

John Seely Brown (2013). Foreword.

In: Sean Goggins, Isa Jahnke & Volker Wulf (Eds.): *Computer-Supported Collaborative Learning at the Workplace: CSCL@Work*. New York: Springer, pp. v – viii.

## **Foreword – CSCL@Work**

*John Seely Brown*

It is hard to imagine a topic more perfectly timed than the central issue this book explores. In a world of constant change where many of our skills now have a half-life measured in a few years and many of our institutions are experiencing creative destruction at a daunting pace, we need to find ways to merge the best insights from formal education, where the goal is to learn what is already known, with those of organizational and workplace learning, where at least one of the main goals is to create new knowledge (chapter 1 by Goggins and Jahnke). Indeed, building a bridge between learning what is known and learning that creates new knowledge is of crucial importance for both the computer supported collaborative learning community and the computer supported collaborative work community (chapter 2 by Fischer). Collaborative learning in small groups (and not only community learning or organizational learning) is “the” important unit of analysis and design in CSCL and CSCW (chapter 3 by Stahl).

Schooling can no longer survive on a one-way knowledge transfer model and learning in the workplace cannot rest solely on its incessant pursuit of the new (chapter 5 by Mumford). In both cases we find that a purely cognitive model of knowledge acquisition must be augmented by the social dimension of learning environments. This social dimension extends to workplace learning and regional economic development; benefiting individuals, organizations and society (chapter 4 by Rohde & Wulf).

I have spent much of my career exploring both individual learning and organizational and workplace learning, and exploring how technology and the design of learning spaces could accelerate capability building and productive inquiry.

As soon as I saw this manuscript I couldn't wait to read it since one of my current undertakings is a project in which we are exploring ways of cultivating a questing disposition around sustainability that scales. The project involves approximately a million or more employees spread out in 40 thousand factories that make up a loosely coupled worldwide process network. Not surprisingly, I expect that the social aspect of learning, which leverages distributed peer-based mentoring and collaborative storytelling, will be a crucial part of this learning platform. The book includes four empirical cases (part II in this volume) from CSCL@Work practices especially focused on reflection processes. For instance, there are two cases within the health care sector. The cases show how collaborative learning practices extend the evaluation skills and deepen the knowledge of doctors and nurses (chapter 6 by Hartswood, Procter, Taylor, Blot and Anderson) through collaborative reflections (chapter 7 by Prilla, Herrmann and Degeling).

Another major goal of this book is to lay out the foundations for bridging between formal classroom learning and informal learning in schools or the workplace; for instance, reflective community building at the workplace (chapter 8 by Hokstad, Prasolova-Førland and Fominykh) and the role of communication and facilitation in work-based learning (chapter 9 by Kienle). We tend to forget just how natural this bridge can be. For example, the best indicator of success at college is one's ability to join (or form) a study group where class material is

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discussed within a small group of peers or problem sets are jointly worked on. (Richard Light) These study groups rely on peer to peer mentoring. No one individual is the expert. Instead, each student contributes some knowledge and experience that, when woven together, create a coherent and complete model. Note that this process also helps to make the information being discussed personal, a major facilitator in helping each participant absorb new material.

A similar and equally effective method applies in the workplace where both peer based and master based mentoring, situated in real work and socially embedded, springs into action whenever a new problem arises. In both study groups and in workplace learning, provisional attempts to make sense of something unknown or unforeseen lead to significant ah-ha experiences while they also cultivate a willingness to improvise and reflect rather than to panic. As part C (in this volume) illustrate such a learning experience occurs in unexpected places triggered through role playing games (chapter 10 by King) and social media and social networking sites (chapter 11 by Gurzick and White) which offers new ways to think about how learning as a social activity may be influenced by new technologies for enabling social interaction.

The need to improvise workarounds to problems that emerge in situ is, of course, not new. What is new is just how often the need to improvise and to construct new knowledge now arises. While the pace of change, which is driven by our digital infrastructures is partly responsible, it is also these increasingly powerful, networked infrastructures that provide the tools to help us meet these challenges. For example, as Gerhard Fischer noted many years ago, one way to amplify the power of situated learning is through a form of learning-on-demand. When the learner/worker is stuck, he/she can pull insight from a vast network of information, and then use social networks to discuss with others their opinions on what to believe. This process is made more effective through the wide use of collectives (Thomas & Brown) and communities of interest that form on the net, and through the emergence of Open Education Resources (OER), scaffolded by discussion groups which come together through social media.

Indeed, our own work at PARC, deeply informed by anthropologists Julian Orr, Lucy Suchman, Brigitte Jordan and Jack Wayland along with numerous computer scientists, pioneered the use of social media to create a new kind of distributed knowledge creation space among Xerox tech reps spread around the world. This system, appropriately named Eureka, (Bobrow & Whalen) enabled Xerox tech reps to capture insights and experiences that emerged from handling troubleshooting problems that were either not satisfactorily covered in their troubleshooting manuals or had never been seen or envisioned before. These stories were then peer-vetted and passed around the world on Xerox's internal networks. But the role of computer support systems is just one part of what makes systems like Xerox Eureka so powerful. The real power comes from the social and reputational capital that was created by its participants and from the identities being constructed through becoming active members of this network of practice. This is also illustrated by three empirical cases in part D (in this volume) with a strong emphasis of creative work including product design and mechanical engineering. One case shows that to 'make the process of decision making visible' affects the quality of solving problems when the answer is not known, but also helps to develop these capacities in new people, and facilitate expert communication about their expertise (chapter 12

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by Lund, Prudhomme and Cassier). The CSCL system called PeTEX addresses how tele-operated laboratories can bridge learning to the workplace and shows the critical dimension of distributed creative work (chapter 13 by Terkowsky, Jahnke, Pleul, May, Jungmann and Tekkaya).

Learning at the workplace often focuses on learning such as the primary activity. But CSCL@Work also considers the fact that learning means to provide employees with timely access to information for conducting everyday work while respecting business goals; learning in these cases is a secondary activity (work is the primary activity). An empirical case of customer service work and software product development describes this in detail (chapter 14 by Mørch).

The above social life of learning is, today, further amplified with the use of video, such as YouTube, that is uniquely suited to capture and render more of the tacit dimension of knowledge. Inexpensive and easy to use digital cameras along with powerful but easy to use video editing now make it simple to capture, edit and show what you have discovered.

What is needed now, more than ever, are theories and practices that bridge between formal and informal learning, didactic and experiential learning, peer-based and master-based mentoring, local and distributed learning, the cognitive and the social dimensions of learning. We also need to explore new kinds of computational platforms that can enhance the potential synergy between these contrasting pairs. This is where the research efforts of CSCL@work lie. They will help us craft learning contexts that lead to a new kind of learningscape, one that creatively exploits the inherent tension between process and practice. Yes, each of these pairs calls for a socio-technological lens but what is also needed is a design sensibility that can help all the parties involved co-create learning spaces that enhance both institutional and personal capabilities for thriving in a knowledge economy in constant change.

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