ICLS PRE-CONFERENCE WORKSHOPS

http://www.isls.org/icls2012/program/

Full Day Monday July 2nd – cost $100

Workshop name and proposer	ID	Time and date
Learning Technology by Collaborative Design and Critical Reflection - workshop lead Vilma Galstaun	1	Full day Monday July 2
Analysing Collaborative learning at multiple levels - workshop lead Gerry Stahl	2	Full day Monday July 2
What Is "Engagement" in Math and Science Learning? - workshop lead Nikki Shechtman	3	Full day Monday July 2
Digital Ecosystems for Collaborative Learning: Embedding Personal and Collaborative Devices to Support Classrooms of the Future (DECL). - workshop lead Roberto Martinez (to be held in the ICT building)	11	Full day Monday July 2

Half day, Monday July 2nd – cost $50

Tightening research-practice connections: applying insights and strategies during design charrettes - workshop lead Susan McKenney	8	Half day - morning Monday July 2
Inducing learners' creativeness and encouraging learning across disciplines (multi-disciplinarity) - workshop lead Moseli Alexander Mafa	4	Half day – afternoon Monday July 2

Half day, Tuesday July 3rd (morning only) - cost $50

Bifocal Modeling: combining virtual and physical experiments using low-cost sensors and open-source computer modeling - workshop lead Paulo Blikstein	7	Half day - morning Tuesday July 3
Developing a Competitive Educational Research Proposal for NSF's Division of Research on Learning - workshop lead Sandra Toro Martell (LT)	9	Half day - morning Tuesday July 3
Re-thinking Roles in Future Learning: Teachers as Curriculum Media Designers and Students as Teacher Collaborators - workshop lead Eric Hamilton	10	Half day - morning Tuesday July 3
Teachers as Designers of Technology Enhanced Learning Materials - workshop lead Yael Kali	6	Half day - morning Tuesday July 3
Classroom Orchestration: Moving Beyond Current Understanding of the Field - workshop lead Yannis Dimitriadis	5	Half day - morning Tuesday July 3

To attend a workshop, you must also register to attend the main conference. Workshop registration and payment takes place through the conference system at http://www.isls.org/icls2012/submit/ at the time of registration. Please ensure you do not register for clashing workshops.

Workshops may involve further pre-conference participation, please see the individual description for details.

Workshop registrations close May 1, unless otherwise indicated. Confirmation of the workshop proceeding and/or acceptance of application to participate will be sent out to registrants in mid-May. If participants are not accepted, or a workshop will not run, the workshop fee will be refunded to the same card used for payment.

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1. Learning Technology by Collaborative Design and Critical Reflection

- Vilma Galstaun, Faculty of Education and Social Work, University of Sydney, Sydney, Australia, vilma.galstaun@sydney.edu.au
- Shannon Kennedy-Clark, Department of Teaching and Learning, Australian Catholic University, Sydney, Australia, shannon.kennedy-clark@acu.edu.au
- Kate Anderson, Faculty of Education and Social Work, University of Sydney, Sydney, Australia, k.anderson@sydney.edu.au
- Martin Parisio, Centre for Research on Computer-Supported Learning and Cognition, Faculty of Education and Social Work, University of Sydney, Sydney, Australia, martin.parisio@sydney.edu.au
- Wai Yat Wong, Faculty of Education and Social Work, University of Sydney, Sydney, Australia, wai.yat.wong@sydney.edu.au
- Heman Chan, Faculty of Education and Social Work, University of Sydney, Sydney, Australia, heman.chan@sydney.edu.au

This is a practical workshop where attendees will participate in a learn-by-collaborative-design task. Participants will work in small groups to design and develop a digital story learning/teaching resource. A collaborative approach in both the design of the tasks using information and communication technologies (ICT) and providing critical feedback through a peer-review process is used. In practice, design-based learning activities are usually collaborative. Participants will develop a deeper understanding of how to design collaborative technology enhanced learning activities for students through the experiences of both dialogue and reflection.

Two technologies will be used in this workshop. Firstly, iMovie will be used to develop a digital story. Participants will then evaluate their peers' digital stories using the collaborative annotation tool, EVA (Educational Video with collaborative Annotation). As part of the design and development of the digital story, EVA will be used for collaborative peer reviewing in the evaluation phase of the workshop.

