Student Involvement in Computer-Mediated Communication: Comparing Discussion Posts in Online and Blended Learning Contexts

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Abstract
This study compares the nature of student-to-student online discussion participation in a course provided in a strictly online format to a blended course (traditional face-to-face classroom time with an online component). Prior research has documented the benefits of student-to-student discussion of course material for student learning, performance in courses, and satisfaction with the educational experience. Data for this study was collected from four identical discussion threads from online and blended sections of an upper division communication course. The length of students’ initial responses to the discussion probes was greater initially for the blended class, with the online class matching and surpassing the blended class in later conferences. However, the blended class consistently and significantly surpassed the online class in the number and length of subsequent postings to conferences (representing their responses to other classmates’ posts). These results are discussed in terms of practical advice for structuring effective online discussions in virtual learning environments – both fully online and blended formats.

Keywords: Blended Learning, Online Learning, Computer Mediated Communication, Student Participation

1. Introduction
Online learning has surged in higher education in the past decade (Wallace, 2003). Blended learning environments are also increasing in popularity in higher education, with many campuses “experimenting with ‘hybrid’ or ‘blended’ models of teaching that replace some in-person meetings with virtual sessions” (Young, 2002, p. A33). Thus, computer-mediated communication (CMC) has become an integral part of many contemporary classrooms. This study thus explores students’ asynchronous discussion posts in both an online course and in a blended course in terms of the quantitative patterns of students’ contributions.

The use of communication technologies in classrooms has been championed as the latest innovation for student-centered learning (Sandholtz, Ringstaff, and Dwyer, 1997). “The benefits of technology integration are best realized when learning is not just the process of transferring facts from one person to another, but when the teacher’s
goal is to empower students as thinkers and problem solvers” (Sandholtz et al., 1997). This assertion raises questions about how students involve themselves differently in courses that implement communication technologies to varying degrees such as in fully online courses when compared to blended learning environments. Even though research supports the importance of learner-learner interaction (Hiltz and Wellman, 1997; Wegegrif, 1998), teachers typically ask most of the questions in classrooms, with student questioning and interactions between learners a rarity (Brooks and Brooks, 1999). In higher education specifically, traditional face-to-face courses are often designed in a lecture format with minimal student response opportunities. Because blended courses include some face-to-face classroom time, teachers and students may be more apt to fall into traditional teacher-centered roles, situating students as passive receivers of content as opposed to involved participants in student-centered discussions. Online courses, in comparison to blended courses, may function as more student-centered environments, requiring students to be more self-directed in their learning and providing them with more opportunities to get involved in discussion with their classmates and teacher. Indeed, the teaching approaches and contextual factors typical to different kinds of learning environments may influence how students engage with one another.

The social processes at play in differing learning contexts appear to vary in some notable ways. Students in blended learning contexts report feeling a stronger sense of community than in courses held completely online or in face-to-face classrooms (Rovai and Jordan, 2004). That students’ feelings of belonging with others in the class are higher in blended courses raises questions about the source of that sense of community. Students may feel more connected because of the learning context itself, and having the ability to interact with one another via different communication channels. It is also possible that students’ choice to enroll in online courses may actually reflect a relatively lower desire for the social experience of the classroom, which may result in a corresponding lack of desire to interact with other students or to be a part of a learning community. Regardless of the source of the community experience, feelings of inclusion in a community of classmates may influence how students involve themselves in discussions with those peers.

Prior work in the area of computer mediated communication (CMC) provides a framework for understanding the factors that influence students’ discussion participation. CMC, or the interaction online between people (Althaus, 1997), occurs when people utilize computer-based communication technologies in their social engagements. In education, an asynchronous learning network (ALN) (Benbunan-Fich and Hiltz, 1999) is often utilized to support CMC that takes place at students’ and teachers’ convenience. Asynchronous online discussions, in contrast to synchronous or “live” online conversations, allow participants to post contributions when they are prepared and ready to do so, and are the focus of this study.

