Chapter 9
Harnessing the Potential of Cooperative Interaction:
Building Social & Physical Presence during Online Learning

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ABSTRACT

As educators make greater use of online learning environments and virtual communities, increased attention is being paid to the aspects of computer-mediated communication which facilitate constructive interaction between learners. The benefits of face-to-face cooperative learning are being pursued in the evolving computer-supported collaborative learning (CSCL) environment. The success of computer-supported collaborative learning is influenced by the amount and quality of social and physical presence available in the online environment. This chapter offers several best practices for enhancing learners' perceptions of social and physical presence within the digital realm, and it suggests future avenues of research which may lead to further improvements in the instructional potential of online learning environments.

INTRODUCTION

The recent influx of online distance learning courses has lead to the increased use of chat rooms, e-mail, and instant messaging, replacing the means for academic discussions previously accomplished only through physical proximity. Annetta and Holmes (2006) note that many classroom activities previously construed as 'face-to-face' have shifted into the online environment, and educators face increasing pressure to turn traditional, face-to-face courses into Internet-based courses.

As online courses become more commonplace for schools, instructors are beginning to encounter the difficulties inherent in substituting face-to-face discussion activities with computer-mediated equivalents. These online activities become even more challenging when instructors attempt to implement cooperative learning within their Internet-delivered courses. Instructional designers, familiar with learning theory and pedagogical methods, are often employed by educational

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institutions to facilitate this transition to CSCL (Smith, Passmore, Faught, 2009; Gros, 2001).

In this chapter, we review relevant research and theory on cooperative learning as it relates to online instruction, and discuss the obstacles educators must overcome for the effective use of student collaboration in the digital classroom. In addition, we identify and review the relevant research on two important psychological concepts deeply involved in online instruction: social and physical presence. Finally, we offer several evidence-based best practices for enhancing learners' perceptions of social and physical presence within the online learning environment and conclude with suggestions for future avenues of research which may lead to further improvements in the instructional potential of CSCL.

BACKGROUND

Cooperative learning has been thoroughly researched by psychologists and educators during the last half century, and during the last two decades this research has begun to examine the use of computers and virtual environments to support learners' interaction. *Cooperative learning* is defined as the use of small groups during instruction with the explicit purpose that students work together to maximize their own and others' learning (Johnson, Johnson, & Holubec, 2003). Based on the theory of social interdependence, this structured learning environment is only as successful as students' sense of interdependence with one another and their individual accountability to make contributions to the collective learning goal (Johnson & Johnson, 1999). Positive interdependence is the most crucial element for establishing a meaningful cooperative relationship within a face-to-face or virtual learning environment. Positive *social interdependence* exists when group members perceive their success as dependent on the success of the whole group: each individual's efforts affect the outcomes of everyone else in the group.

Research has shown that cooperative learning is a highly successful instructional technique in traditional classrooms for students of all ages (Gillies, 2007; Johnson, Johnson & Smith, 2006; Sharan, 1990). Building productive cooperative relationships within a learning environment requires attention to the type of goals, interactions, and expectations shared by students. Online collaborative learning is assumed to have benefits similar to face-to-face cooperative learning (Harasim, 1990; Kreijns, Kirschner, & Jochems, 2003) and may also have some advantages over traditional settings (e.g. Lapadat, 2002; Jorczak, 2008).

Computer-Supported Collaborative Learning

A rapidly expanding field of educational research investigates the use of *computer-supported collaborative learning* (CSCL) as a method of engaging and retaining students in the online environment. In this chapter, we refer to CSCL as any educational experience in which networked computers and/or the Internet are used to facilitate structured interactions among students in groups or pairs. Peer collaboration has a significant influence on students' reported levels of engagement, motivation, and satisfaction during online learning (Jones & Issroff, 2005). This sense of collaborative community is essential to overcoming some of the potential hindrances in synchronous and asynchronous distance learning, including social isolation and de-personalization (Hiltz, 1997; Rovai, 2002).

Collaborative learning also has several cognitive benefits within a computer-mediated course structure. Research has shown that collaborative learning groups can foster critical thinking, shared understanding, retention of learned material and deeper level processing when compared with individualistic learning methods (Garrison, Anderson, & Archer, 2000; Gokhale, 1995; Johnson