The focus of the workshop is not the development of technical skills; rather it is the process of using video annotation software to provide critical and collaborative peer feedback and for participants to critically reflect on the feedback given so as to make improvements to their digital story. This workshop is designed to adapt to the needs of the participants in developing technical and theoretical experiences of the learn-technology-by-design approach.

The target audience is conference participants who have an interest in learning how to use design tasks using ICT and collaborative tools such as EVA (or similar annotation and analysis technologies) for peer collaboration, critical peer feedback and self-reflection. The target audience are both practitioners and

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educational researchers. Participants working in teacher education will find particular value in attending this workshop as it will also draw on the experiences in teacher education over the past several years.

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2. Analyzing collaborative learning at multiple levels

- Gerry Stahl, Drexel University, USA
- Keith Sawyer, Washington University in St. Louis, USA
- Heisawn Jeong, Hallym University, South Korea
- Dan Suthers, University of Hawaii, USA

How might learning that takes place at individual, small group and collective (community or networked) levels connect to each other? This workshop will consist of two data sessions exploring connections across levels. Data presenters will describe the background of the data and data analysts will present results of preliminary analyses. Workshop participants will then collaboratively explore data excerpts and discuss how different levels of analyses and associated theories might connect to each other.

Prior to the workshop, the workshop organizers will select two appropriate datasets, and will prepare excerpts from the datasets for distribution to workshop participants. The organizers will also select a number of participants to prepare data analyses in advance, in order to seed the workshop discussion and orient it toward multiple levels of analysis.

The workshop will consist primarily of two data session, during which participants will break into small groups and discuss how the dataset and accompanying analyses address the theoretical and methodological issues of the workshop. The groups will report back with their conclusions.

In addition to registration, further application/information is necessary from participants wishing to attend the workshop.

Researchers interested in participating in the workshop should submit a brief application (one or two pages) that summarizes their relevant prior experience, objectives in participating in this workshop, and a short bibliography of relevant publications or a URL providing further information on the researcher's work. (Researchers wishing to present data illustrating connecting levels at the workshop are encouraged to contact the organizers.)

Participants should send their applications to Gerry Stahl at Gerry.Stahl@drexel.edu and Heisawn Jeong at heisawnj@gmail.com by February 21, 2012, for priority consideration. Acceptance decisions will be sent out by March 15, 2012. (Data presenters will be expected to provide data to analysts by April 15, 2012.)

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3. What Is "Engagement" in Math and Science Learning?

An Evidence-Centered Design Workshop to Develop Working Definitions and Measurement Approaches

Workshop Organisers

Nicole Shechtman, SRI International : nicole.shechtman@sri.com (lead)
K. Ann Renninger, Swarthmore College
Judith Harackiewicz, University of Wisconsin, Madison
Britte Cheng, SRI International
Geneva Haertel, SRI International

Rationale

While it is clear that "engagement" is critical to learning math and science, there is a pervasive need in the field to operationalize the core constructs of engagement and develop useful measurement approaches. For example, engagement has behavioural, affective, and cognitive components that interact in the process of learning. Our multidisciplinary approach brings together learning scientists with deep expertise in engagement and assessment specialists from the tradition of Evidence-Centered Design (ECD)—a research-based methodology for designing rigorous measurement instruments.

Content

Participants will engage in a series of collaborative group activities designed to explore the multiple facets of engagement, existing measures, potential working definitions, and the design space for instrumentation. Exercises will be based on ECD methods that result in shared understandings of the important underlying dimensions and "design patterns" that provide structured narratives specifying measurement design requirements.

Outcomes

1. To provide an opportunity to think critically as a community about the current operationalizations and measurement approaches for engagement, and examine implications for participants' own research.
2. To gather and share a set of instruments and approaches to measuring engagement.
3. To develop design documents that can be used for further instrument development.
4. To build a network of learning scientists and assessment specialists interested in studying engagement.

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Targeted Audience

We invite participants of any level of expertise in research on engagement, participants from the full spectrum of theoretical and methodological orientations, and those who focus on math and/or science content targeting students at any age level.

