ENHANCING COLLABORATION IN BUSINESS INFORMATION SYSTEMS COURSES WITH COMPUTER-MEDIATED COMMUNICATION

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ABSTRACT

Global expansion has made it essential for companies to conduct team work through computer-mediated communication. Therefore, to prepare students for success in the business world, instructors must help students develop necessary skills to collaborate via computer systems. This paper outlines collaborative activities used in Business Information Systems courses to help students practice and develop computer-mediated communication skills.

Keywords: collaboration, computer-mediated communication (CMC), collaborative learning, teaching strategies, distance education

INTRODUCTION

Groups are a fundamental part of the business world. Yet, as companies continue to expand internationally, a major challenge lies in promoting effective communication amongst employees who are geographically dispersed and located in varying time zones. Global expansion has made it essential for companies to encourage group collaboration through computer systems. Computer-mediated groups lead to different communicative behaviors that have a “profound effect upon group structure, process and development” (5). To prepare students for success in the business world, instructors must assist students in developing necessary skills to collaborate via computer systems. The purpose of this paper is to share collaborative activities used in Business Information Systems (BIS) courses to help students practice and develop computer-mediated communication skills. First it is necessary to define computer-mediated communication along with its unique attributes, benefits, and limitations. Then, I will outline two examples of computer-mediated collaborative projects used in BIS courses. In conclusion, I will share student outcomes and skill development evidenced in these collaborative projects. This paper seeks to enhance the learning process by helping instructors promote collaboration in their courses with computer-mediated communication.

COMPUTER-MEDIATED COMMUNICATION

Computer-mediated communication (CMC) is the study of human communication using computer systems. CMC is a tool used for engaging groups in time and/or place independent collaboration (5). The Systems Model of Groups provides a framework for the study of computer-mediated communication as a social system by which members of groups “create, exchange, perceive information, and engage in group activities via synchronous (real-time) or asynchronous (delayed-time) formats” (5). The Systems Model describes groups as complex, dynamic, and adaptive systems comprised of free interchange and communication within the environment (1), (5), (12). Components of the communication system are believed to affect one another and should be viewed holistically (5), (12). Communication along with the nature of the
group change when the environment is computer-mediated. Harasim (6) suggests this is because communication is influenced by attributes of the medium that impact transactions including place/time independence and text-based communication. These attributes have a profound effect upon group structure, process, and development (5).

Place and time independent communication is an attribute of computer-mediated communication with distinct benefits and drawbacks to the communication process. A major benefit is that CMC allows for collaboration between people who are geographically dispersed and located in varying time zones. CMC suites the schedules and residency constraints of busy professionals. Research suggests that CMC technologies can enhance learning and increase the affective experience by eliminating time and space constraints found in traditional face to face group interactions (4). CMC may benefit individuals by allowing time for reflection and thought composition before contributing to the group (5). However, individuals may feel disconnected, frustrated, and apprehensive when group members do not respond to their comments in a timely manner making it difficult to achieve group cohesiveness.

Another attribute of computer-mediated communication that affects the communication process is text-based communication. Text-based communication is believed to promote social equality (5), (11). Text-based messages promote the exchange of ideas, sharing multiple perspectives, and creation of interpersonal distance resulting in an equalizing effect on participation (15). Status development within computer-mediated groups is believed to be based upon influential messages rather than hierarchical status (e.g. gender, race, socioeconomic status, and physical features) (6). Freedom from the constraints of physical and social cues may serve to enable rich communication based on ideas rather than appearance (7). Computer-mediated communication increases active participation by group members who may otherwise be reticent (5). Although text-based communication may be viewed as an equalizing medium, it is not without its drawbacks. The absence of nonverbal cues can lead to misunderstanding which makes resolving conflicts difficult (6), (7). In addition, participants who do not believe they are good writers may be at a disadvantage when using text-based communication.

**PROJECT OVERVIEW**

Students are often thrust into group work with little or no guidance from instructors. Therefore, students often build an aversion to group work that bleeds into future job success. A common statement made by students is “it would be a lot easier to complete the project on my own rather than in a group.” This may be the truth; however, if we let our students take the “easy” route we are doing them a disservice. We must arm our students with the tools necessary to collaborate via computer systems. Members of groups offer varying information, perspectives, ideas, and opinions which leads to an integrated vision. Instructors should help students understand the benefits and limitations of CMC and provide collaborative activities in their courses. To help students practice and develop computer-mediated communication skills, I have integrated computer-mediated collaborative projects into several of my BIS courses.

