Chapter XI
Perceptions in Computer-Supported Collaborative Learning:
Interaction of Cultural Diversity, Group Size, and Leadership

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ABSTRACT

Computer-supported collaborative learning (CSCL) has received increasing research attention owing to advances in e-learning technology and paradigmatic shifts in the educational arena. Owing to the growing diversity in student population in terms of nationality, the role of cultural diversity becomes greatly pronounced, and must be addressed. In this study, a laboratory experiment with a 2×2×2 factorial design was conducted, to investigate the interaction effects of perceived cultural diversity, group size, and leadership, on learners' performance and satisfaction with process. Contrary to an expected negative relationship between perceived cultural diversity and performance, a positive relationship emerged as a result of leadership. Leadership lowered learners' satisfaction with the process in perceived homogeneous groups (as compared to perceived heterogeneous groups) and smaller groups (as compared to larger groups).

INTRODUCTION

The promising capability of e-learning and communication technology has opened the door to new opportunities for collaborative learning, a learning process where two or more people work together to create meaning, explore a topic, or improve skills (Roberts, 2005). This learning method has been promoted to be more effective in achieving meaningful learning over other traditional instructional strategies because it supports learner's knowledge construction process by embodying active cooperation and teamwork in problem solving (Alavi & Leidner, 2001; Khalifa, Kwok, & Davison, 2002). Most of the groupware applications serve as a systems development platform on which computer-supported collaborative learning (CSCL) can be facilitated by embedding cognitive principles to support distributed discussions among learners. A substantial amount of empirical evidence demonstrates that CSCL tends to yield more desirable learning outcomes than nontechnology-enabled collaborative learning (Salovaara, 2005).

As a consequence of globalization, there are a growing number of institutions worldwide offering virtual education programs that often incorporate CSCL activities as part of the programs. These activities are no longer constrained by time or geographical location. Accordingly, the role of cultural diversity becomes enhanced and must be addressed, as there is a growing diversity in the student population in terms of nationality. In spite of the advantages brought about by collaborative learning technology, heterogeneous groups face challenges triggered by members' perception about the cultural diversity. However, very little research has examined the effects caused by cultural diversity from a perceptive aspect in the context of CSCL (Daily & Teich, 2001). Furthermore, as indicated by the small group literature, there are potential interaction effects on teamwork efficiency owing to perceived cultural diversity, leadership, and group size (Stephen & Stephen, 2001). This study seeks to gain insights into the possible interactions among these factors on learning performance and satisfaction with process. The knowledge will provide important practical guidelines for CSCL design and usage.

The remaining parts of this chapter are organized as follows. The next section provides a review on related theories and previous studies. In the following section a research model is presented, with research hypotheses derived. The design of the research method is discussed in next section. The final section contains data analysis. Section 6 discusses the findings and their implications.

LITERATURE REVIEW

Learning in CSCL

Communication effectiveness will be improved when task needs are matched to a medium's ability (Maruping & Agarwal, 2004; Zigurs, Buckland, Connolly, & Wilson, 1999). Feather (1999) suggests that individuals will prefer learning in the virtual environment if they require more time to think about a question before answering, find it hard to speak out in a traditional class, albeit possessing contributions, or like some degree of anonymity. The anonymity, text recording, and multiple access characteristics supported by communication technology should result in relatively higher rankings in parallelism, rehearsability, and reprocessability, yet lower rankings in symbol variety and immediacy of feedback, as compared to the traditional face-to-face setting (Dennis & Valacich, 1999). Anonymity will allow students to freely express themselves and overcome their inhibitions (Bargh & McKenna, 2004). The computer-mediated communication tools in the CSCL are found to be effective in overcoming the lack of peer interaction in the classroom (Li, 2002). Group members' comments are recorded as text and they can be revisited repeatedly; such a