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The Virtual Case Study: Using Computer-Mediated Communication in Group Problem Solving

Objective: To apply group problem-solving skills in a computer-mediated-communication environment.

Course: Small Group, Business and Professional Communication

In today's technologically advanced business world, organizations are increasingly relying on computer-mediated communication (CMC) in their day-to-day operations. Employees are teleworking instead of commuting to the office, business travel is being replaced by videoconferencing, and problem-solving sessions are moving from conference rooms to computer monitors. This major shift in how business is conducted in the "real world" poses a new set of challenges for effective group communication—challenges for which communication instructors should prepare their students. This activity offers one way in which communication instructors can address the challenges of CMC and achieve the goals of CMC education identified by Witmer (1998): to help students develop a conceptual and linguistic understanding of CMC, to help students develop rudimentary skills in CMC applications, and to show students how to use CMC in everyday work. Specifically, through this activity, students use CMC to achieve specific communication goals, practice their problem-solving skills, and analyze the underlying group communication principles involved in the process.

The Activity

The Virtual Case Study activity charges students with solving simple problems using only the communication technology designated for each respective scenario, and without any face-to-face contact. Therefore, to create an authentic CMC experience, the activity must be conducted outside of class time so that students do not have face-to-face contact with one another. In a class that meets for 50 minutes three times a week, the instructor should give groups release time from two consecutive class periods to work on their problem-solving scenarios. During this time, the instructor should be available to assist students by answering questions via e-mail and holding "office hours" in a designated chat room.

The activity can be used at any point during the course, but it works best during the unit on problem solving. Students should be placed in groups of 4–5

members and should work with the same group members on in-class and virtual problem-solving assignments so that they can get comfortable working with one another. Prior to assigning the activity the instructor should guide student groups in using an appropriate problem-solving technique (e.g., Dewey's [1910] reflective thinking model: define and analyze the problem, identify the criteria for the solution, generate possible solutions, evaluate solutions against set criteria, select and implement the best solution) in class so that students can gain familiarity with the process. This will give students an opportunity to practice their problem-solving skills in person and give them a point of reference against which they can compare their CMC experiences. If a course website is available, instructions should be posted there; otherwise, written instructions should be distributed in class. The class period before the Virtual Case Study activity is slated to begin, the instructor should review the activity requirements in detail and answer student questions. If they have not done so earlier in the semester, students should be given 10 minutes at the end of the class to exchange e-mail addresses and provide a list of all students' e-mail addresses to the instructor.

Because the focus of this activity is on using CMC to achieve a stated goal, simple scenarios should be used so that students do not get sidetracked by the complexity of the problem. Scenarios can be adapted from communication textbooks (e.g., Galanes, Adams, & Brillhart, 2000) or can be based on current events reported in campus newspapers or on local television news. (Sample scenarios appear in the Appendix.) Some scenarios that work well are common problem-solving activities such as deciding whom to hire among five qualified job candidates or making a recommendation to student government on how to address a current budget problem. One scenario should be provided for Virtual Case Study 1 and one scenario should be provided for Virtual Case Study 2. All groups solve the same two problems.

Virtual Case Study 1 uses *asynchronous* CMC. Asynchronous CMC, such as e-mail, does not require people to be logged on to the computer at the same time to communicate. During the class period in which the Virtual Case Study activity is first assigned, the instructor should identify one student from each group who will receive the scenario and let the selected students know the day and time the scenario will be e-mailed. E-mailing the scenario to each of the selected students an hour before class would regularly meet is recommended. In addition to the scenario, the instructor should also include suggestions for beginning an e-mail dialogue with their group members (e.g., "create a group address in your e-mail program and forward this message to everyone in your group") and

a reminder of the time and location of virtual office hours. The instructor should also request confirmation from the students who were sent the e-mail. If confirmation is not received, the instructor can contact other students as necessary

Virtual Case Study 2 uses *synchronous* CMC. Synchronous CMC, such as chat rooms, occurs in real time and requires people to be logged on at the same time to communicate. The course instructor should create and test chat rooms two weeks in advance of the activity to allow ample time for troubleshooting. Chat rooms can be set up on university-provided resources such as WebCT, a personal website using a free service such as QuickChat (<http://www.quickchat.org>), or commercial, Internet-based chat rooms such as Hotmail (<http://www.hotmail.com>). These services offer easy, step-by-step instructions for creating private chat rooms. Online help menus and computer support personnel on campus often can offer additional help if problems are encountered. The instructor should email all students the scenario and instructions for how to log on, including the necessary web addresses. Students are responsible for coordinating a meeting time among themselves.

In both Virtual Case Studies, groups solve the problems in the respective scenarios using a specified problem-solving technique. After the group completes both Virtual Case Studies, each group member writes a 4–5 page response paper that, using communication concepts and CMC terminology, briefly analyzes the communication processes in which the group engaged, reflects on the experience of solving both problems using different CMC applications, and identifies the benefits and drawbacks of CMC. Each group should submit one copy of the group's e-mail messages and chat room conversations.