“Short of placing students in the field of practice, how can formal education support an authentically situated approach to learning?” (17). Barab and Duffy (2) suggest the answer to this question is by using practice fields. Practice fields are controlled experiences that share
critical characteristics of the real practice. Collaborative projects provide a practice field for students to explore the nature of CMC in a non-threatening, educational environment.

The following examples include a collaborative writing project used in a graduate Business Communications course offered via distance education and a collaborative case study presentation used in an undergraduate Electronic Commerce course taught in-person. Both collaborative projects were computer-mediated using email, small group electronic mailing lists, and a course electronic mailing list. My experience in distance education led me to CMC for collaborative projects. Since students were geographically dispersed throughout the state of Utah, a face-to-face collaborative project was impossible. I was forced to find an alternative means for collaboration. I grappled with a variety of CMC mediums both synchronous and asynchronous and settled on electronic mailing lists (automated email management systems that accept email messages from individuals and redistribute copies to each member on the list). I selected electronic mailing lists over other mediums since they are prevalent in the business world and are easily accessible. Although geography forced me to employ CMC in my distance education courses, these experiences helped me realize the importance of integrating CMC projects into all my courses, whether in-person or via distance education.

The first example of computer-mediated collaboration involved a graduate level group writing project in a course titled Communications for Business (BIS 6150). This is a required course for all BIS graduate students at Utah State University. This particular course was taught via satellite distance education technology (also known as interactive television). Team writing in the business world accounts for a large portion of all business writing (3); therefore, students in this course were required to complete a long, formal business report as a group. In order to prepare students for their computer-mediated collaborative writing project, I facilitated a discussion on group structure, process, development, dynamics, and attributes of CMC. In addition, I spent considerable time discussing issues and concerns associated with participating in collaborative writing teams.

Group size was based on course enrollment and three to four students comprised each group. Small group electronic mailing lists (setup by the instructor and included only the members of the group) were used as the primary source of communication. Groups were asked to select a topic related to business information systems. Once the group selected the topic they emailed me the topic for approval. The group was then required to submit via email a detailed PREP outline indicating the purpose of the report (P), the expected initial reader reaction (R), the essential points of the message (E), and the presentation order (P). Once I approved the group’s PREP outline the collaborative writing began in earnest. The long, formal business report had to contain researched and documented facts and was to be prepared in full compliance with the Publication Manual of the American Psychological Association. The final product included an executive summary, title page, report body, tables, figures, and references. Once the long, formal business report was completed the group sent the executive summary to the course electronic mailing list (setup by the instructor and included all the students in the course including the instructor) and posted the entire paper on the course website in PDF format. At the conclusion of the collaborative writing project, students sent me an email evaluating their own efforts and the efforts of each team member. Team member evaluations were kept anonymous.
The second example of collaboration through CMC involved a case presentation in an undergraduate course titled *Internet Management and Electronic Commerce* (BIS 5700). This particular course was taught in-person at Utah State University Tooele campus. As with the aforementioned project, I led the students in a discussion on group structure, process, development, and dynamics. In addition, I helped students identify attributes, strengths, and limitations of computer-mediated communication.

Group size was determined by course enrollment and approximately three students were assigned to each group. Groups were assigned a case from the required course text book. The text book case studies consisted of a 1-2 page case pertaining to in-depth, real-world problems encountered by companies as they develop and implement electronic commerce. At the conclusion of each case was a set of 3-5 questions. Each team member was asked to read the assigned case and answer all the case questions on their own before discussing the case with the group. The group was then encouraged to discuss the case and questions with other team members via the small group electronic mailing list (setup by the instructor and included only the members of the group) and then consolidate their case answers. Once the team agreed upon the group’s case answers they were required to present their case to the entire class via the course electronic mailing list (setup by the instructor and included all the students in the course including the instructor).

Beginning at the midpoint of the semester each group was assigned a week to present their case. One case was presented each week for the duration of the course. The case presentation included a synopsis of the case, the case answers, and additional thought provoking questions. Once the case was posted, the group was responsible for facilitating a class discussion via the course mailing list for one week. This included posting follow-up questions to the class, sharing relevant resources, and keeping the class involved in the case discussion. Each student (who was not a member of the presentation team) was required to read the assigned case, answer all the case questions, and participate via the course electronic mailing list on each case discussion. As in the aforementioned project, I asked students to send me an anonymous evaluation of their own efforts and the efforts of each group member.

