: Four Studies on Theory and Practice .....	147
<i>Shiri Kashi</i>	
Interspecies Creativity: Designs for Making and Learning With the Living World.....	149
<i>Isabel Correa</i>	



Prior Knowledge Activation in Problem Solving Prior to Instruction: How Does the Breadth of Activation Affect Learning? .....	151
<i>Charleen Brand</i>	
How Does One Know on Social Media? Investigating Epistemic Engagement and Emotions During Online Information Evaluation .....	153
<i>Christiana Varda</i>	
Enhancing Dialogic Teaching in English as a Second Language Classrooms Through Video-Based Professional Development .....	155
<i>Pengjin Wang, Gaowei Chen</i>	
Examining Critical Factors in Parent-Child Math Engagement .....	157
<i>Anastasia L. Betts</i>	
Diagnosing Young Children’s Computational Thinking .....	159
<i>Chungsoo Na</i>	
Balance Board Math: Integrating Movement-For-Regulation and Movement-for-Learning for Inclusive Math Instruction .....	161
<i>Sofia Tancredi</i>	
Designing Playful Learning Environments for Teaching Difficult Social Concepts .....	163
<i>Caleb Probst</i>	
From Knowledge Sharing to Higher-Order Learning: Knowledge Synthesis in Collaborative Discourse .....	165
<i>Xinran Zhu</i>	
Leveraging Participatory Design in Teachers’ Learning: Expansive Learning and Transformative Agency in a Professional Community .....	167
<i>Yeliz Günel Aggöl</i>	
Intersectional Artist Identities: Sociocultural Contexts That Support Culturally Engaged Arts Learning Journeys .....	169
<i>Lora Cawelti</i>	
<b>Indexes</b>	
Author Index .....	A1-A2

## Orchestrating Hybrid Learning Scenarios: Challenges and Opportunities

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**Abstract:** The goal of this workshop is twofold: bringing together and comparing theoretical perspectives on the notion of orchestration load in the context of hybrid teaching and learning scenarios, and bringing together different approaches of teacher support tools to lower the teachers' orchestration load. The workshop consists of several types of activities aimed at sharing and synthesizing participants' perspectives on and experiences with researching orchestration load.

### Organizing team

Yannis Dimitriadis is full professor, Alejandra Martínez-Monés is associate professor, Alejandro Ortega-Arranz is assistant professor at the Universidad de Valladolid, Spain. Davinia Hernández-Leo is full professor and Ishari Amarasinghe is a postdoctoral researcher at Universitat Pompeu Fabra, Spain. Anouschka van Leeuwen is assistant professor at Utrecht University, the Netherlands. Ulrich Hoppe is retired professor of computer science at University of Duisburg-Essen and senior researcher at the RIAS institute, Duisburg (Germany). Annelies Raes is assistant professor at KU Leuven, Belgium. Carlos Alario-Hoyos is associate professor at the Universidad Carlos III de Madrid. Korah Wiley is researcher at Digital Promise, USA.

The team's shared interests are collaborative learning, educational technology, teacher decision making and teacher orchestration. Examples of workshops in which one or more members of the organizing team were involved are "Social Network Analysis" (CSCL2017), "Collaboration Analytics" (CSCL 2019), "Open Science in Technology-Enhanced Learning" (EC-TEL 2018), the series of LASI Spain workshops (<https://snola.es>), "International Workshop on Human-Centred Learning Analytics" (EC-TEL 2021), "CROSSMMLA & SLE Workshop: Learning Analytics for Smart Learning Environments Crossing Physical and Virtual Learning Spaces" (LAK 22). The team has also organized a related workshop at ISLS Annual Meeting 2021 "Teacher Orchestration Load: What Is It and How Can We Lower The Burden?" Team members' recent and previous joint research projects include H2O Learn project (<https://www.upf.edu/web/h2olearn>) and SmartLET project (<https://smartlet.gsic.uva.es>) aimed on the transition to new modes of Hybrid Learning and enhancing design & orchestration in scalable, IoT-enriched, & ubiquitous smart learning environments with a human-centered perspective.

