Using Interaction in Online Discussion Boards

Successfully fostering interaction in online courses requires incorporating both instructional and social types of interaction in discussion boards

By **Margie A. Martyn**

As offerings of online courses, programs, and degrees continue to increase,[1] universities are grappling for ways to assess and assure quality. The quality and quantity of interaction between faculty and students and among students constitutes a significant component of the definition of quality for any course, whether online or face-to-face.[2] It seems a reasonable hypothesis, therefore, that focusing on a component of online learning that encourages and supports interaction—namely, discussion—might produce satisfied students who demonstrate significant learning outcomes.

Online discussions have many dimensions, from their structure to timely feedback and assessment. Productive discussion does not happen automatically—it must be planned. Best practices for discussions[3] include the following elements:

- Require students to participate
- Grade student efforts
- Involve learning teams
- Structure discussions
- Require a hand-in assignment (a deliverable)
- Pose questions and scenarios that require learners to use their own experience
- Relate the discussion to course objectives

The study summarized here aimed to determine if significant differences in learning outcomes existed between two sections of the same course, one taught as an online course for 15 weeks and the other taught in the traditional format of face-to-face, three-hour classroom meetings once per week for 15 weeks. Results from this study suggest strategies for implementing discussion to increase student interaction, satisfaction, and learning outcomes.

Methods

The study involved two sections of an Introduction to Management course during the spring 2005 semester at a small liberal arts college in the Midwestern United States. The same professor taught both the online (n = 18) and face-to-face (n = 16) sections, using the same text, instructional strategies, and assessments. The final exam served as the measure of student learning because the assessment was comprehensive and required students to synthesize all of the concepts covered in the course. In addition, both sections filled out a perception survey regarding the use of discussion when they took the final exam.

Each week, the groups read and discussed a business case study directly related to the course material, first in small groups and then in a larger group context. The online class received the case study and corresponding questions electronically through the course management software. The students had to read the case, meet in small groups and discuss it, and then post answers to questions provided by the instructor. The small groups used the group feature of Blackboard, in which they could hold synchronous chats and online discussions and post documents as a group. Each class member made individual posts in response to the group posts.

The face-to-face class received a hard copy of the business case and corresponding questions the week prior to the discussion. On the day the case was discussed, the students met in small groups to review the case and answer the questions. Afterwards, the entire class met and responded to the ideas developed by the small groups.

Best practices were applied to the discussions for both the online and face-to-face groups. With case studies as a starting point for discussion, students had the opportunity to interact frequently with the course content, the instructor, and other students. Specifically, the students were required to participate in the case study discussion, which was worth 15 percent of the total grade. The cases posed questions and scenarios that required students to use their

own experience, and the topics related to the course content in the text and ancillary materials for that week.

Although the groups were neither randomly selected nor randomly assigned, there were no statistically significant differences in demographics between them. The majority of students in both groups were adults attending college on a part-time basis. In the online class, 72 percent were female, while in the face-to-face class, 56 percent were female. The average age of students in the online class was 35 years, while the average age in the face-to-face class was 28 years. The average number of semester hours completed was 72 in the online class and 58 in the face-to-face class. Both averages fit the college's "junior" status. The incoming grade point average was 3.24 for the online students and 3.28 for the face-to-face students. Finally, the students were tested for their preferred learning style by having them complete the Learning Modality Preference Inventory.[4]

Findings

The learning style preference had no correlation to success in the course. This finding is consistent with Neuhauser,[5] who found that "… there was no relation between the preferred styles of learning and final grades in either group." Her study focused on the impact of demographic differences (rather than instructional strategies) on learning outcomes between two groups of 25 face-to-face students and 37 online students.

The one statistically significant finding in the study was that online students scored lower on the final exam than the face-to-face students ($t_{(34)} = -2.601$, $p < .017$). The mean score for the online group (164.72) was less than the mean for the face-to-face group (181.56). This finding contradicts other research showing that online students often perform as well as or better than face-to-face students.[6] Complete research results and data analysis can be found at <http://www.bw.edu/~mmartyn/scholarship.htm>.

To better understand this finding, data from the student perception survey were reviewed. Analysis of that data showed that the mean scores were higher on all of the quality perception survey questions for the face-to-face class; however, the scores were very positive for discussion in both groups. The student comments from the online group, however, indicated that although they learned from their interaction with other students, they regretted that they did not get to know each other better.

