Frequency and Time Investment of Instructors' Participation in Threaded Discussions in the Online Classroom

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Abstract

The movement into online education has raised concerns about the workload demands placed on faculty teaching online classes. Research indicates that faculty report a greater time investment for online classes than for equivalent face-to-face courses; concerns about time investment are compounded with the considerable ambiguity surrounding the perceived availability of faculty teaching in a 24/7 online environment. The continuous, open nature of the virtual classroom raises a host of questions surrounding the frequency of instructor interaction, timing of interactions, and an instructor's availability to students. One of the most popular and pedagogically effective forms of virtual classroom interaction is via threaded discussions. The purpose of the current study was to examine frequency and time investment of an online instructor's participation in course-specific threaded discussions in order to provide a more accurate picture of the faculty investment in the ongoing facilitation of an online course, independent of course development. Results indicated considerable variability in both frequency and time investment of threaded discussion participation. While research indicates the threaded discussions are a very effective means of promoting active involvement with course materials, it appears as though there is little consistency among experienced online instructors as to the instructional investment required to take advantage of the educational gains available through this type of electronically-mediated instruction.

Introduction

The merge of the Internet with the educational sector has seen a proliferation of distance education programs; as evidence, enrollment in distance education courses is estimated at over 2,876,000 students (National Center for Education Statistics, 2001). With the continued growth of distance education, as well as the movement of traditional institutions to supplement face-to-face offerings with online and hybrid courses, an increasing number of faculty are transitioning to the online teaching environment. The movement into online education raises questions about the workload and time demands required for faculty engaged in online teaching. While it is commonly known that online instruction requires a significant investment of time to prepare, design, and review course structure as well as to implement alternative teaching techniques and assessments (Lim, 2001), research is needed to examine faculty time investments for facilitating the ongoing instruction and interaction within online courses (DeVries & Lim, 2003).

Research indicates that online teaching requires more time and effort than face-to-face teaching (Berge, Muilenburg, & Haneghan, 2002; Cavanaugh, 2005; Hartman, Dziuban, & Moskal, 2000; O'Quinn & Corry 2002; Pattillo, 2005; Sellani & Harrington, 2002; and Schifter, 2000). Contributing to the increased time demands is the preplanning involved in online course development as well as the instruction and mastery of necessary technological skills. Specifically, online instruction requires more deliberate planning of learning outcomes, activities, and support (DeVries & Lim, 2003) in order to facilitate the organization of course

content within the available technological delivery medium; the end result of this preplanning is increased time available for course facilitation.

Additionally, the online instructor must gain assurance and proficiency in using the Web as the primary communication between teacher-student, learn to successfully teach without the use of body language, and evolve from the role of content-provider to content-facilitator (Williams & Peters, 1997). When one considers the number of new instructional skills that must be mastered, it is no surprise that many faculty report a greater time investment for the initial switch to teaching in an online environment.

A key issue not addressed by the current research involves the differentiation of faculty time investment for online course *development* compared to online course *instruction*. The initial shift from presenting course material in a face-to-face format to the online classroom undoubtedly takes a considerable amount of time. Once the prerequisite course materials are in place, however, the time required for maintenance of course materials drops off significantly. In addition, novice online instructors devote a portion of their teaching time mastering the relevant technological skills to effectively facilitate the course. Weighing these considerations, the amount of time required by an experienced online faculty member who is facilitating an existing course may be substantially different than an instructor new to the virtual classroom or for an experienced online instructor who is simultaneously engaged in online instruction and course development. The focus of the current study is on the frequency and time investment of experienced online instructors teaching established virtual courses. As such, emphasis is placed on the frequency and time investment of an instructor's *facilitation* of online course interaction.

There are various forms of interaction used to facilitate learning in the virtual classroom: instructor-student (email, chat, threaded discussion, feedback, grading, etc), student-student (email, chat, threaded discussion, etc.), and student-content (lectures, readings, assignments, etc). Constructivist theory emphasizes the social participation structure of online classes as an important factor for online learning (Farahani, 2003). Consistent with this view, online course delivery is dramatically different than correspondent-type courses (even those delivered via the Internet) as online courses promote social interaction via the ongoing discussion of relevant course concepts. It is this "live" interaction that demands ongoing instructor participation and course facilitation. Within most online course delivery systems, asynchronous, threaded discussions are the predominant tool for promoting social exchange, interaction, and discussion of course concepts. The instructional value and educational importance of threaded discussions are highlighted by a number of studies that emphasize the vital role of asynchronous, threaded discussion interaction for promoting critical thinking in online courses (Astleitner, 2002; Bruning, 2005; Collison, Elbaum, Haavind, & Tinker, 2000; Driscoll, 2005; Hanna, Glowacki-Dudka, & Conceicao-Runlee, 2000; MacKnight, 2000; Muirhead, 2002; Murchu & Muirhead, 2005; Peirce, 2003; and Walker, 2005). While the value of threaded discussions within an online course is clearly established, there is little research to indicate how much time a faculty member must invest to facilitate learning via the online discussions. Specifically, for a faculty member new to the virtual classroom, there is minimal empirical information to guide the frequency and nature of the asynchronous discussions, making it difficult to get an accurate prediction of the time investment involved.