Research has explored some of the characteristics that make CMC attractive for certain individuals. Morahan-Martin and Schumacher (2000), for example, found that some people find online engagements socially liberating. Computer mediated communication “often affords people a degree of anonymity. . . and protection from possible ostracism and ridicule. . .” (McKenna and Bargh, 1999, p. 254). Students, in particular, sometimes prefer engaging with others online because they perceive
themselves as lacking in interpersonal management and self-presentational skills (Caplan, 2005), or because they consider themselves to be generally reticent (Kelly, Duran, and Zolten, 2001). Thus, students with anxieties may find that courses capitalize on their skills differently, depending on the course format. Online and blended courses may each uniquely appeal to particular students which may, in turn, influence the class discussions that take place within that context.

A blended course format may provide some students an optimal learning experience because of the ways in which different communication channels are utilized and integrated into a single classroom experience. McEwen (2001) suggested that “the blending of online and traditional instruction, offers a richer learning environment than either one offered alone” (p. 103). Some research has indicated the possibility that certain communication channels inform others, i.e., that the face-to-face channel might influence online engagements and vice versa. Vess (2005), for example, found that “two-thirds of the 2005 hybrid class students said that the online postings made them feel more comfortable talking in class” (p. 361). While she found that CMC affected her students’ involvement in face-to-face meetings, her research raises the possibility that face-to-face classroom time may influence students’ online engagements. A blended course is a unique locus to investigate the ways in which that dynamic might occur.

In summary, prior research has noted the growth in the number and variety of courses integrating and online component, and has speculated about factors likely to affect student interactions patterns in such courses. Working from the assumption that student involvement is a primary goal in contemporary classrooms, this study explores how course format influences student engagement in online discussion. By focusing on the number and length of student asynchronous discussion posts, this study explores student involvement across blended and fully online course formats.

RQ1: To what degree do students contribute to online asynchronous discussions in online and blended courses?

RQ2: How do students’ contributions to asynchronous discussions compare in terms of initial contact (responses to the teacher) to subsequent postings (responses to the other students) in each learning context?

2. Methods

All participants (N = 49) were enrolled in upper division sections of a conflict and communication course at separate universities in the Spring 2006 semester, taught by the same female Associate Professor. Students in the online section (N = 23) were assigned to groups of 7-9 members to engage in approximately 10 conferences throughout the semesters, cumulatively worth 25% of their grade. The blended class had an enrollment of 110 students, who were assigned to groups of 8-11 members for seven online discussions, worth 35% of their grade. Three of the groups (combined N = 26) from the blended course were randomly chosen to compare to the three groups from the fully online course.

The grading criteria for participation in these discussions as “conferences” were the same for both classes. All conferences lasted one week. Four of the conferences in these two classes were identical, and were the basis for the analyses of this study.
Three of these conferences referenced posted articles from magazines of newspaper and asked students to summarize the main points, and then offer their own perspectives. The final conference simply asked student to relate their own experiences with a course concept.

Each participant’s postings for each conference were loaded into a word processing program. Words and character counts were computed first for initial posts (the first time the student responded to the instructors’ posted questions) and then for all subsequent posts (additional posts in which students responded to each others’ postings or elaborated on their own previous posts).

3. Results

The first research question probed the nature of students’ contributions to online discussions. The data revealed that while almost all students posted an initial response to all of the conferences ($M = 46$), fewer posted any subsequent posts ($Range = 34-37, M = 38.5$). Those that did so made an average of 2.56 ($SD = 1.65$) subsequent posts. Across all conferences, the length of initial posts ($M$ number of words = 293.77, $SD = 147.98$) was greater than the combined length of all subsequent posts ($M$ number of words = 251.78, $SD = 199.66$).

The second research question asked whether course format (blended versus online) affected students’ contributions to online discussions. T-tests were computed comparing the online students to the blended class students in their contributions to each conference. The required alpha level was adjusted for the number of tests (.05/12 = .004). As far as the initial posts, the only significant difference between the groups emerged for the fourth conference ($t (46) = -4.40, p < .001$), such that the online students ($M$ number of words = 406.65, $SD = 122.09$) made lengthier contributions than the students in the blended class ($M$ number of words = 266.60, $SD = 98.15$).

