

# **From Message Posting to Learning Dialogues: Factors affecting learner participation in asynchronous discussion**

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Generating true learning dialogue as opposed to a collection of loosely affiliated posted messages on a class discussion board can be challenging. This paper presents the results of a cross-case analysis of nine naturalistic case studies of online classes, looking at how activity design and facilitation factors affected various dimensions of student participation. Findings show that use of guidelines, deadlines and feedback and type of instructor presence affect the resulting discourse in an online class. Additionally, the paper explores how particular types of learning activities are better suited to generating discussion than others and how the integration of discussion activities with the rest of the course activities and requirements impacts learner motivation and participation.

## **Introduction**

The growth of online instruction over the last 10 years has been tremendous. In 1994, no one had heard of Blackboard or WebCT. In 2004, it is not uncommon to hear professors ask colleagues at another university “Do you have Blackboard or WebCT?” Given the rate at which technology use has grown, it is not surprising that research has struggled to keep up with it. As a result, many “best practices” are based on intuition, personal experience, and traditional instructional methods rather than on empirically based research.

Although many of the same underlying principles of teaching and learning still apply, online courses are qualitatively different from traditional, classroom-based courses. All aspects of class discussion—initiation, facilitation, conclusion, and

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feedback—require different approaches when an asynchronous medium is used. Instructors must account for the fact that they are not in the presence of live students, able to gauge reactions, and make small adjustments on the spot on an as-needed basis. There is no traditional instruction method that is truly an analogue to asynchronous discussion, and thus this medium needs to be examined closely in order to generate knowledge that will help online instructors learn and make informed decisions about how to design and facilitate asynchronous course interactions.

This study offers an initial step in that direction, using a case study methodology to examine how asynchronous discussion was used in nine different online courses in terms of course design, activity design, instructor facilitation, and resulting interactions. The research question for this naturalistic study was: “How does the design and facilitation of different types of asynchronous discussion activities impact student participation in terms of quantity, quality, timing, and nature of messages posted?” While student participation is not a direct measure of learning, it is necessary in order for a discussion activity to be successful and result in learning. Should student messages be lacking in sufficient quantity, quality, timing, and purpose then it is less likely that the learning objectives will be met through that activity.

Lacking an omnipresent instructor, the design of learning activities for online courses is critical. In-progress corrections can be very difficult to make, and first impressions and interactions can set the tone for an entire course (Conrad, 2002). King (1998) promotes the idea that the design of social spaces is crucial to the success of computer-supported collaborative learning (CSCL), a thesis that has proven itself in the research literature of subsequent years (e.g., Rourke, Garrison, & Archer, 2001; Aviv, Erlich, Ravid, & Geva, 2003; Rose, 2004). Courses and activities that are not well organized and designed can actually prevent learning and community building from taking place. As a result, King emphasizes the importance of research that depicts the context and the nature of learner interactions to help better inform the instructional design process.

Discussion participation will not just happen on its own. Learners look to the instructor to shape their interactions. Winn (1992) suggests that computer-based communication tools are shells waiting to be filled by learners, and that our design processes for these shells should not focus on content design but rather activity and message design. The work of various researchers in the learning sciences has supported this notion (e.g., Koschmann, Kelson, Feltovich, & Barrows, 1996a, b; Scardamalia & Bereiter, 1996; Davis & Linn, 2000; Guzdial & Turns, 2000; Oshima & Oshima, 2001; Davis, 2003). A particularly relevant issue that remains to be addressed in determining what activities should be designed and supported in Web-based courses is: Who fills the shell, the instructor or the learners? If it is to be filled with content from the instructor, justifying the use of Web-based conferencing over another medium becomes difficult.

If the shell is to be filled by the learners in conjunction with the instructor, then group communication is taking place. In such instances it behooves us to determine how best to position the shell so that learners are able to fill it in a pedagogically

useful manner. For example, if an instructor were to post a question with one clear, expected answer on a discussion board, there would be little use for multiple students to reply once the correct answer was given. Additionally, there would be little reason for students to discuss this topic further. On the other hand, if a discussion question allowed for multiple perspectives to be presented, supported, and argued, there is greater opportunity for students to engage in the activity. Clearly, some approaches to group communication on the Web will better serve instructional purposes than others.