Concerns about time investment are compounded with the considerable ambiguity surrounding the perceived availability of faculty teaching in a 24/7 online environment. A case study report found that teaching the online version of one sample course required more than twice the amount of time than the same course in class (Pattillo, 2005). Unlike a scheduled face-

to-face class in which there are pre-set constraints on the timing of a class period, office hours and instructor work-day, the continuous, open nature of the virtual classroom raises a host of questions surrounding the frequency of expected instructor interaction, the timing of interactions, and an instructor's availability to students. Ryan (2000) observes: "Interaction with the online instructor using e-mail, telephone, or chat demands greater efficiency than open oral discussion, and therefore is more limited. This is perhaps the greatest limitation of the online delivery method. Almost all online participants felt that this was the greatest weakness of the class" (p. 82).

Recent findings (Farahani, 2003) revealed that instructors participating in email communication and providing online feedback to student work as the two most important aspects of online interactivity. However, according to a study by Gagne and Shepherd (2001), "students in the online course indicated that they were less satisfied with instructor availability than the in-class students" (p.58). As such, while instructors may feel they are providing adequate one-on-one interaction via email and feedback, students are demanding a greater level of facilitation in the daily interactions. The problem is likely compounded by the ambiguity surrounding when instructor-student interaction will take place. While face-to-face students are accustomed to waiting until scheduled class periods to ask questions and receive feedback, students in the online class are more likely to expect the instant, continually-available interaction simulated by the limitless nature of the Internet. This dichotomy between instructor availability and expectations of interaction in online courses may lead to increased frustration for both online students and instructors.

The purpose of the current study was to examine frequency and time investment of an online instructor's participation in course-specific threaded discussions in order to provide a more accurate picture of the faculty investment in the ongoing facilitation of an online course, independent of course development. It is important to note that an examination of faculty's investment in threaded discussions is only one aspect of online course instruction; as such, this study does not attempt to provide an overall picture of instructional tasks or the overall time required for online course instruction. The focus on an instructor's participation in threaded discussions was selected due to the ambiguity surrounding the frequency and time investment for implementation of this important pedagogical feature.

Method

Participants

Within an established online, undergraduate program, student course evaluations were used to determine classes that were rated as "highly effective in promoting understanding of course material." Of the 472 undergraduate, online sections of classes offered in the target term, 67 met this criterion; 10 of these courses were randomly selected for inclusion in the study. Instructors from all selected courses provided email consent to utilize archival course data for analysis. Of the 10 courses selected for further analysis, the maximum course size was 25 students with a mean course size of 22.45 students. The target courses represented a range of disciplines: social sciences (N=2), natural sciences (N=1), business (N=3), technology (N=2), liberal arts (N=1), and education (N=1). Courses also examined a range of student levels: introductory (N=6) and advanced (N=4). All selected courses utilized a consistent pedagogical approach to the integration of threaded discussions in which course requirements mandated student participation in one threaded discussion per week. This discussion required students to respond to an initial question as well as post follow-up peer responses.

In the current sample, online course development is clearly differentiated from online course instruction. At the target university, all online courses are completely developed, approved, and provided to the instructors, who then must facilitate and teach the provided content. As such, the current study does not investigate time commitments for the development of course content, integration of course content with technology, or mastery of online delivery techniques. The study focuses solely on instructor time commitments for threaded discussion facilitation of an existing online course.

Materials and Procedures

Using archival course records, each of the 10 courses were examined for mean number of faculty posts per threaded discussion, the mean number of days per week of faculty interaction, and the mean faculty time spent on discussion activities (as indicated by login time provided via the course delivery system). It is important to note that the login time for faculty participation for threaded discussions should be used as an estimate only. The course management system records login time as the time that a faculty member was logged in to the link, but does not differentiate between active or idle time; as such, time estimates may be inflated due to periods of idle use.

