## EDITOR'S PROOF

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## Q1 Collaborative Learning at CSCL 2013

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In Madison, Wisconsin, USA, with its Northern European heritage, collaborative learning is fueled by brats and beer. At the international CSCL conference in June, there were many formal and informal opportunities to build knowledge about our field with colleagues from around the world while sipping drinks on the shores of the sunny lakes, along the vibrant college-town avenues, or in the university halls.

The intense week of interaction began—at least for some—with a daylong retreat of the14ISLS Board. Discussion focused on plans for increasing the impact of the CSCL and15Learning Sciences research community globally. A more interactive website is imminent16and increased outreach to communities that are just discovering CSCL is planned. Efforts to17increase access to the contents of the journals—*ijCSCL* and *JLS*—as well as conference18papers and the CSCL book series are underway.19

The pre-conference began the next day with a variety of well-attended workshops. One 20 was on interactional resources spanning multiple levels of analysis in CSCL settings—as 21 discussed in the three preceding issues of *ijCSCL*. Another of especially general interest was 22 a workshop on creating a cyber-infrastructure that can support engagement by multiple 23 researchers in working toward answers to important theory-driven research questions for 24 design-based research. As always, the doctoral consortium and early career workshops were valuable for the many mentors as well as the participants. 26

The following day began with half-day workshops. We three attended one that seemed 27 particularly promising for the field of CSCL. The international PISA test—which rates 28 student math, science, and reading skills in over 70 countries around the world—is planning 29 to introduce measures of collaborative problem-solving skills in 2015. This could mean that 30 students, parents, teachers, schools, and policy makers in many countries will urgently want 31 to know about collaborative learning. In fact, the test will be computer supported, having 32 students tested through interacting with a computer system. This workshop was the first time 33

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that the framework for measuring collaborative problem solving in the PISA tests was made 34 public. Fortunately, a number of CSCL and Learning Sciences researchers are closely 35 involved in this effort and are committed to making the process as public as possible. The 36 debates and discussion during the workshop raised important theoretical and methodological 37 challenges to measuring collaborative problem solving, and there is general agreement that 38 such open communication between the CSCL and the psychometric communities is bene-39 ficial to advances in both large-scale assessment methodologies as well as in our under-40standing of collaborative learning and problem solving. We welcome submissions to *ijCSCL* 41 on the PISA approach and its implications for CSCL. 42

Highlights of the conference included three keynote presentations, each of which broad-43ened the discussions of CSCL. They presented insights into behaviors related to collabora-44 tive learning among chimpanzees who live in the present only, teenagers who build rapport 45by insulting each other, and young girls who express themselves in amateur videos. Another 46highlight was the invited presidential symposium, organized by ISLS current president, 47 Frank Fischer, in-coming president, Cindy Hmelo-Silver, and former president, Susan 48Goldman. Because of its potential interest to the *ijCSCL* readership, we present a summary 49of the symposium presentations below. 50

Of course, the heart of the conference was the presentation of lecture papers, interactive 51 papers, posters, demos, symposia, etc.—too many for anyone to attend all of them. We hope 52 to publish extended journal versions of some of this important research next year. For this 53 issue, we present a mix of empirical, pedagogical and theoretical papers addressing current 54 topics in CSCL. 55

## Looking back and looking ahead: Twenty international years of CSCL

The Presidential Symposium presenters analyzed the research and the development of the 57 CSCL community in their respective regions of the world. Gerry Stahl presented a brief 58 history of CSCL in North America; Paul Kirschner presented his view on CSCL research 59 and communities in Europe; Peter Reimann analyzed CSCL research in Australia; and 60 Nancy Law contributed her perspective on CSCL in Asia. In the role of the discussant, 61 conference program co-chair Nikol Rummel provided a synthesizing perspective on historical and future trends. 63

Almost two decades after the first conference on computer support for collaborative 64 learning, four contributors analyzed the research and the development of the CSCL com-65 munity in their respective regions of the world. Questions they addressed included the 66 following: What were the origins and early stages of CSCL in this area of the world? What 67 have been important research questions, concepts, and methods? Which unique contribu-68 tions to CSCL research have there been from this area of the world? What have been the role 69 and the relation of different disciplines within CSCL research, e.g., computer science, 70psychology, and educational sciences? Looking ahead, what future trajectories can be 71expected—and what would be desirable—futures of CSCL research? The discussant 72reflected on the presence in the current conference of the trends presented in this 73symposium. 74

For many of the leading early North American CSCL researchers, the goal was to use 75 CSCL innovations as levers to transform education by promoting collaborative learning. 76 They investigated the interaction within the group and the group processes related to social 77 dynamics as well as to knowledge building. Research addressed aspects like design of 78 technology, analysis of collaborative learning, and the evaluation of collaborative-learning 79

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outcomes. A major contribution of North America to CSCL research has been the emphasis80on design-based research, in which iterative cycles of trials in realistic settings are used to81drive design of technology and pedagogy. Future trends in CSCL research are toward82increasing international collaborations and projects.83

The hallmark of European CSCL is its diversity. Across Europe, research groups are designing tools for CSCL and studying their implementation in terms of duration, scripting, and social dynamics. Aided by national, transnational and European programs, Europeans regularly work with and meet with each other, learning from each other in Networks of Excellence and European schools. The future promises continued cross-national efforts. 88

The main "driving" discipline behind CSCL research in Australia is applied computer 89 science, in particular in the form of technology developments in higher education. 90 Australia's innovative contributions to CSCL currently include tabletop computing in 91 support of co-located, synchronous group work and group learning, collaborative web-92based video annotation, and collaborative (academic) writing as a form of CSCL. Likely 93 trajectories for future research are those focused on media-rich (synchronous) collaboration, 94 including video conferencing and collaboration in immersive environments; increasing use 95of learning analytics in the context of CSCL studies, and studies into collaboration processes 96 in design teams and virtual design studios. 97

CSCL research in Asia was stimulated in the 1990s by the formulation of IT master-plans 98 in a number of countries and focused on improving education system-wide and preparing 99 citizens for the 21st century. There is strong interest in linking research and practice and an 100 orientation toward collaborative knowledge building. The CSCL research conducted in Asia 101 has a strong emphasis on pedagogy and assessment, bringing with it the challenge of 102integrating CSCL into the daily instructional milieu. A second emphasis in Asia is on 103teacher learning and professional teacher networks for knowledge building. Looking to 104 the future, CSCL in Asia needs to take up the challenges inherent in research on CSCL at 105individual, group, and community levels. 106

Two themes emerge from considering the perspectives presented from the different 107 regions of the world on the past and future of the field of CSCL: diversity and unity. On 108the one hand, we see a lot of diversity in the ways CSCL research has developed and is 109currently enacted. Differences concern, for instance, research foci (i.e., which letter of the 110CSCL acronym research focuses on), research methodology, overarching goals of the 111 research, and the extent to which various stakeholder groups (e.g., learners, teachers, policy 112makers) guide the work or are considered. On the other hand, it is evident that there is unity 113in the diversity: The joint goal of the international community of CSCL is to make an impact 114on the way collaborative learning is implemented, both in terms of educational practice and 115policy. Developing the CSCL community as part of the larger umbrella of ISLS will be 116instrumental to enabling the CSCL community to have a say in international developments, 117 such as the planned inclusion of the area of collaborative problem solving in PISA 2015. 118

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