

Chapter 8.6

Awareness Design in Online Collaborative Learning: A Pedagogical Perspective

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ABSTRACT

Collaboration in online learning environments is intended to foster harmonious interactions and mutual engagement among group members. To make group performance effective, it is essential to understand the dynamic mechanisms of online groupwork and the role of awareness supporting dynamic online collaboration. This chapter

reviews the nature of online collaboration from the standpoint of task, social, and technological dimensions and reconceptualizes the importance of awareness support into these three dimensions of online collaboration. Further, this chapter suggests key knowledge elements in each type of awareness. Detailed pedagogical examples and technological features for awareness support for online collaboration are proposed.

INTRODUCTION

In the midst of the emergence of advanced Web technologies, groupwork has arisen as one of the most promising and innovative practices in online as well as face-to-face teaching and learning. For decades, educators have been arguing that a technologically sophisticated learning environment can provide support for online inquiry and knowledge-building in a learning community. However, decisions about which technologies to use and the ways they that are used for collaboration greatly impact the quality and depth of computer-supported learning. Effective communication and productive groupwork across time zones and geographic distances are highly dependent on whether the technological tools are used in conjunction with appropriate pedagogical guidelines and technological support.

Groupwork in real world situations often relates to working together for a key part of a project. In educational settings, groupwork often entails learners building collective knowledge via dialogues while working together. The process of groupwork produces unexpected synergistic ideas between group members, the intense discussion or debate of ideas, and creative final products that extend far beyond the talents of any one individual.

Many groupware tools and course management systems offer a variety of advanced features, but most of these serve the function of delivering communication rather than supporting group activities (Kirschner & Van Bruggen, 2004). Given that deep understanding of peer interactions within a shared workplace impacts the success of group performance (Gutwin & Greenburg, 1999), problems within current groupwork environments often lie in their lack of support of intricate group tasks and dynamic group processes.

In order to make group performance successful, different types of awareness support as well as instructional design focused on groupwork are critical for online interactions (Dias & Borges,

1999; Kirsch-Pinheiro, Lima, & Borgers, 2003). Given that awareness is defined as “an understanding of the activities of others, which provide a context for your own activity” (Dourish & Bellotti, 1992, p. 1), any contextual information provided by instructional design and systems supports helps coordinate the collaborative work process. In other words, awareness can assist in building harmonious interactions by allowing learners to be aware of basic information such as what is going on, what the assigned task or learning goal is, and what and how they can work together in online environments. Importantly, a sense of awareness of others, of the assigned tasks or activities, and of the multiple communication modes available plays a crucial role in ordinary work processes. Given that the success of online collaboration is contingent on group member interactions in the learning process with support of awareness information, awareness should be a major concern when designing groupware tools and systems.

Up to now, system development approaches for supporting awareness in online learning environments have not addressed all of the dimensions of online collaboration. A key reason for these limitations is that most studies in this area have been approached from system development or technological perspectives, rather than from pedagogical ones. As a result, such studies have failed to explore the dynamic mechanisms involved in the online collaborative process.

In response, in this chapter, we discuss the importance of awareness as a way of supporting the process of online collaborative learning, and introduce some related previous studies. Second, we present a framework of awareness support for online collaboration. In detail, the framework describes how we can design awareness, both pedagogically and technologically, for online collaboration. At the same time, the conceptual framework illustrates how different technological applications can support pedagogical strategies that facilitate collaborative teaching and learning. From the standpoint of human factors research,

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