Debriefing

In a 1000-point course, this activity is worth 75 points (i.e., 60 points for the response paper and 15 points for group participation). Students' response papers are compared against the hard copies of the groups' records of communication. Students are evaluated on their (1) analysis of what actually happened, rather than describing what should have happened, during the problem-solving process; (2) integration of communication concepts from the text and lectures; and (3) satisfactory participation in the problem-solving process, as evidenced by the e-mail and chat room messages.

As stated earlier, training students how to use these particular CMC technologies is not the sole purpose of this activity. This activity also is designed to teach students how to apply problem-solving skills and analyze the group communication principles involved in the

process. Furthermore, Lane and Shelton (2001) strongly recommended that in a balanced CMC pedagogy, students should be trained not only to use the technology, but also to evaluate critically CMC. Therefore, a formal debriefing of the Virtual Case Study activity should be held during the first in-person class meeting following the activity, which is also the class period in which the response papers are submitted. The instructor should ask students to share their observations of their CMC experiences, prompting them with questions such as:

1. What did and did not work well with using CMC to solve the problems?
2. What problems did you encounter using CMC?
3. What qualities of CMC made group problem-solving easier than in-person problem-solving?
4. What qualities of CMC made group problem-solving more difficult than in-person problem-solving?
5. What differences did you notice between synchronous and asynchronous CMC?

Once these questions have been answered, the instructor should guide the students in generating a list of practical suggestions for improving CMC problem solving. In addition to the CMC aspects, the instructor should lead a discussion of the problem-solving issues of the activity. Some sample questions include:

1. Aside from the technology, what challenges did you encounter with the actual problem-solving part of the assignment?
2. What was the most difficult stage of problem-solving for you? Why?
3. Did you experience any conflict in making the decision? If so, how did you resolve it?

Appraisal

Overall, this activity achieves its goal of giving students experience using CMC in group problem-solving situations and students generally react positively to the experience. Students learn to use effectively CMC technologies to achieve specific goals (other than socializing, which is why many students use CMC in the first place). This activity also provides an immediate, practical benefit. Given that students' school and work schedules typically are full and rarely compatible with others' schedules, it is often difficult to arrange meeting times to work on completing group assignments. Learning how to use CMC to accomplish group goals gives students a viable alternative to in-person meetings and allows students to contribute to their group's progress as well as work around their own schedules.

This Virtual Case Study activity can be modified to meet different learning objectives. One variation is to have students engage in other types of problem-solving activities. For example, students could develop a PERT chart or timeline for implementing a proposed solution. In addition to developing planning skills, this variation gives students practice using attachments and having multiple users edit a single document, which are two important skills needed in the business world. Another variation is to use these assignments as planning meetings for a larger project. For instance, if students have a major presentation at the end of the course, they could use these meetings to decide on a topic, brainstorm presentation ideas, and allocate responsibilities. A third variation is to use other communication technologies available on campus, such as teleconferences and videoconferences, to conduct similar problem-solving activities.

References and Suggested Readings

- Dewey, J. (1910). *How we think*. Boston: Heath.
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- Lane, D. R., & Shelton, M. W. (2001). The centrality of communication education in classroom computer-mediated-communication: Toward a practical and evaluative pedagogy. *Communication Education* 50, 241-255.
- Witmer, D. F. (1998). Introduction to computer-mediated-communication: A master syllabus for teaching communication technology. *Communication Education* 47, 162-173.

Appendix

Scenario A. The Public Relations Student Society of America chapter conducted several fundraisers to cover their anticipated expenditures: defraying the expenses of 5 members attending the national conference (\$500), providing a scholarship to the outstanding senior (\$500), hosting a spring party for students and faculty (\$350), and purchasing supplies (e.g., brochures, paper, folders, photocopies, postage) needed to conduct chapter business (\$150). Unfortunately, they only raised \$1,100. How should the chapter allocate its funds?

Scenario B. In class, students were assigned to small groups that will work throughout semester on a series of graded projects. About halfway through the semester, Chris, a smart, friendly, and hard-working group member, missed almost three weeks of class due a family emergency. During Chris's absence, the largest project was started and completed. Normally, all group members receive the same grade. However, the groups do have the option to shuffle some of the points between members if they can justify that there was unequal contribution from the members. What do you recommend that the group do?

Scenario C. Your company is hosting a golf outing for its sales representatives to celebrate the end of a successful quarter. Everyone was eagerly awaiting a day of golf, but when you arrive at the golf course, you are told, "Tuesday is a Men Only golf day." The sales manager looks at the sole female sales representative, who says, "Don't worry. Go ahead without me." You realize, however, that the golf outing is more than just a social event. It is also an opportunity for sales representatives to build mentoring relationships with managers. What should the group do?

Scenario D. The cooperative house in which you live has a \$500 budget surplus and needs to decide how to spend the money. Some members want to throw a party. Some members want to buy a DVD player and update the house's movie collection. Other members want to invest in new paint and blinds for the bedrooms. The executive board put together a small group of house members to investigate the options and make a decision. What should the group recommend?

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