**SUMMARY AND CONCLUSIONS**

At the conclusion of these collaborative projects I asked each student to evaluate the CMC activities. In addition, I have spent considerable time reflecting upon the effectiveness of these computer-mediated collaborative projects. Four areas provide a framework for the discussion of student outcomes and skill development including task-oriented writing, building group cohesion, making decisions, and establishing procedures and roles.

*Task-Oriented Writing.* In both courses, students indicated that the CMC project helped them learn to write clear, concise, task-oriented messages. This writing style is often referred to as *business voice* and is characteristically “direct, controlled, reasonable, clear, personal but not self-centered” (3). This outcome corresponds with research that found CMC groups produce fewer messages than face to face groups (5); however, CMC groups exchange more task-oriented messages (9), (10). One student wrote, “Just the Facts Mam, I learned to get to the point and keep it short so everyone would read my messages.” Many students found task-orientated
writing to be a useful skill since busy schedules did not permit a lot of “wasted time.” Task-oriented writing helped the groups achieve the project goals in a timely manner.

**Building Group Cohesion.** As noted above, the CMC groups in my courses tended to focus on getting the job done. Yet, the purpose of groups is not only to ensure objectives are met but to build a cohesive group (16). Although many of my students considered off-task communication “wasted time,” research suggests it provides for group well being and member support (10), (13). Groups are comprised of unique individuals who must find ways of integrating their personality into discussions without being restrictive. Several student evaluations mirrored research that suggests positive interpersonal relationships can be developed in CMC groups and can foster sustained group associations (4), (18). These students indicated they had made friends at various sites and planned on working with them again. However, student evaluations were mixed on whether task-orientation was more valuable than building group cohesion. Some students preferred a more social group environment focusing on the process while others favored a task-orientated setting focusing on the product. These CMC projects forced students to recognize the importance of balancing task completion with group social maintenance.

**Making Decisions.** Students indicated that the most frustrating and rewarding part of the CMC project was figuring out how to make decisions in a text-based, asynchronous environment. In both graduate and undergraduate project examples, the groups coincided with research that suggests CMC groups have more difficulty reaching consensus than in-person groups (5), (8). Kiesler and Sproull (11) found CMC groups take up to ten times longer to make a decision. Student evaluations indicated patience and organization were vital to group decision making. Interestingly, most groups adopted some form of democratic decision making process. For example, one group set timelines for sharing contributions (i.e. ideas, facts, and opinions) relative to the task at hand. Once the contributions were submitted to the mailing list, the group set a voting date for the particular task. The votes submitted on-time were tallied and the results were considered final. These CMC projects helped students learn to make decisions as a group without the aid of verbal communication.

**Establishing Procedures and Roles.** The previous example emphasized how students found it necessary to establish procedures to assist the group in making decisions. Mennecke and Valacich (14) suggest that successful groups decide upon a mutual understanding of group roles, interactions, activities, and tasks. Students in my courses indicated that they spent a lot of time getting organized. However, they also indicated that once they were organized the group work went a lot smoother. The extra time spent comparing ideas, coordinating efforts, and establishing procedures takes patience, however, it is necessary to produce quality work. In addition to establishing procedures, students indicated a need to establish group responsibilities. “Discussions featuring evenly distributed participation, are what this medium fosters best. CMC does not lend itself to patterns of leadership and assumption of group roles that involve one person dominating the shared space for a long period of time” (5). Most groups sought to establish individual roles by dividing responsibilities among team members based on member preferences and strengths. Although, the groups were not required to assign a leader, I found most groups selected a manager based primarily on perceived organizational strengths (i.e. the person who at first seemed to keep the group on task). In both courses, the most successful
groups were those that paid particular attention to timelines, group procedures, and divided work fairly among team members based on individual strengths.

To prepare students for success in the business world, instructors must assist students in developing necessary skills to collaborate via computer systems. Through the integration of CMC projects into several of my Business Information Systems courses, I was able to help students practice and develop communicative skills necessary to collaborate in computer-mediated groups. Incorporating computer-mediated communication projects into course curriculum is not an easy task; successful collaborative projects require instructor commitment, time, and effort. Yet, the realized student benefits make the effort worthwhile.

REFERENCES