### Intended audience

The workshop's main theme focuses on the challenges and opportunities of orchestrating hybrid learning scenarios, a timely topic that is both theoretically and practically intriguing to scholars and practitioners; for that reason we welcome both for the workshop.

### Duration and format of the event

A half-day workshop is proposed and the workshop will be conducted as a hybrid synchronous event, therefore facilitating both co-located and remote participants to attend the event.

### Description of the event

#### Theme and goals

The concept of “classroom orchestration” refers to a number of processes teachers engage in during everyday teaching and learning situations. For instance, such processes may involve scripting, making learning design decisions, enacting those designs with students, re-designing and debriefing actions (Dillenbourg, 2015; Tchounikine, 2013). A closely related notion is the “orchestration load” which is the attentive effort teachers encounter when regulating multiple learning activities and processes (Amarasinghe et al., 2022). In our previous workshop held during ISLS 2021 (Amarasinghe et al., 2022), we explored aspects related to orchestration load and teacher support tools. However, the ways teaching and learning are conducted and the spaces in which learning occurs have changed recently primarily due to the constraints imposed by Covid-19. In particular, during the pandemic, hybrid learning scenarios were reinforced in order to ensure the continuity of learning. The scope of “hybrid learning” can be understood and defined either narrowly or more broadly by referring to different dimensions of the learning situations (Gil et al., 2022; Delgado Kloos et al., 2022). Within the proposed workshop we will welcome participants with different perspectives about hybrid learning, to encourage sharing of experiences and the discussion of multiple definitions of the concept.

The workshop consists of three parts and aims to achieve two goals. **The first goal is to bring together different perspectives on orchestration and orchestration load in hybrid learning scenarios.** Building on our previous workshop findings, in the upcoming workshop we are particularly interested in understanding how the new dimension of hybridity influences teachers’ orchestration actions and orchestration load. To achieve this, the first two parts of the workshop will focus on the following aspects:

- Orchestration-related issues in hybrid learning and teaching settings
- Theoretical perspectives and ways of measuring orchestration load

The findings of our previous workshop also outlined that teachers’ orchestration actions (e.g., planning, scripting, enactment, reflection and revision) influence orchestration load and that teacher-supporting tools may be designed to support these tasks. However, at present, it is difficult to postulate that the teacher-supporting tools designed to be used mostly in conventional classroom settings can be used in the same manner when deploying hybrid scenarios, given the many differences between the learning contexts. **The second goal of the workshop aims to explore in detail whether existing tools facilitate teachers in carrying out orchestration actions in hybrid learning situations or eventually new tools need to be designed.** Therefore part 3 of the workshop will focus on the following aspects:

- Tool(s) suites for planning, enacting, reflecting and revising hybrid educational scenarios
- Decision and design support for hybrid educational environments (before, during, and after run-time, including decisions regarding the set design (e.g., which tools?), epistemic design (e.g., which task and which scaffolding?) and social design (e.g., which group composition?) based on the ACAD framework (Goodyear et al., 2021)

## Theoretical background and relevance to field and conference

The concept of hybrid learning can be understood by referring to different dimensions of a learning situation. For instance, considering the learning spaces hybrid learning scenarios involve merging “on-site and remote students at the same time synchronously” (Raes, 2020, 2022). A wider conceptualization of hybrid learning is also possible considering other dichotomies such as face-to-face versus online education, individual versus collaborative active learning methodologies, and so on (Gil et al., 2022; Delgado Kloos et al., 2022).

Even in the post-COVID era at present, this new dimension of hybridity is viewed as both essential and flexible as it is common for students to attend synchronous learning situations that merge on-site and remote participants. Despite the flexibility hybrid learning entails for the students, it may increase teachers’ workload. Existing literature has already provided evidence that rapid capturing and real-time processing of classroom information to facilitate the regulation or the orchestration of learning activities is challenging (van Leeuwen & Rummel, 2020). On the one hand, teacher-supporting tools can be designed and deployed to lessen the burden on the side of the teachers. On the other hand, the hybridity of the learning scenarios may demand teachers to further divide their attention to consider learning activities that occur in multiple spaces, e.g., co-located and remote. Yet, little is known about how such learning situations influence teachers’ orchestration actions and orchestration load, which is a gap in the existing literature that requires further research from both conceptual and pragmatic stances considering the design of the learning situations (e.g., co-located, remote or hybrid) which aligns with the scope of the ISLS Annual meeting.

