

Cultural Diversity in Collaborative Learning Systems

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INTRODUCTION

Globalization makes cultural diversity a pertinent factor in e-learning, as distributed learning teams with mixed cultural backgrounds become commonplace in most e-learning programs, which can be study-based (schools and universities) or work-based (training units) (Zhang & Zhou, 2003). In these programs, collaborative learning is supported via computer-mediated communication technologies and instructional technologies. The primary goal of enhancing learning with technology aids, aligning with the goal of education at all levels, is to engage students in meaningful learning activities, which require learners to construct knowledge by actively interpreting, acquiring, and analyzing their experience (Alavi, Marakas, & Yoo, 2002). In accordance, meaningful learning requires knowledge to be constructed by the learners but not by the teachers. In this regard, collaborative learning, an activity where two or more people work together to create meaning, explore a topic, or improve skills, is considered superior to other individualistic instructional methods (Lerouge, Blanton, & Kittner, 2004). The basic premise underlying this is the socio-learning theory, which advocates that learning and development occur during cooperative socialization among peers and emerge through shared understandings (Leidner & Jarvenpaa, 1995). This highlights the criticality of the communication and collaboration pertaining to an individual's learning process. Since culture reflects the way one learns (Hofstede, 1997; Vygotsky, 1978), group members' cultural backgrounds play a significant role in affecting the collaborative learning process (Chang & Lim, 2005). Language, cognitive style, and learning style are some aspects of culture that concern collaborative learning in the short term.

Groups which have members of different cultural backgrounds are expected to be availed a wider variety of skills, information, and experiences that could potentially improve the quality of collaborative learning (Rich, 1997). In contrast, a group comprising members of similar backgrounds is vulnerable to the "groupthink" syndrome; when the syndrome operates, members could ignore alternatives, resulting in a deterioration of efficiency in making a group decision (Janis, 1982). Accordingly, it is conceivable that

groups formed by members of different cultural backgrounds are inherently less prone to the "groupthink" syndrome. However, the advantages of cultural diversity in achieving meaningful collaborative learning are not easily realized, as the basic modes of communication may vary among different cultures and, in consequence, communication distortion often occurs (Chidambaram, 1992). Collaborative learning systems (CLS) are being increasingly researched owing to their potential capabilities and the associated new opportunities in supporting collaborative learning, in particular for distributed groups involving members of different cultural backgrounds (Alavi & Leidner, 2001). Collaborative learning systems provide the necessary medium to support interaction among learners, and therefore modify the nature and the efficiency of the collaborative learning activities (Mandryk, Inkepn, Bilezikjian, Klemmer, & Landay, 2001). The current article looks into how collaborative learning systems may better accommodate cultural diversity in e-learning groups. In addition, this article discusses pertinent issues regarding the role of a leader in building the common ground among learners in order to maximize the potential of collaborative learning systems when cultural diversity is present.

BACKGROUND

Collaborative learning is superior to individualistic instruction in terms of increase in individual achievement, positive changes in social attitudes, and general enhancement of motivation to learn, among other positive outcomes (Slavin, 1990). Learners tend to generate higher-level reasoning strategies, a greater diversity of ideas and procedures, more critical thinking, more creative responses, and better long-term retention when they are actively learning in collaborative learning groups than when they are learning individually or competitively (Schlechter, 1990). Growing interest in supporting the needs of collaborative learning, boosted by concurrent improvements in both computer mediated communication (CMC) and group support systems (GSS), has led to the emergence of the instructional technology known as collaborative learning systems. These are systems

implemented to provide computer-supported environments which facilitate collaborative learning. The importance of these systems lies fundamentally in their being a medium through which learners can cooperate with others.

Technology shapes the communication among users in terms of five media characteristics: symbol variety, parallelism, rehearsability, reprocessability, and immediacy of feedback (Dennis & Valacich, 1999). Symbol variety refers to the bandwidth that information can be communicated; parallelism is the number of concurrent conversations that a medium can support; rehearsability is the capability enabling users to modify a message before sending; reprocessability refers to the extent to which messages sent can be reprocessed during the communication; immediacy of feedback indicates whether a medium supports spontaneous feedback. In comparing collaborative learning systems and face-to-face setting in terms of three media characteristics—parallelism, rehearsability and reprocessability—the former outperforms the latter by embedding anonymity, text recording, and multiple access features; in terms of the other two media characteristics, symbol variety and immediacy of feedback, the situation is reversed (Dennis & Valacich, 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. Empirical evidence demonstrates that computer-mediated cooperative learning tended to have positive impacts on learners' performance and autonomy in controlling their learning pace (Salovaara, 2005; Yu, 2001).

MAIN THRUST OF THE ARTICLE

Potential of Collaborative Learning System in Accommodating Cultural Diversity

Culture is defined as the collective programming of the mind which makes the inhabitants of one country distinguishable from another (Hofstede, 1997). A heterogeneous group is one whose members are of different (national) cultural backgrounds while a homogeneous group has members of the same (national) cultural background. Hofstede (1997) has suggested four main cultural dimensions: individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity. Hofstede's theory entails major cultural dimensions and seeks to explain the underlying causes of dissimilar behaviors in communication; indeed, different group behaviors are noted between heterogeneous and homogeneous groups (Stephan & Stephan, 2001). Members in an individualistic culture generally prefer loose

ties with other peers during the collaboration process. In contrast, members in a collectivistic culture are typically more concerned with the common goal of the group and tend to prefer to work together.

A potential benefit of the collaborative learning systems is the support of diverse learning styles (Wang, Hinn, & Kanfer, 2001). Functions embedded in collaborative learning systems can enable more effective collaborative learning activities in heterogeneous groups by smoothing the communication process. In the face-to-face setting without technology aid, learners may feel the need to wait for others to express their ideas, by which time they may have either forgotten their own ideas or become less confident with these ideas; this phenomenon is called production blocking. Through embedding concurrent inputs by multiple users, collaborative learning systems offer a unique opportunity to eliminate production blocking, particularly as group size increases (Valacich, Jessup, Dennis, & Nunamaker, 1992). Moreover, text-based communication in these systems offers important features for communication that are radically different from the face-to-face setting. Group members' comments are recorded as text and they can be revisited repeatedly; such a feature is expected to enhance learning effectiveness as compared to oral communication, especially for non-native speakers, since no speaking has to take place (Herring, 1999). The communication support in collaborative learning systems has been suggested to be an effective tool in dealing with the lack of peer interaction in the classroom (Li, 2002). The underlying reason is that participation becomes more evenly distributed among members with computer-mediated interaction, while status and hierarchical structures become less important (Laughlin, Chandler, Shupe, Magley, & Hulbert, 1995).

Besides the communication difficulty mentioned previously, learners' uncertainty and anxiety form another challenge posted by cultural diversity in the face-to-face setting. In the absence of technological aid, when team members interact in the course of collaboration, uncertainty and anxiety of being in a heterogeneous group are likely to affect learners' communication with one another (Gudykunst, 1995), thus decreasing their performance. However, owing to the differences in communication process (as compared to face-to-face interaction), the rehearsability and the relatively lower degree of social presence embedded in collaborative learning systems are able to help the communication process in heterogeneous groups by lowering members' uncertainty and anxiety (Young, 2003). Therefore, the negative effects of cultural differences are reduced if not altogether eliminated by computer-aided systems, as learners of different cultures gain more accurate understanding of one another. Notwithstanding this, the diversity in terms of cultural values and experiences, earlier argued to be a strength, is not eroded. Also, the systems do not take the heterogeneous groups back to the "groupthink" situation which is more commonly present

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