

ijCSCL – a Journal for Research in CSCL

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A Journal of the Community

The launch of the *International Journal of Computer-Supported Collaborative Learning* (ijCSCL) is a propitious step forward for the CSCL community: It heralds a transition of the field to a new level of academic maturity. It provides an appropriate communication medium and a selective knowledge archive for an increasingly global research network.

ijCSCL was proposed by the CSCL community and is sponsored by the International Society of the Learning Sciences (ISLS). The Board of Editors includes many leading CSCL researchers from around the world, and others participate as reviewers. Many of the articles in ijCSCL originate in papers at CSCL conferences and regional workshops.

This journal is committed to serving as an important communication vehicle of the growing CSCL community and cognate fields. As such, ijCSCL will contribute to our collaborative learning as a knowledge-building community of practice.

The First Ten Years of CSCL

The term *computer-supported collaborative learning* (CSCL) was first publicly coined at an international workshop in Maratea, Italy, in 1989. Since 1995, a biannual series of international CSCL conferences has been held in North America, Western Europe and most recently Asia. The 2005 CSCL conference held in Taiwan celebrated the tenth anniversary of the conference series with the theme, "CSCL: The Next Ten Years." Most of the articles in this issue of ijCSCL are based on conference papers from there.

As the CSCL conference series evolved over the past ten years, an international community of researchers formed around it. Participants had professional roots in diverse fields, such as artificial intelligence, educational and cognitive psychology, software development, instructional design. While the conference proceedings served as boundary objects to tie this interdisciplinary community loosely together, more was felt to be needed. In recent years, a CSCL book series was launched through Springer and already offers five edited volumes. ijCSCL was proposed as an additional medium to support this fast-growing discipline.

Meanwhile, ISLS was founded to provide an institutional support for CSCL and other learning science conferences and journals. Along with the *Journal of the Learning Sciences*, ijCSCL is an official journal of ISLS. Another important factor

in the development of the CSCL community has been the establishment of regional networks of CSCL researchers and local centers; the oldest of these is the Ontario Institute for Studies in Education in Canada and the largest is the CSCL SIG of Kaleidoscope in Europe. Such collaborative networks have been essential to progress in this field, and stand in the background of much of the work presented in this issue.

The Next Ten Years of CSCL

Establishing this journal, like holding the latest conference in Taiwan, reflects a strategy that aims to make the CSCL community fully international. We live in a global world and we learn together. The issues that confront the field of CSCL today are far too complex to be solved by individuals or small labs working independently. We must pool our resources, our insights and our findings. The journal's mission is to share seminal innovations and proposals from around the world, so they can be taken up and collaboratively developed. This issue features contributions from Brazil, Canada, China, Denmark, Germany, Sweden, the United Kingdom and the United States.

Over the next decade, *ijCSCL* will contribute to the development of the CSCL field by providing a peer-reviewed venue for the exchange of high-quality analyses and ideas. Although it is now well established as an academic specialty and as a leading-edge research domain, like all vigorous research fields CSCL faces many challenges in specifying its subject matter and approaches. The journal will help to define and project the field's identity.

As a heritage of its interdisciplinary origins, CSCL research includes a mixture of theories, technologies and methodologies. Most of these were developed in different academic contexts and are tuned to conflicting sets of criteria. While it may have been feasible to make progress on CSCL problems during the first decade of the field's existence from exclusively within an educational psychology perspective or using an artificial intelligence approach, it is less likely now. We have learned meanwhile that the issues are complex and intertwined. One must address system-building, instructional-design, experimental-analysis and other aspects simultaneously. The guiding theories, technologies, methodologies, curricula and classroom practices must co-evolve in orchestrated efforts.

This not only means that CSCL research must be practiced by collaborative research teams with diverse training, but also that we need to develop theory, technology, research methods and educational practices that are specific to CSCL, and not simply inherited. We need theories of collaborative interaction that are not necessarily based on individual learning models. We need technologies with specific supports for collaborative learning, not just generic communication media. We need methodologies that capture both micro-level interactions in small groups and community-level developments as mediated by social practices and by technical infrastructures. The articles in this issue start to move in such directions.

A Journal of the Future

The technology of knowledge dissemination is changing rapidly. An international journal of CSCL should be at the forefront of such change. Today, more academic research is conducted by Internet searches than by browsing a library's back-room stacks. Research not readily available online is doomed to obscurity. Without losing sight of the importance of archival preservation, Open Access must be a

priority. Through a unique arrangement with the prestigious academic press Springer, ijCSCL is able to make the full text of its articles freely available on the Web, indefinitely, while still publishing them electronically and in traditional hardcopy journal form.

All articles published in ijCSCL are subject to a rigorous peer review process, typically going through several rounds of revision at the direction of at least three Board members in order to bring out their most important contributions. Once a paper is officially accepted it is typeset, assigned a unique Digital Object Identifier (DOI) and posted on ijCSCL.org where it is permanently available for free. Subsequently, the final and official version is published on SpringerLink.com. Quarterly issues of the journal are printed and mailed to subscribers.

Springer is a leader in the field of academic publishing. They bring to this endeavor a wealth of experience and prestige, and they will continue to do so as the publishing industry evolves. Working together, ijCSCL, ISLS and Springer have developed a number of ways to make the journal accessible to the widest possible audience. ijCSCL is already included in Springer's catalog of education journals, which is distributed to thousands of universities worldwide. Additionally, members of ISLS receive free electronic access and can choose to subscribe to ijCSCL as part of their membership fee at ISLS.org. Springer has an alert service at www.springerlink.com/alerting and various free access offers to selected electronic articles. These broad access efforts ensure that ijCSCL will be indexed and ranked highly by ISI and other relevant abstracting and indexing services.