Activity design thus applies to online courses on two levels. Both the discussion tool and the discussion activity must be designed. It has been implied by the companies designing online learning management tools (e.g., Blackboard, <http://www.blackboard.com>; WebCT, <http://www.webct.com>), whose interest naturally lies in marketing them to a wide audience, that pedagogy can be addressed within the instructional design of particular tools (Blackboard Inc., 2000). Tool design may have *some* effect on pedagogy (Bonk & Dennen, 1999; Firdiyewek, 1999), but it is the design of specific course activities that affects their ability to generate effective peer and instructor–student interactions (Ahern, 1994). Further complicating the matter, there does not appear to be one correct or better way to teach via an online medium (Smaldino, 1999); instead, one’s contextual factors should greatly affect the selection of teaching methods and activities, just as they should in a traditional classroom.

The interplay of factors affecting how well a discussion activity works has to do not only with design-related issues but also facilitation. Design and facilitation must work together in order to ensure learner participation, which in turn will impact performance (Picciano, 2002). For example, an activity designed to require a great deal of peer interaction may garner little participation if instructor presence is lacking. Similarly, an instructor with a high level of presence in a learning activity may still have participation problems or find that the activity’s outcomes deviate from the intent if the activity framework and guidelines are poorly designed or non-existent.

This paper presents the results of a systematically conducted, multiple case study of online classes that used asynchronous discussion, examining how activity design and facilitation affected various dynamics of student participation. The stories of these eight instructors and their nine classes represent many of the real-world experiences of online students, demonstrating in context how different factors may work together to discourage participation altogether, generate message posting behavior, or ideally create learning dialogues amongst all participants.

## **Methodology**

This study used a naturalistic case study methodology (Yin, 1984; Stake, 1995) to document activities in nine Web-based courses that made use of asynchronous conferencing as one of the class learning activities. The *in situ* nature of the study design allowed for natural participant interactions to unfold on behalf of both the instructors and the students. It was important to see how the various complex inputs

to a class (e.g., learning activity, instructor style, students, course content, course assessments, and technology) worked together to affect student participation.

Traditionally, case study methodology is used to develop local knowledge, and each class is a unique instance from which only petite generalizations can be made (Stake, 1995). These petite generalizations are useful for understanding the overall trends and themes of a particular class, but the instructional design field tends to be interested in theories that have practical applications across classes. Within the context of this study, the findings represent local theories (Elden, 1981; Lincoln & Guba, 1985), meaning that they pertain to a specific context. These inductively built theories were derived by analyzing data; hypotheses were not used to guide or precede the study, but rather the local theories grew out of the data (Lincoln & Guba, 1985). The results highlight the underlying theory given instructional phenomena in light of their particular conditions, methods, and outcomes (Firestone, 1993).

### *Participants*

The participants in this study were the students and instructors of nine online classes taught by eight different instructors at seven universities. The courses ranged in size from 15 to 106 enrolled students, in levels from undergraduate survey to Master's-level classes, and represented a variety of disciplines (see Table 1).

### *Data Collection*

Data collected from each class included a pre- and post-course interview with the instructor, pre- and post-course student surveys, virtual observation of all course activities and communication, and all course documents.

*Interviews.* Instructor interviews were conducted via telephone and lasted 30–60 minutes each. All interviews followed the same semi-structured protocol. At the

Table 1. List of participants

Instructor	Approximate enrollment	Course topic	Course level
Dr A	25	Interpersonal Communication	Upper-level undergraduate
Dr B	15	World History	Survey-level undergraduate
Dr C	22	Sociological Issues	Survey-level undergraduate
Dr C	15	Sociological Theory	Upper-level undergraduate
Dr D	25	Technology and Culture	Upper-level undergraduate
Dr E	106	Counseling	Upper-level undergraduate and graduate
Dr F	19	Library Science	Graduate
Mr G	17	Public Relations	Upper-level undergraduate
Dr H	15	Writing	Upper-level undergraduate

beginning of the semester, interview questions focused on the instructor's previous experiences teaching online, teaching style, course design decisions, and anticipated course events. The post-course interviews collected instructor impressions of how well the class went, information about anything that did not happen as planned, and reflections on whether or not the instructor would change anything before teaching the course again.

*Surveys.* Student surveys were administered using a Web-based form. The same core questions were asked of all students, with small modifications or additions made depending on a particular course's design or activities. The pre-course survey asked about students' comfort and prior experience with computer-mediated communication and the post-course survey focused on their opinions and reflections on course activities. Both surveys consisted primarily of Likert-type questions with open-ended follow-up questions. Survey response rates ranged from 5% to 60%, despite repeated attempts to contact students. The lower response rates came on the post-course survey, and although this is a limitation for the study it was not surprising. Even in classes with low response rates, student responses to open-ended questions yielded useful data for triangulation purposes.