However on subsequent posts, students in the blended class ($M$ # of subsequent posts = 3.06, $SD = 2.08$; $M$ number of words = 359.17, $SD = 199.90$) posted significantly more numerous ($t (36) = -3.95, p < .001$) and longer ($t (36) = -4.55, p < .001$) posts on Conference 2 than did the online students ($M$ # of subsequent posts = 1.36, $SD = .63$; $M$ number of words = 104.12, $SD = 77.80$). For Conference 3, students in the blended class ($M$ # of subsequent posts = 3.22, $SD = 1.62$; $M$ number of words = 341.57, $SD = 192.78$) posted significantly more numerous ($t (31) = -3.44, p < .001$) and longer ($t (31) = -3.74, p < .001$) posts than did the online students ($M$ number of subsequent posts = 1.40, $SD = .52$; $M$ number of words = 105.00, $SD = 74.69$).
Table 1: Means on Initial Discussion Board Posts

Table 2: Means on Subsequent Discussion Board Posts
The same pattern emerged for Conference 4: Students in the blended class (\(M\) number of subsequent posts = 3.60, \(SD = 1.66\); \(M\) number of words = 288.44, \(SD = 187.96\)) posted significantly more numerous (\(t (44) = -4.61, p < .001\)) and longer (\(t (44) = -4.17, p < .001\)) posts than did the online students\((M\) number of subsequent posts = 1.76, \(SD = .83\); \(M\) number of words = 109.05, \(SD = 63.19\). Tables 1 and 2 provide a graphical comparison of the initial and subsequent posts for the two classes.

3. Discussion

Our findings painted a nuanced picture of the nature of student contributions to online discussion groups. Taken together, the asynchronous discussions elicited considerable student productivity. Between initial posts and subsequent contributions, students on average generated 500-600 word responses to these discussion prompts, the equivalent of a two-page paper. While students in both class formats were comparable in their initial responses to all but one of the conferences, students in the blended class posted significantly more frequent and extensive subsequent posts to the ongoing discussion with their online group members.

There are several perhaps complementary explanations for our findings. Certainly, students likely self-select into different kinds of classroom experiences based on their preferences and resources (both temporal and cognitive) which affect their levels of participation in the class. Also, the two formats clearly offer different experiences, despite being on the same topic and taught by the same instructor. It is quite possible that the dynamics within the face-to-face component of a blended course, such as exposure to the teacher, social pressure to perform, and diminished anonymity in blended courses, motivate students to engage more in the online forum.

Our findings can also be understood as reflecting two distinct contexts: one more teacher-centered and the other more student-centered. That is, students’ initial posts were in response to the teacher’s discussion question and the subsequent posts were in response to other students. Thus, subsequent discussion posts can be understood as students’ engagements in student-centered learning which, research indicates is valuable. Brooks and Brooks (1999) articulated that when “student-to-student interaction is encouraged . . . students are more likely to take risks and approach assignments with a willingness to accept challenges to their current understandings” (p. 10). In this same line of thinking, Saunders and Klemming (2003) assert that hybrid teaching, or utilizing an online forum as part of a face-to-face class, can increase the amount of learning that is student-led as opposed to teacher-led. To that end, the subsequent posts may be a barometer the degree to which student-to-student learning is (potentially) occurring.

Our study was subject to some notable limitations. Only one section of each type of class format was sampled, and our findings may be idiosyncratic effects of the selected class sections, courses, universities, and/or the instructor. Also, focusing on the quantitative aspects of students’ contributions provides a narrow assessment. We do not propose that quantity of contributions should be privileged over quality. However, online “discussion” necessarily implies multiple engagements and ongoing, maintained involvement. So, there is value in exploring the differences in quantity of postings and their contributing factors. Future research should explore the qualitative differences in contributions to asynchronous discussions across course formats.
Regardless of the reasons for the differences, the level of productivity in the blended class shows the unmet potential for online courses. Our findings are in stark contrast to an unspoken expectation that faculty may have about online classes: That students will compensate for the absence of face to face time with substantial online contributions. On the contrary, many online students instead may believe they need only to devote a single burst of productivity per week to the class. Indeed, one of the draws of online education for students is its flexibility, so instructors may be reluctant to include specific requirements as the timeline and frequency of students’ contribution to the class. To the extent that instructors believe that ongoing student-to-student interaction is an important social and pedagogical component of online classes, they must take steps to overcome the apparently significant disadvantage of the online-only format for fostering this valuable dynamic.

4. References