Results and Discussion

An in-depth analysis of 10 randomly selected courses was conducted to determine the mean number of days per week of faculty interaction, the mean number of faculty posts per threaded discussion, and the mean faculty time spent on discussion activities. Table 1 provides mean summary data for these three factors within the target sample of courses. Instructors in the target sample logged into the threaded discussions a mean of 5.46 (SD = 0.71) days per week and spent, on average, a mean of 3.12 hours (SD = 1.39) or 187.00 minutes (SD = 83.16) per week in discussion activities.

Table 1: *Mean number of faculty posts per threaded discussion, faculty time spent on discussion activities in minutes, and number of days per week of faculty interaction*

Instructor	Weekly Posts	Weekly Discussion Time	Days Per Week of Interaction
A	4.38	277.50	4.75
B	12.75	80.25	4.75
C	7.50	125.75	6.63
D	7.88	409.13	5.50
E	0.50	47.25	4.25
F	6.25	108.38	6.00
G	0.00	174.00	6.88
H	4.50	28.25	5.00
I	2.00	169.25	4.38
J	22.25	450.25	6.50
Overall Mean	*6.80*	*187.00*	*5.46*

If one were to compare threaded discussion interaction time in the online class as an approximate equivalent to scheduled class time in the face-to-face classroom, it would appear that instructors are spending *less* time in the online threaded discussions than in the traditional counterpart (this study examined interaction in an accelerated, 8-week online class, so an equivalent face-to-face classes would have met for approximately 6 hours per week). Despite

common theoretical equivalence between threaded discussion interaction and traditional classroom "seat time" interaction (a comparison that has been met with criticism and concern, see Meyer, 2004), one must consider that instructional activities that would typically happen during a scheduled face-to-face class period (such as listening to lectures, completing activities, quizzes, tests, groupwork, etc.) are happening outside the confines of the threaded discussions in an online course. Online instructors are undoubtedly investing a considerable amount of time completing additional teaching duties (responding to emails, answering questions, grading, feedback, facilitation of student-student interaction, etc.) within the scope of their online courses. As such, while these findings shed important light on the time investment required to effectively facilitate online discussion activities, they should not be misconstrued as a comparison between the overall time investment required to teach online versus face-to-face.

Another important consideration of the time commitment required to teach online involves the 24/7 nature of the virtual classroom compared to the scheduled 5-day work week of the face-to-face classroom. As indicated previously, instructors in the target courses logged into the online classroom a mean of 5.46 days per week; a figure which echoes the schedule of face-to-face classes despite the 24/7 availability of online courses. Additional analysis indicated that faculty spent the most time in the discussion threads on Monday (m = 96.46 minutes) and Tuesday (m = 89.40 minutes) with the least amount of interaction occurring on Friday (m = 68.61 minutes) and Saturday (m = 52.29 minutes). Figure 1 shows the complete breakdown of interaction by days of the week.
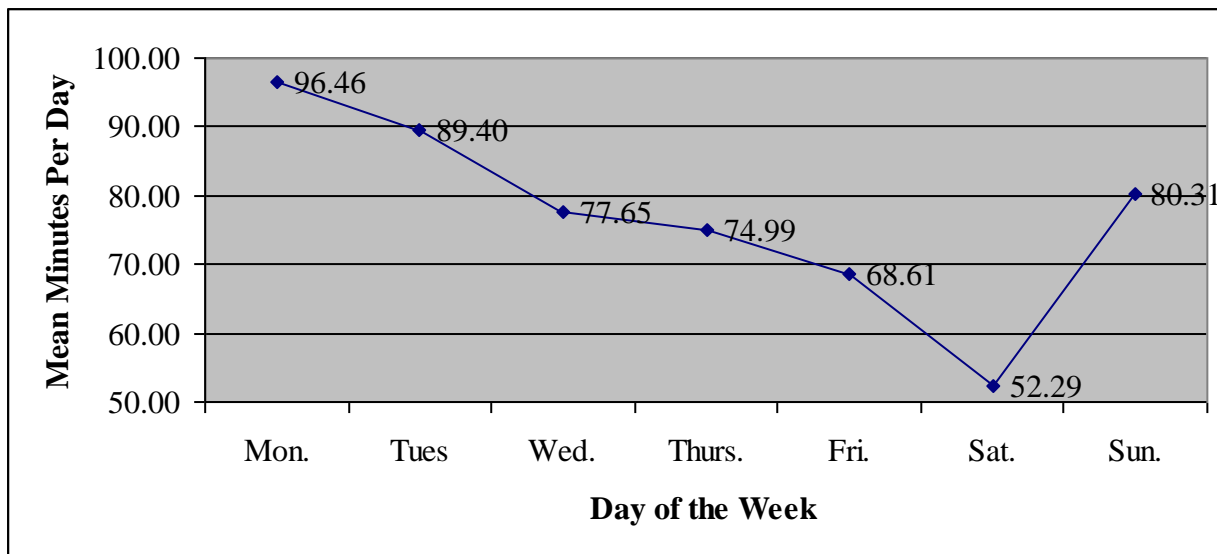

