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Explorations of participation in discourse

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Theories of CSCL have often focused on the discourse of student groups and their possible modes of participation in this discourse as definitive of collaborative learning. Lave & Wenger (1991), for instance, analyzed the increasing participation of novices in the discourses of communities of practice. Scardamalia & Bereiter (1996) proposed the use of networked computers to promote literate participation of students in knowledge-building discourses. Many contemporary theorists define their approaches in terms of dialog, communication and interaction. Most recently, Sfard (2008) has analyzed mathematical thinking of students as growing participation in specific discourses.

Research methods in CSCL tend to focus on the analysis of traces of communication and other indicators of participation in discourse in order to study phenomena of collaboration and to assess effectiveness of computational supports. Researchers often complain that such analysis is time-consuming and tedious, wishing that computers could take over some of this burden. In their contribution to this issue, Rosé and colleagues review the current state of the art of computational linguistics and outline prospects for computer support of discourse analysis.

The major limitation of automated processing of natural language—and for that matter of reliable manual coding procedures—is the central role of context in discourse; the determination of the significance of a given utterance depends considerably upon its indexical references to other elements in the discourse context. Kienle & Herrmann present a context-oriented theory of communication and explore through design-based research its implications for the design of technology to support collaborative/discursive learning. They discover that understanding the contextual embeddedness of discourse can be problematic even for human participants, who also can benefit from computer support in CSCL settings.

The challenge of supporting participation in CSCL settings is taken up by Schoonenboom in her study of scripting and the design of the software interface. Her concern is to help students from different countries establish the common ground that is necessary for providing a shared context of discussion. Continuing the ijCSCL flash theme of scripting, she provides detailed steps for students who are working at a distance and do not know each other to begin to participate in a discourse on sustainable development in the European Union. She also provides a carefully structured interface for Blackboard

threaded discussion to support the scripted sequencing of the discourse. She then measures the effects of the script and the interface on student participation.

The theme of participation takes center stage in Ares' investigation of the use of a computer simulation in a mathematics classroom with minority students. Here, the students already share a sub-culture, and the collaborative use of the simulation in the classroom serves to link their vernacular to a nascent mathematical discourse. The design of the technology, which provides networked collaborative control over the simulation, opens opportunities for the students to bring to bear their shared cultural practices as resources for mathematical learning and common ground for math discourse.

Oner, too, looks at participation in the discourse of mathematics, specifically at the genre known as "proof." She argues that in contemporary math discussion both formal proof and perceptually guided exploration are important. CSCL approaches can support these two aspects through the use of knowledge-building environments with appropriate scaffolding and computational applications like dynamic geometry simulations. These can support not only the formal and exploratory discourses of mathematics, but also collaborative reflection on the relation of these complementary ways of knowing.

In this issue of *ijCSCL*, we introduce a new feature: a book review. We hope that book reviews will enliven the discourse within the journal by bringing in voices from outside of CSCL and confronting them with the issues of our field, or by taking a critical look at new book-length contributions by CSCL researchers. To inaugurate this feature, we review Sfard's (2008) volume in the Cambridge series on Learning and Doing. Anna Sfard is well known in CSCL circles and is a member of the *ijCSCL* Editorial Board. However, her book is in the domain of mathematical cognition, and focuses neither on computer support nor on small-group collaborative learning (except in the general sense that learning by communicating is fundamentally social, intersubjective, or collaborative). So we explore the implications of her participationist theory for collaborative small groups and computer-mediated discourse. For future issues, *ijCSCL* welcomes submissions of reviews on CSCL topics or books that could bring important new perspectives to CSCL or highlight major advances.

References

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