Introducing the Inaugural Issue

In keeping with the Taiwan conference theme, "CSCL: The Next Ten Years," volume 1, issue 1 of ijCSCL includes articles that propose new directions for the CSCL field. Topics range from reflections on the evolution of the CSCL community itself to innovative theoretical perspectives, pedagogical practices, research methodologies and technological developments.

These articles illustrate the variety of methods, theories and approaches active in contemporary CSCL work. They draw on research traditions, theoretical frameworks, quantitative measures, qualitative analyses, case studies and iterative trials to support their claims and proposals. In future issues, the scope will be broadened further by including more empirical studies based on classic experimental methodology. Rigorous scientific analyses from any approach that contribute to progress in CSCL are welcome. This issue features the following:

1. The CSCL Community in its First Decade

The journal opens with an analysis of the history and development of the CSCL research community. First, a variety of quantitative measures are applied to test prevailing notions about the nature and composition of the community. A key question has to do with continuity of membership: to what extent do attendees at one conference increase their level of participation in subsequent conferences and what is the effect of the high turnover of newcomers? Is the conference series really international; what factors influence its geographic mix? While certain trends emerge from the data, it is necessary to also incorporate qualitative analyses to gain a better understanding of the significance of these trends. The study provides an initial scientific look at CSCL as a research community and establishes a baseline for further investigation, but it also raises enduring methodological questions about

how to assess such a fluid and multi-faceted community. It is suggestive of how to continue to deepen the international character of the community.

2. A Relational, Indirect, Meso-level Approach

Much CSCL research focuses on the individual learner or on local interactions in dyads and small groups. The role of technology is conceptualized as mediation by affordances of artifacts, which exist within socio-cultural contexts, influenced by relatively stable large-scale factors. This paper confronts these current views with theoretical challenges emerging from two European Union projects. It suggests that technologies like the Internet cannot be treated as simple artifacts, but form infrastructures at a meso level that mediate between people and social structures. Infrastructures are not objects with attributes, but are enacted in use in ways that help to evolve social edifices. Their relational character implies that design of CSCL technologies and interventions can only be indirect, establishing preconditions for educational opportunities, but not causally determining learning outcomes. This result has not only methodological implications, but ethical ones as well.

3. Student Assessment of Collaborative Inquiry

Perhaps the most vexing issue today in transforming instruction into collaborative knowledge building is how to assess student benefits. If learning takes place through the group, classroom or community, then how can outcomes be measured or credit assigned? In a clever twist, this research has students in Hong Kong schools analyze and assess the knowledge building that takes place in their own classrooms, with a certain emphasis on their own individual involvement. Assessment thereby merges with meta-cognition and promotes deeper learning for both group and individual. This research earned the best paper award at the Taiwan conference; it is part of a long-term research agenda related to the work of Scardamalia and Bereiter, who were there given the lifetime achievement award for their seminal contributions to CSCL. The paper uses quantitative quasi-experimental statistical results to support its claims, as well as qualitative analysis and case study examples to convey a more detailed understanding of these results.

4. A Scholarship of Application

The conventional assumption is that scientific research must result in a generalizable discovery of new knowledge. However, in a new and interdisciplinary scientific community it is also important to integrate existing knowledge from other fields, with appropriate adaptation. This paper proposes yet another form of valuable work in the learning sciences: Exploring how a technology can be applied in a spectrum of situations. The applicability of specific technologies to the support of collaborative learning is not a binary question. Interestingly, this paper demonstrates both the potential and the limitations of wiki technology for CSCL. Within the same university with the same tech support, the use of wikis succeeded easily in certain subject matters and classroom cultures but failed in others. The authors explore in detail the reasons for this and the potential for overcoming the barriers in certain cases.

5. Evolving a Chat Tool to Increase Understanding

Instant messaging, SMS and chat are widely popular among students for socializing one-on-one. In principle, chat technology has the potential to support many-to-many communication for collaborative learning activities, overcoming the requirements of face-to-face interaction for turn-taking and physical presence. However, active chat sessions involving more than three or four participants become confusing and straining. The design-based research reported here undertook many iterations of re-design to respond to the problem of chat confusion. Each attempt led to new insights into the problem and ideas for technical responses. The research agenda spanning several years follows a systematic path of iterative inquiry and CSCL technology design evolution, tested in a Brazilian classroom setting. Thereby, the chat tool is successively modified to overcome the major barriers of this medium and to free chat to become an important technology for collaborative learning.

6. A Dialogical Understanding of Teaching Thinking Skills

It is now popularly accepted that success in the contemporary world requires creative, sophisticated thinking skills, and not just the mastery of accepted facts and proven rules. Theoretical analysis of the nature of higher-order thinking skills ties them fundamentally to dialogic understanding as described in this final article. Thereby, it argues for the centrality of collaborative learning. A series of case studies illustrates the point that many core thinking skills of individuals are actually derived from dialogic skills of small groups of people interacting and collaborating. The skills include dealing effectively with multiple, potentially incompatible perspectives and complex problems that have no clear solution paths or final answers. The notion of teaching thinking skills rather than facts is re-conceptualized in terms of a dialogic model, bringing theoretic coherence to an important but hitherto ad hoc area of study. Perhaps these are the kinds of thinking skills needed in CSCL research itself, developed at the niveau of scientific methodology.