## Outline of planned activities

The workshop will be planned as a highly interactive event with multiple activities, to be held before, during and after the synchronous event as shown below:



- A short introductory presentation by the workshop co-organizers, workshop goals, activities and introduction of participants (15 minutes)
- Workshop activity part 1 - Lightning talks (20 minutes) based on asynchronous previous preparation
- Workshop activity part 2 - Interactive Panels (45 minutes)
- Short break (10 minutes)
- Workshop activity part 3 - Collaborative activity focusing on teacher support tools (45 minutes) based on asynchronous previous preparation
- Synthesis, plans for dissemination (45 minutes)

### Part 1. Lightning talks

- Preparatory activity: Pre-registration via a survey is required.
- Activity during the workshop: Participants with prior experience in orchestrating hybrid learning scenarios can present their experiences in the format of a short lightning talk.
- Expected outcomes: Sharing practical experiences on how different teaching modalities (in-class, remote, hybrid) influence teachers' orchestration actions and orchestration load and to reflect on challenges/ opportunities associated when regulating such learning activities.

### Part 2. Interactive panels

- Preparatory activity: Ask participants to take a look at the relevant materials shared by the workshop organizers to acquire relevant background knowledge.
- Activity during the workshop: Interactive Panels are focused on three topics: 1) What is orchestration load / what theoretical perspectives are there on orchestration load?, 2) How do different teaching modalities (in-class, remote, hybrid) influence teachers' orchestration actions and orchestration load?, 3) How can we measure orchestration load in different teaching and learning situations? Several interactive breakout rooms will be set up to discuss the three topics in three rounds. Participants can assign themselves to different topics across different rounds.
- Expected outcomes: Overview of the theoretical perspectives on orchestration, orchestration load and its measurements also considering hybrid teaching and learning scenarios.

### Part 3. Focusing on teacher support tools: Design and decision support for hybrid learning scenarios

- Preparatory activity: Ask participants to respond to a survey indicating software tool(s) that facilitated them to orchestrate hybrid learning situations.
- Activity during the workshop: Participants will collaborate on a shared whiteboard to separate characteristics of orchestration tools that were extremely helpful from less useful in face-to-face, hybrid, and distant learning scenarios.
- Expected outcomes: Overview of the very useful and less useful features of existing teacher supporting tools that enable the successful deployment of hybrid learning scenarios, practical challenges and implications for orchestration and orchestration load.

### **Expected outcomes and contributions**

We expect the workshop will aid the community to broaden their understanding on how hybrid learning scenarios influence teachers' orchestration actions and orchestration load, ways of measuring orchestration load and illustrate ways of reducing this load with different approaches. The outcomes of the workshop will be published as a report.

### **Participation requirements**

Participants need to register to the workshop by completing a survey (more details are available on our website: <https://orchestrationloadworkshop.wordpress.com>).

### **Relationship to similar events conducted in the past (e.g., at CSCL or ICLS)**

Orchestration has been a relevant topic at ISLS events in the past, such as the workshops on "Teacher Orchestration Load: What Is It and How Can We Lower The Burden?" at ISLS 2021, "The Orchestrated Collaborative Classroom" at CSCL 2015, or "Classroom Orchestration: Moving Beyond Current Understanding of the Field" at ISLS 2012, focusing on the designing and making sense of heterogeneous ecologies in a classroom

or the definition of the field, respectively. The proposed workshop may facilitate broadening our understanding of challenges and opportunities related to the orchestration of hybrid learning scenarios.

### Facilities and equipment required

We will make use of the official conference's communication platform for hosting the workshop and other tools, for instance Miro (<https://miro.com/login/>) to create a shared whiteboard for in-workshop activities and Engageli (<https://www.engageli.com>) to facilitate discussion and group work.

### Minimal and maximal number of participants expected

We aim for between 15 and 25 individuals. Researchers and practitioners will be contacted as part of the workshop's planning. We anticipate that the relevance of the workshop topic, highly interactive workshop activities and the workshop artifacts will contribute to drawing attention to the event.

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