Figure 1. Mean minutes of instructor interaction by day of the week

This distribution of workload indicates that while online faculty are selectively choosing to take a couple of days off per week (similar to traditional work schedules), they are shifting the work week to accommodate students' activity in the course. Within the target sample, online course weeks are scheduled from Monday to Sunday, so it is customary for students to complete and submit most of their work toward the Sunday deadline. By the distribution of instructor time, you notice that instructors are spending considerable time on Monday and Tuesday responding to the work submitted by students over the weekend, but they are also spending a considerable amount of time in the online discussion threads on Sunday working with students who are

attempting to complete their weekly activities. The weekend availability of instructors is likely one of the biggest shifts in online faculty workloads, as many students electing to take online courses do so due to their own full-time work schedules during the traditional work week which requires educational activities to be completed over the weekend. Faculty examining workload equivalence while contemplating a shift to the online classroom should consider that teaching online courses may not take any more time that teaching face-to-face courses, but that the time investment is distributed differently throughout the week.

Another indicator of faculty involvement in online discussion threads is the number of times a faculty posts within an ongoing discussion. Within the target sample, faculty posted a mean of 6.80 (SD = 3.13) times per weekly threaded discussion. The mean number of weekly instructor posts ranged from 0.00 to 22.25 indicating a high range of variability of the visible instructor activity within course discussions. Qualitative feedback from instructors was also quite varied with one instructor reporting "I don't like to input feedback in discussions as students see my posts as 'the answer' and it stifles discussions of their own views, thoughts and opinions" compared to another instructor who stated "Students lack the metacognitive ability to question their own mastery of course concepts; this is my role as the content expert. I would never sit silent in my classroom, so why would I be silent in the asynchronous discussions?" The range of instructor input in threaded discussions is likely a function of the instructional goals of various discussion activities as well as the ability of students within a given class to continue relevant course-specific discussions without guidance of the instructor.

An ongoing concern when examining an instructor's participation within threaded discussions is the relative importance of the number of postings in relation to the time spent within the threaded discussion. Unlike a face-to-face discussion in which students can visibly see the physical presence of the instructor, the faceless nature of the online classroom means that students are often unaware of an instructor's active involvement in a discussion unless the instructor provides tangible evidence (in the form of threaded discussion postings) of their participation. A correlation analysis was conducted to examine the relationship between the number of faculty postings and the time spent in discussion activities; results indicated no significant correlation between number of instructor discussion posts and time spent in the discussion thread. Thus, while the number of faculty posts cannot be used as an indicator of an instructor's time investment in the course, online instructors may want to consider making their participation and time investment in online discussions more obvious via tangible postings.

Implications and Future Directions

This in-depth analysis of selected online courses suggests considerable variability in the time and frequency of instructor involvement in threaded discussions of online courses. As such, providing concrete standards to guide instructor time investment of this aspect of instruction may be premature. Establishment of professional expectations and the communication of concrete strategies for instructors' visibility in the online classroom may be more relevant and useful to instructors venturing into online instruction. As there is not necessarily a positive correlation between time in the online classroom and frequency of instructor interaction, a range of approaches to establishing "presence" in the online classroom must be presented to faculty (i.e., from limited daily participation to in-depth participation during certain "peak" days of the weekly cycle). Faculty may well find that 15 minutes of active participation per day establishes presence and facilitates learning in their courses more than one or two hours of login three times a week. Future research is required to examine the relevance of specific guidelines for faculty

interaction in discussion threads based upon factors such as discipline, course level, instructional goals, and educational philosophy.

As more and more colleges and universities incorporate online learning into their delivery offerings, the expectations of a "traditional" faculty appointment are changing. Faculty are increasingly faced with a teaching load that involves *both* online and face-to-face teaching, even if their education and experience has been limited to the latter. For this reason, it is critical for faculty more experienced in online teaching to share information and best practices from the field. As indicated by the instructional practices represented in this study, there is considerable variability in the time required to facilitate an online discussion as well as the frequency and visibility of an instructor's presence in the threaded discussions. Yet, the variability represented by the current study sets the stage for ongoing research into the range of instructional strategies that can be incorporated to meet specific learning goals within specific educational contexts.

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