Chapter XIII
Developing Electronic Portfolios in a Computer Supported Collaborative Learning Environment

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ABSTRACT

Can a traditional college course be enhanced with online collaborative learning, with similar attributes to knowledge work in the modern world? Can students be engaged in semester long online collaborative work culminating their efforts in electronic portfolios that cannot be completed without the collective work of the whole group? Will some those students achieve a greater conceptual understanding of the domain than others? How will students react and adapt to kind of learning that aligns itself with assessment? These were the main questions driving the research with forty seven college level senior pre-service EFL teachers enrolled in an ELT materials development course, who were engaged in collaborative learning throughout a semester and prepared electronic portfolios consisting of their selection of best student work, all performed over a networked collaborative environment. The main goal is to probe further into the alignment of learning, collaboration, and assessment in computer forums within the framework of collaborative knowledge building. This chapter describes a knowledge-building environment (KBE) and the role of knowledge building portfolios in characterizing and scaffolding collaborative inquiry. What follows are some concise descriptions of the crucial concepts employed in the framework of this research. They are somewhat extended within the discussion section.
INTRODUCTION

Computer-supported collaborative learning (CSCL) has become a significant research topic under learning sciences. Collaborative is an adjective that implies working in a group of two or more to achieve a common goal, while respecting each individual’s contribution to the whole. CSCL is based on socio-constructivist aspects of learning, which highlight both individual thinking and socially distributed knowledge construction or knowledge building (Koschmann, 1996; Paz Dennen, 2000). CSCL is based on the idea that computer applications can scaffold and implement advanced socio-cognitive processes for knowledge sharing and knowledge building (Paavola et al., 2002) where students have a chance to collaboratively make representations, develop explanations of the subject studied, and participate in expert-like practices of knowledge construction (Scardamalia and Bereiter, 1994). Sustained problem-based inquiry supported by collaborative technologies appears to offer sound teaching and learning methods with all parties assuming more proper cognitive involvement for learning and understanding (Lehtinen et al., 1999; Bereiter, 2002). CSCL environments provide tools to facilitate students’ advancement of inquiry, learning and knowledge building (Scardamalia and Bereiter, 1993). CSCL research is mostly concerned with the individual rather than collective learning and focus on how students learn rather than what they learn, with special emphasis on individual learning processes and outcomes (Lee, Chan and Aalst, 2006).

Several empirical studies have demonstrated the effects of CSCL on students’ learning, on the processes of students’ conceptual change and social collaboration. Students’ understanding of the science concepts can be enhanced by providing tools for organizing, representing and visualizing their knowledge (Pea et al., 1999; Roschelle and Pea, 1999). CSCL environments may also support learning interactions as Linn et al. (1998) found that middle school students were capable of creating coherent arguments, reflecting their ideas and explicating different perspectives on science in collaborative CSCL discussions.

Aligning assessment and instruction is a desirable goal that needs assessment approaches that characterize and scaffold individual and collective learning (Chan and Aalst, 2004). Students assessing themselves can be an integral part of their personal and collective learning. Most students habitually search out those aspects of any course that are most closely aligned with getting a good grade and then they target their efforts on those learning activities (Reeves, 2000; Biggs, 1996).

Collaboration is an intellectual and emotional venture that does not come naturally to participants because it involves partial losing of individual freedom of independent action as well as risking effort for vaguely probable returns. Conducive and supportive environments for collaboration are indispensable for the emergence of trust among collaborators, along with a more valuable and gratifying experience that comes with emotional bonding and communal support. All goal oriented human activity, however, that is carried on through certain culturally mediated means, artifacts and tools (including language and speech) is situated, self-regulative and collective (Bearison, 2001).

Portfolio assessment is "defined as any method by which a student’s work is stored over time so that it can be reviewed in relationship to both process and product” (Reeves, 2000, p. 108). Students can compose electronic portfolios with their pick of the best work of the collective output of the whole group either in face to face or online courses. A portfolio with multiple contributions from students is a group achievement that captures the distributed and progressive nature of collaborative knowledge creation; it is designed to scaffold the complex interactions between individual and collective knowledge improvement as students broaden their collective understanding by analyzing the discourse (Lee et al., 2006).
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