Other Important Information

We will shape the activities based on the expertise and interests of the attendees*. As preparation, participants will be asked to provide a short bio, respond to a pre-workshop survey about their background, and identify instruments and methodological approaches.*

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4. Inducing Learners' Creativeness and Encouraging Learning Across Disciplines

- Moseli Mafa, Lesotho College of Education, moseli3712@gmail.com
- Mamotena Jankie, Lesotho College of Education, mamjankie@yahoo.co.uk
- Palesa Khotso, Lesotho college of Education, palesakhotso@yahoo.com
- Makomosela Qhobela, National University of Lesotho, m.qhobela@nul.ls

Workshop Description

This workshop seeks to expose some innovative teaching/learning practices and methods that enhance learners' creativity and/or learning across disciplines. It is meant for presentation, discussion and reconstruction of these research findings, hence inform educators in teaching/learning for creativity and *trans-disciplinarity*. It is also aimed at informing researchers' inquiry strategies on creativity and trans-disciplinary ways of knowing.

Background

The world is presently confronted with such challenges as rapid climatic whether changes, disease pandemics, and other socio-economic problems. In response , versatile, creative and adaptive citizens are needed. Consequently, this workshop argues for educators and researchers to seek and develop learning modalities for boosting learners' creativity and knowing across disciplines. Thus, the central themes for constructing and developing these modes of learning are: *Creativity*, *Trans-disciplinarity* and *Transformative Learning*. These are based on the notion of transforming present ways of knowing into unrestricted acquisition of skills for creativeness.

Format and Schedule of Activities

The workshop shall run over three sessions, in the afternoon of Monday, 2nd July 2012.

- **Session one** - Organizer and/or instructors shall provide the purpose and theoretical framework.
- **Session two**- Participants form break-up groups; to present , analyse, discuss and reconstruct learning model(s).
- **Session three**- ***All group*** discussion for further inputs and improvements on the Model(s) and their research implications.

Audience and Participation Requirements

In addition to registration, further application/information is necessary from participants wishing to attend the workshop.

Interested researchers and educators should submit statement(s) (500-600 words) of intent to either present their work, discuss or make any inputs regarding the workshop objectives. These will be checked

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by three workshop organisers. Submissions should reach organizers at the emails above, through e-mail attachments, by 3rd April, 2012; and notification for acceptance shall be made by April 10th, 2012.

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5. Classroom Orchestration: Moving Beyond Current Understanding of the Field

Workshop organizers

a. Yannis Dimitriadis, University of Valladolid, Spain (contact person)
b. Pierre Dillenbourg, EPFL, Lausanne, Switzerland
c. Miguel Nussbaum, Pontificia Universidad Católica de Chile, Chile
d. Chee-Kit Looi, Nanyang Technological University, Singapore
e. Jeremy Roschelle, Stanford Research Institute International, USA

1. Rationale:

Sustainability of innovative teaching and learning practices highly depends on effective scenarios in the complex classroom ecosystem, integrating multiple activities and tools at multiple social planes and contexts. Such multiplicity demands a holistic perspective implementing a flexible **"orchestration layer"** through either technological or conceptual tools. One main question that arises is not only how do we change the curriculum and classical assessments to reach these goals but also how do we organize the classroom, the available resources and the teachers role to achieve this transformation.

Orchestration has emerged recently as a driving concept and metaphor. The complexity of the related issues has motivated a vivid debate in the community, which took the shape of multiple papers and reports that employ and explore the concept of orchestration, as well as a highly successful workshop at CSCL 2011.

Some converging issues that emerged in this **debate** deal with the characteristics and graphical representations of integrated pedagogical scenarios, as well as the need to empower teachers in the real-time management of such scenarios, so that they can flexibly enact designs and technologies (either ICT-based or not) in a minimalist way, taking into account the practicalities and time-space constraints of classrooms. On the other hand, several issues are still **subject of discussion**, as e.g. the power and limitations of the underlying metaphor, the design of adequate orchestration and orchestrable technologies, the right balance between planning and enactment, external and internal scripts, or the ways to advance towards a better usability at the classroom level.

2. Content:

The workshop builds on the considerable recent advances on classroom orchestration in the community and aims to deepen the discussion and analysis of the divergent and convergent aspects, expecting to shed light on the concept, issues and eventual approaches towards effective integration of pedagogical scenarios in current and future classroom ecosystems. On the other hand, it aims to provide a common ground with other related fields, such as Learning Design, Pedagogical Patterns or Human Computer Interaction.

The half-day workshop, besides a short overview of the field, will be based on case studies submitted by the participants. Senior researchers, including those from the organizing committee, will analyze the case studies from the point of view of the prevailing issues in orchestration. Finally, all workshop participants will reshape and reformulate the landscape of classroom orchestration, and eventually lead to a new collective publication on the challenges of the field.