*Virtual observations and documents.* All instructional materials for the courses were collected because they help explain the context, activities, and parameters of the course from the student perspective. All discussion archives were downloaded and saved at the end of the course. Additionally, virtual observations were recorded in field notes on a weekly basis. Monitoring the course activities on a weekly basis allowed the researcher to develop a greater sense of the student perspective in the course. How the course feels during a particular week—perhaps slow or having the potential for great disagreement—often is not evident in a discussion archive that contains fully resolved and completed discourse.

## **Data Analysis**

Data analysis was a two-step process, initially focusing on each course as an individual case, and then conducting a comparative analysis across all nine cases. It is the findings of the cross-case analysis that are reported in this paper (see Dennen, 2001, for full case studies).

### *Development of Case Studies*

Data from each course were analyzed independently, generating a case study of each class's asynchronous discussion experience, focusing on how course design and facilitation factors impacted student participation. In terms of qualitative analysis, all data were coded by theme. For each case, quality, quantity, nature, and timing of participation all were coding areas, with additional emergent themes

added. Measures of frequency and central tendencies were used to analyze the Likert-style survey items as well as certain aspects of the discussion boards (e.g., number of messages and threads, thread depth, and lag between responses), which varied by class. For example, Dr E's class did not use threading and thus thread analysis was not possible, and Dr C's class had a discussion assignment with quantifiable requirements so assignment fulfillment was determined.

### *Cross-Case Analysis*

Once the individual class narratives were developed, each with its own context-specific findings, the cases were examined together in the interest of noting similar trends or findings as well as differences and their relative impacts on the course design, facilitation, and participation. A grounded theory methodology (Strauss & Corbin, 1990) was used to guide this process through which key factors impacting participation were identified. These cross-case findings, with supportive data about the participation in the individual cases as space permits, are discussed in the next section.

## **Results**

### *Summary of Participation*

Each course in this study had its own unique characteristics and contextual factors. These findings explore the commonalities and differences among the courses' asynchronous discussion experiences, indicating design and facilitation factors that impact student participation.

Student participation was analyzed in terms of quantity, quality, nature, and timing for each case. Table 2 presents a summary description of participation in each of the nine courses in each of these areas. In terms of quantity of messages, the courses varied widely. In some courses it was required that students participate actively and regularly, whereas in other courses students may have posted two or three times during the entire semester, if at all. Generally speaking, it was the courses with a higher quantity of participation that also experienced higher quality participation, as noted both through level or depth of interactions as well as actual content of posts. These high-quality/high-quantity courses tended also to have ongoing discussion expectations or regular discussion deadlines centered on clearly designed discussion activities.

### *Discussion Activities*

Discussion activities affected the resulting participation in a class. Drs H and F each took a full integration approach, with their courses and all of their activities centering on the course discussion. The other six instructors used discussion as one component of their courses, with various degrees of integration and requirement.

Table 2. Summary of participation characteristics by course

Instructor	Quantity	Quality	Nature	Timing
Dr A	25 students, 5 forums, 244 messages 46.2 mean posts/forum (slightly fewer than the required two/student) 2.64 mean messages/threads	Not very dialogue-like, even when threaded Individual messages often lacked depth or focus	On-topic per guidelines Assignment to post one message and one response for each of the 5 course units	Mostly clustered around two deadlines (mid-semester and end of semester) 8.48 days mean lag time between messages and responses
Dr B	15 students, 4 forums, 93 messages 6 students (40%) participated in each forum 7 threads/forum, 3.32 mean messages/threads	Most initial messages about three paragraphs long, with references Dialogue-like interaction among students	On-topic per instructor guidelines 4 units of topical discussion	Clear deadlines for each discussion Approx 1/4 of all messages posted after deadline
Dr C (Soc. Issues)	22 students, 12 forums, 122 messages 67 threads, 10.62 mean message/forum, 1.82 mean messages/threads	Varying quality within individual posts Little to no interaction among students	On-topic per instructor guidelines Students to post article summaries on forum topics and answer questions from classmates	Sporadic throughout semester Most response messages had over 1 week lag time
Dr C (Soc. Theory)	15 students, 3 forums, 72 messages	Varying quality within individual posts. Little to no interaction among students	On-topic per instructor guidelines Students to respond to five study guide questions and post five messages to classmates	Three unit deadlines (driven by exams). Few late (and thus pointless) postings
Dr D	25 students, 2 forums, 203 threads, 1,009 messages 106 (10.51%) instructor messages	Highly interactive discourse, with threads ranging from 1 to 10 levels deep	On-topic per instructor guidelines	Ongoing and continuous throughout semester