Much research describes the instructional benefits of online discussion, but an equally important advantage derives from establishing rapport and collaboration among class members. Although this happens naturally in a face-to-face course, capabilities supporting the development of rapport must be deliberately integrated into an online course. Discussion can support both social and instructional aims if properly planned. Gilbert and Moore[7] agreed with this duality of purpose, noting that social rapport and increased collaboration can lead to greater levels of interaction addressing instructional goals. According to the study, the social function of interaction was not integrated well in the online group. That lack might explain the lower learning outcomes for the online students.

Recommendations

The use of interaction in face-to-face class discussion and in online discussion is a valuable instructional approach that follows the best practices of discussions. As the study showed, it is important to allow students in online classes to interact in a variety of ways by integrating both instructional and social interaction, to provide the best possible learning environment. More research is needed on discussion specifically to better understand its power for increasing interaction, satisfaction, and student learning outcomes.

Endnotes

1. I. E. Allen and J. Seaman, *Entering the Mainstream: The Quality and Extent of Online Education in the United States, 2003 and 2004* (Needham, Mass.: The Sloan Consortium, November 2004), <http://www.sloan-c.org/resources/entering_mainstream.pdf> (retrieved September 20, 2005).
2. I. E. Allen and J. Seaman, *Sizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002 and 2003* (Needham, Mass.: The Sloan Consortium, September 2003), <http://www.sloan-c.org/resources/sizing_opportunity.pdf> (retrieved September 20, 2005); Institute for Higher Education Policy, *Quality on the Line: Benchmarks for Success in Internet Distance Education* (Washington, D.C.: Institute for Higher Education Policy, April 2000), <http://www.ihep.com/Pubs/PDF/Quality.pdf> (retrieved September 20, 2005); and Ohio Learning Network, "Quality Learning in Ohio and At a Distance," A Report of the Ohio Learning Network Task Force on Quality in Distance Learning, December 2002, <http://www.oln.org/about_oln/pdf/Quality_TF.pdf> (retrieved September 20, 2005).
3. N. Chism, *Handbook for Instructors on the Use of Electronic Class Discussion*, Ohio State University, 2000, <http://ftad.osu.edu/Publications/elecdisc/pages/index.htm> (retrieved September 20, 2005); M. Martyn, "Computer-Mediated Communication: A Quest for Quality," in *Best Practices in Adult Learning*, L. Bash, ed. (Bolton, Mass.: Anker Publishing Company, Inc., 2005), pp. 173–196; and K. M. Peters, "Concrete Steps for On-Line Discussion," *OTLNewsletter*, August 29, 2000, <http://booboo.webct.com/otln/Asynchronous_Strategies.htm> (retrieved September 20, 2005).
4. Learning Modality Preference Inventory, 1999, <http://homepages.wmich.edu/~jmcgowan/CTE344/session3/Modalityinventory.pdf> (retrieved September 20, 2005).
5. C. Neuhauser, "Learning Style and Effectiveness of Online and Face-to-Face Instruction," *The American Journal of Distance Education*, Vol. 16, No. 2, 2002, pp. 99–113; see p. 109.
6. J. B. Arbaugh, "Virtual Classroom Versus Physical Classroom: An Exploratory Comparison of Class Discussion Patterns and Student Learning in an Asynchronous Internet-Based MBA Course," *Journal of Management Education*, Vol. 24, No. 2, 2000, pp. 207–227; M. Martyn, *The Effect of Online Threaded Discussion on Student Perceptions and Learning Outcomes in Both Face-to-Face and Online Courses*, doctoral dissertation, The University of Akron, Ohio, 2004, listed in *Dissertations Abstracts International*, Vol. 65, p. 478; and Neuhauser, 2002, op. cit.
7. L. Gilbert and D. R. Moore, "Building Interactivity into Web Courses: Tools for Social and Instructional Interaction," *Educational Technology*, Vol. 38, No. 3, 1998, pp. 29–35.

Margie Martyn (mmartyn@bw.edu) is Assistant Professor, Math and Computer Science Department, at Baldwin-Wallace College in Berea, Ohio.