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3. Outcomes

a. Critical analysis and collective synthesis regarding case studies described in the accepted papers from the orchestration point of view
b. Production of a new concept map related to the main issues on orchestration
c. Generation of a synthesis paper based on the workshop proceedings after the workshop
d. Eventual joint publication of the papers presented in the workshop and an overview of the current trends on orchestration in an international journal or book, to be defined

4. Targeted audience:

a. Senior researchers who have been involved in the recent debate on the role and scope of classroom orchestration
b. Young researchers or practitioners who can provide challenging case studies that may illustrate integrated learning scenarios and the associated orchestration issues
c. Researchers from the related fields of Learning Design and Pedagogical Patterns, as well as Human Computer Interaction

5. Other important information for potential attendees

Paper submission process:

All accepted papers will be published at the on-line (and eventually) paper-based workshop proceedings and provided as a material to participants. However, only up to five (5) papers will be accepted for oral presentation at the workshop.

Accepted papers will be considered for publication at a journal special issue and/or an edited book on Classroom Orchestration. Specific instructions will be provided at and after the workshop.

The schedule for paper submission and acceptance is the following:

- Publication of the official call for papers: March 1
- Paper submission: April 30
- Acceptance notification: May 14
- Registration at the workshop closes: June 1
- Workshop: July 3 (09:00-12:30)

For more updated information visit: **Workshop website**
https://sites.google.com/site/iclsorchestration2012/

6. Workshop organisers' contact details:

Any interested persons may contact the Workshops organizers by e-mail at:
orchestration2012@gmail.com

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6. Teachers as Designers of Technology-Enhanced Learning Materials

Research on factors affecting curriculum implementation has pointed to the importance of involving teachers, to varying degrees, in shaping the learning scenarios in their own classrooms. While the benefits of Teachers as Designers (TaD) are acknowledged in literature, far less is known about ways of shaping that involvement to yield those benefits. Research is needed to understand how teachers learn through design, how such activities may be supported, and how teacher involvement in design partnerships with researchers impacts the quality of the artefacts created, their implementation, and ultimately, student learning.

This workshop speaks to that need by bringing together researchers and practitioners interested in further exploring various TaD aspects. Participants will share existing TaD research and practice, discuss areas needing additional research, and actively engage in synthesis activities. With the ultimate aim of improving the quality and relevance of research related to this theme, this workshop will help generate a conceptual foundation for understanding the notion of TaD, to be shared among a broader community, possibly via a special issue of a scientific journal.

In addition to registration, further participation is necessary from participants wishing to attend the workshop.

Participation is open to: (a) contributors who will respond to a call for proposals and participate in pre, and post workshop activities aimed at publication in a special issue, and (b) commentators who will provide critique, infuse the discussion with their knowledge and experience, and assist in creating a lively and fruitful conversation, without further commitment.

Pre-workshop activities (for contributors)

February 15:	Call for short paper proposals (2000-3000 word) will be published
April 1:	Submission deadline
April 22:	Notifications (12 papers to be selected and invited for inclusion)
June 26:	3 slides to be sent to organizers

Post-workshop activities

Plans will be made during workshop to decide on next steps towards publication in special issue.

Website

https://sites.google.com/site/teachersasteldesigners

Organisers' contact information

Yael Kali, yael.kali@gmail.com
Susan McKenney, susan.mckenney@utwente.nl

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7. Bifocal Modeling

Combining virtual and physical experiments using low-cost sensors and open-source computer modeling

- Paulo Blikstein - Stanford University, School of Education
- Tamar Fuhrmann - Stanford University, School of Education
- Daniel Greene - Stanford University, School of Education
- Shima Salehi - Stanford University, School of Education
- Claire Rosenbaum - Stanford University, School of Education
- Marcelo Worsley - Stanford University, School of Education

Bifocal Modeling (BM) is a framework for STEM learning that enables the exploration of the connection between computational models and the physical world, in real time - http://tltl.stanford.edu/projects/bifocal-modeling

BM provides opportunities for students to design a virtual model and physical experiment about a scientific phenomenon and connect them in a real time to validate or control the model, refining their theories about the underlying phenomena. The real-time connection between real and physical models is beneficial in various ways such as allowing students to develop crucial STEM skills such as meta-modeling, identifying and quantifying relevant parameters and variables, understanding error, precision, and time/scale discrepancies between real and ideal systems. In addition, one important aspect of thsi work is the development of low-cost, easily deployable sensor-based platforms.