Table 2. *Continued*

Instructor	Quantity	Quality	Nature	Timing
Dr E	106 students, 3 forums, 239 messages 51 (21.34%) instructor messages (announcements)	Low-quality and low-content messages with minimal interactions	Focused almost exclusively on administrative and technical issues 10 (2.39%) content messages	Sporadic
Dr F	19 students, 13 forums, 1,111 messages ~50% instructor messages in each forum	Highly interactive instructor–student discourse, with less student–student discourse. High-quality message content	On-topic per instructor guidelines. Followed assigned weekly topics and assignment requirements	Weekly topics discussed in 4-day windows Very active during discussions
Mr G	17 students, 2 forums, 89 messages	Low-quality messages with minimal discussion of course content	Generally off-topic, on either administrative issues or an unintended debate on gun control laws	Sporadic
Dr H	15 students, 8 forums, 764 messages	Highly interactive, with collaborative work and responsive messages	On-topic per instructor guidelines. Discussion and peer writing activities	Ongoing and continuous throughout semester

Table 3. Types of discussion activities

Activity	Description	Class(es)	Comments/outcomes
Discuss course readings	Discussion of materials students were supposed to read	Dr B	Used prompts related to readings
		Dr D	Focused on textbook; discussion used to pace students
		Dr F	Posted lecture notes on readings to stimulate discussion
		Dr H	Facilitated discussion on essays and course notes
Build group knowledge	Students chose a topic, presented it to the class, and answered classmates' questions	Dr C (Soc. 200)	Conceptually this was a good assignment, although minimal structure/facilitation/feedback resulted in low participation
	Students chose instructor-designed questions to answer, developing a study guide together	Dr C (Soc. 400)	All students had a potential investment in the outcome, since the activity had a divide-and-conquer approach to exam preparation
Hot topic	Discussion prompt on course topic but related to a controversial issue	Mr G	Discussion got off track, focusing on the controversial issue rather than the course topic (public relations)
Peer feedback	Students asked to read and comment on peer work	Dr F	Suggested, not required; formative
		Mr G	Suggested, not required; no structure; didn't happen
		Dr H	Required and encouraged; students provided formative feedback on draft-level work
Collaborative writing	Students required to write brief papers collaboratively	Dr H	Students left to determine partners and division of labor
Administrative discussion	Students encouraged to ask administrative-related questions on discussion board	Dr E Dr F Mr G	Intended to have everyone benefit from individuals' questions
General discussion	Students asked to discuss topics of their choosing related to a given unit	Dr A	Minimum posting requirements fulfilled, but lacked depth or dialogue
	Students asked to discuss (no guidance)	Mr G	Minimal and entirely unfocused postings

Each of the instructors used different types of asynchronous discussion activities, as presented in Table 3.

All of these uses of asynchronous discussion, regardless of their results in these classes, seem to have potential educational value, except perhaps for the general discussion. In the case of the general discussion and its value, clearly this would be

dependent on what guidelines were set up and how the discussion was facilitated; most people would agree that in a typical live class a discussion will not be active or productive if there is no clear agenda, even if that agenda is a relatively informal one. Of course, as more guidelines and focus are given to a particular discussion activity, it becomes increasingly likely that it would no longer be considered general discussion.

*Level of Dialogue*

Just because students were composing and posting messages within these classes did not mean that they were engaging in dialogue. In order for dialogue to be present there needed to be evidence of at least two discussants who were communicating in response to each other. Dialogue could be noted when participants responded to each other’s messages within a thread with some sort of direct reference—topical, using the previous author’s name, or indicating agreement—to the message’s author or content. Instances in which students used threading to organize small essays on a particular topic were not considered dialogue.

Across the nine courses, the occurrence of dialogue was higher when the instructors were actively involved in the discussion (see Table 4). However, instructor involvement was not the only contributing factor. In both Drs A’s and C’s classes timing affected whether or not dialogue could be achieved. These classes operated on a unit-based system, with the expectation that a certain number of messages would be posted by either two or three deadlines during the semester. Long discussion periods resulted in threads with messages that seemed to be in dialogic response in terms of content, but they were so spread out over weeks that one must wonder whether the original author ever read any of the responses. In other words, students were going through the motions of participating in a conversation, but all parties necessary for the discussion to take place were not necessarily present.