In this workshop, we will introduce the Bifocal Modeling approach to participants, examine its benefits and challenges, and identify key themes for participants to develop their own BM activities. However, since there is a lot of interest in real-world sensing and modeling in the STEM community, we will also demonstrate and promote hands-on exploration of many of the low-cost sensing and modeling technologies that we have been developing at the TLT Lab at Stanford, which would be useful both for Bifocal Modeling but also for more general sensing and probeware activities. Therefore, participants will be exposed to the cutting-edge of low-cost sensing with wide applicability not only got BM but in many fields of hands-on science learning, environmental sensing, and project-based STEM learning in general.

We invite anyone interested in using sensors and computer modeling activities for STEM learning, including educators and researchers working in STEM education, educational technologists, and project-based learning experts. Prior experience with probeware or programming is helpful but *not* necessary.

In addition to registration, further participation is necessary from participants wishing to attend the workshop.

If you would like to participate in this workshop, please fill the form using the link below. If you want more information, please visit our website (http://tltl.stanford.edu) or email us at

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tltlaboratory@gmail.com. Applications will be reviewed by the workshop organizers, and the maximum number of participants is 20.

All accepted attendees will receive one sensing and robotics kit for them to keep and use in their projects, included in the registration fee.

Deadline for submission: April 1st 2012.

Application form: http://bit.ly/xlEWN1

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8. Tightening research-practice connections

Applying insights and strategies during design charettes

Educational research has long been criticized for its weak link with practice. Explicit attempts to close the research-practice gap have been underway for over four decades. A robust, growing body of knowledge now exists to describe: how policymakers and educators access, value and use research; various modes through which knowledge is generated and shared; and what aspects of evidence-based practice and research utilization in other fields can be applied to education. However, both scholarly insights and effective practices have yet to become widely spread.

The proposed workshop addresses this problem, and aims to:

(a) sensitize participants to different modes of research-practice interaction, and their implications for the production and use of new knowledge;

(b) inform participants about existing strategies to stimulate fruitful and mutually-beneficial research-practice connections during knowledge production and/or dissemination for use; and

(c) support participants in designing their own research-practice connections.

This workshop is intended for researchers and practitioners interested in understanding and working to narrow the research-practice gap. It is especially relevant to those researchers currently grappling with how to render their scientific insights accessible and usable by non-researchers.

The workshop is divided into two main stages. The first stage features multiple short presentations and is intended to sensitize and inform participants by sharing insights and strategies from existing projects that stimulate fruitful research-practice connections during knowledge production and/or use. During the second stage of the workshop, participants will be facilitated in considering and designing specific strategies for tightening research-practice connections that can be put into action in the short to medium term. Participants may choose to develop action plans related to individual projects, or to a broader (sub-)set of ISLS work.

Workshop facilitator contact:
Susan.McKenney@ou.nl
Kim.Gomez@ucla.edu
Reiser@northwestern.edu

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9 Developing a Competitive Educational Research Proposal for NSF's Division of Research on Learning

Sandra Toro Martell, Janet Kolodner, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA, 22230

smartell@nsf.gov , jkolodne@nsf.gov

Abstract: This half-day workshop on the morning of Tuesday, July 3rd, will help researchers interested in submitting proposals to the NSF Division of Research on Learning (DRL) by building capacity among learning sciences researchers to write competitive and high quality proposals that are likely to be successful.

The workshop is comprised of multiple short sessions and provides multiple opportunities for discussion and questions, including ample time for interaction with NSF program officers. The content of the workshops includes: 1) the contexts of STEM educational research in DRL; 2) characteristics of and significant changes in DRL's major programs, including Research on Education and Learning or REAL (formerly REESE), Advancing Informal Science Learning or AISL (formerly ISE); and Faculty Early Career Development (CAREER); 3) NSF's proposal review process and merit review criteria; 4) characteristics of competitive proposals; and 5) common weaknesses in poorly-rated proposals.

In addition to registration, further application/information is necessary from participants wishing to attend the workshop.

Novice and experienced proposers are equally welcome. All workshop participants will better understand: DRL's major research programs and priorities; the NSF review process; Program Officers' experience of what makes a good proposal; Program Officers' observations of common weaknesses in proposals; and the mechanics of proposal preparation. Researchers must apply for participation by submitting a document that includes: a letter of interest, a description of prior proposal-writing experience, a short summary of workshop expectations (maximum of 250 words); a research idea for discussion during small-group breakout sessions; and a brief CV (2 pages).

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10. Re-thinking Roles in Future Learning:

Teachers as Curriculum Media Designers and Students as Teacher Collaborators

- Eric Hamilton Pepperdine University
- Wendy Chaves Los Angeles Unified School District
- Gina Chaves Los Angeles Unified School District
- Israel Ramirez Los Angeles Unified School District

This workshop explores intergenerational collaboration around teaching and learning, especially by which students collaborate with teachers in creating digital media that can scaffold peer learning. The primary but not exclusive area of research is mathematics. The work that will seed this discussion, shared by both teachers and researchers, focuses on means by which creativity around cognition and content (how can digital media be imaginatively used to enhance content learning) can result in routinely immersive or engrossing flow experiences in learning, visualizing, or otherwise representing scientific or mathematical ideas or behavior. The intended audience are those exploring issues related to immersion, flow, creativity, and intergenerational collaboration. The session will seek vigorous theoretical and empirical contributions from attendees.

Over two years of observation as teachers functioning in more creative roles suggest deeper immersion in content, more reflective activity in unpacking student misconceptions, and greater coherence, imagination and subtlety in presentation. Similarly powerful dynamics have been observed as students collaborate with teachers in digital media making. As students collaborate with teachers in content-based media making, interesting intergenerational dynamics consistently emerge. Students see themselves differently--as capable of handling teaching responsibilities. They see subject matter nuances differently, as subtleties not only to understand but to clarify to others through digital expression. They see the teacher differently. Student-tutors, like their teachers, formulate unanticipated and inventive moves. The intergenerational dynamics have proven deeply motivating.

The research described above as a rationale for this workshop is shared more as a prompt than as a research summary. A significant fraction of the session will involve exchanges around how to organize learning in a way relies on the imagination, immersion and technological fluencies of both students and teachers.

For further information, contact Eric Hamilton at eric.hamilton@pepperdine.edu, or http://teacherscreate.org

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11. Digital Ecosystems for Collaborative Learning (DECL 2012)

Embedding Personal and Collaborative Devices to Support Classrooms of the Future.

Organisers:

- **Pierre Dillenbourg,** École Polytechnique Fédérale de Lausanne, Switzerland
- **James Slotta**, University of Toronto, Canada
- **Mike Tissenbaum**, University of Toronto, Canada
- **Beat Schwendimann**, The University of Sydney, Australia
- **Roberto Martinez,** The University of Sydney, Australia
- **Andrew Clayphan,** The University of Sydney, Australia
- **Christopher Ackad**, The University of Sydney, Australia

Workshop overview

Multi-touch tables, interactive whiteboards, motion sensitive interfaces, physical and tangible computing all present enticing new functional affordances for learning. However, this constitutes a problem space for design, rather than any specific solution. What forms of learning can now be supported by a multi-user touch screen? How can such learning be incorporated into K-12, university, or informal learning designs? As new commercial offerings become available, it is timely for learning scientists to explore how to best make use of these tools at the classroom.

This workshop will offer a venue to discuss how to develop novel technology into supportive tools and intelligent mediators between peers' activity to build the classroom of the future. We will discuss the role of technology and its limitations along with the roles of teachers and students. The workshop will give participants the opportunity to experience such a classroom, share their work, discuss practical challenges and define an agenda for future work. Participants will be asked to complete a number of simple tasks that involve sharing experiences, collaborating and discussing with other participants aided by interactive surfaces.

Audience

We invite researchers, educators, designers, ethnographers and computer scientists who explore, build, or work with educational technology that provides support to students and teachers in the classroom.

Participants will be invited to submit position papers up to 4 pages (with an optional video) describing their current or intended work to enhance collaboration at the classroom with multi-user or augmented spatial designs. Their paper should include the following elements: (1) Their research interests; (2) their theoretical perspective about collaborative learning; (3) their technology experiences or interests; (4) their methodological experiences or interests; (5) any specific goals for this workshop.

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Workshop outcomes

- Summarising note (by workshop leaders): "Embedding Personal and Collaborative Devices to Support Classrooms of the Future".

- The position papers and videos will be published in separate Proceedings of the workshop that will be available at the Workshop's website.

Submissions and questions

Workshop web site: https://sites.google.com/site/iclsdecl/

Contact Roberto Martinez Maldonado (roberto@it.usyd.edu.au) for additional information

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