In both of these instructors’ classes some students said that they had returned to the forums frequently, looking for any responses to their messages, and were disappointed when they found none. These students actually did return to the

Table 4. Level of dialogue and dialogue participants

Instructor	Level of dialogue			Primary dialogue participants		
	Low	Medium	High	Instructor–student	Peer	Mixed
Dr A	×				×	
Dr B		×			×	
Dr C		×			×	
Dr D			×			×
Dr E	×			×		
Dr F			×	×		
Mr G	×				×	
Dr H			×			×

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. Dr C (starts forum)</li> <li>2. Anne 1/30 (posting on an article)             <ol style="list-style-type: none"> <li>2.1. Mary 2/20 (response to Anne's essay)</li> <li>2.2. James 2/22 (response to Anne's essay)</li> <li>2.3. Bonnie 4/19 (response to James's comments)</li> </ol> </li> <li>3. Christine 1/31 (claiming she will post in this forum)</li> <li>4. Rebecca 3/2 (response to James's comments in 2.2)             <ol style="list-style-type: none"> <li>4.1. Rebecca 3/4 (correcting a typo)</li> <li>4.2. James 4/6 (response to Rebecca)</li> <li>4.3. Rebecca 4/29 (response to James)</li> <li>4.4. Julie 5/2 (response to the Rebecca/James discussion)</li> </ol> </li> <li>5. Traci 5/4 (response to discussion in thread 4)</li> </ol> |
|---|

Figure 1. Outline of forum, including threading, name of author, date of posting, and content summary

conversation after a period of being away to follow up on a response that their message had received. This was most prevalent in Dr C's classes (see Figure 1 for an example). The requirement to be expert on a topic and to reply to any questions or responses that one's thread generated likely had some effect on student behavior in this area.

In Dr E's forum, the discussion tool had no threading feature, which made dialogue much more difficult. There were some examples of students responding to each other, and at times their messages would get separated within the list of posts, making it more difficult to follow the conversation than if it were threaded. Additionally, since most of the messages addressed problems, there was the potential for some instructor–student dialogue; the approaches that Dr E used most frequently, however, included responding to a student privately via e-mail or responding to multiple student messages in the aggregate.

### *Assignment Structure*

The structure, or lack of structure, in a given assignment affected both how eager and apt students were to participate and how readily able the instructor was to assess student performance. In most of these classes the instructors felt that some structure was important and built it into their assignments. This structure may have come in the form of instructor expectations; learner instructions; or prompts, deadlines, and feedback (see Table 2, Timing column, for summary of how deadlines were used; see Table 5 for summary of other factors).

### *Instructor Expectations*

Many of these instructors specified their expectations to their students at the beginning of the semester, while others demonstrated their expectations through modeling

Table 5. Summary of assignment structure

Instructor	Expectations/guidelines	Prompts/organization	Feedback	Grades
Dr A	2 posts per student per forum (5 unit forums)	None given; Discussion organized by unit topic	None given	Assigned based on quantity
Dr B	Built into prompts	Specific discussion prompts with incremental deadlines, corresponding with course readings	Provided via private e-mail or message to whole class; qualitative and quantitative	Assigned holistically for participation
Dr C	Specified minimum postings	Topical forums and/or study guide questions	None given	Assigned based on quantity
Dr D	Extensive description of quality messages; ongoing participation expected	Participant instructor provided ongoing prompts as needed	On discussion board, as part of ongoing commentary	Assigned holistically for participation
Dr E	None given	None given; discussion board organized into 5 forums by issue (About Assignments, Instructor Announcements, etc.)	None given	None given
Dr F	Extensive qualitative and quantitative guidelines, including models	New discussion prompt/topic each week	Given informally via discussion board	None given (instructor later regretted)
Mr G	None given	None given, except for one "hot topic" discussion	None given	None given
Dr H	Ongoing participation expected; heavy use of modeling	Clearly organized activities	Provided via weekly e-mail messages to the whole class	Assigned holistically for participation

in the discussion area. Explicit expectations were expressed either, or both, in qualitative and quantitative terms as guidelines for students to follow. In cases where instructor expectations were not clear, such as Mr G's and Dr E's classes, student participation floundered. Students did not know how much they were to contribute or what their messages should look like. As a result, their use of the discussion areas gravitated toward seeking help on their other assignments.

#### *Clarity of Learner Instructions and Discussion Prompts*

In addition to providing learners with expectations of quality and quantity, clear discussion instructions or prompts, when present, helped the students in these classes to complete their assignments with less stress. This assertion is not surprising; clear directions are helpful in any educational scenario.

#### *Deadlines*

Deadlines were used by some instructors to help keep learners on task within the course. Many of the instructors commented in interviews about a tension between using deadlines to keep learners moving at a particular pace and the possible self-paced needs of a non-traditional learner population. Nonetheless, there were deadlines of both an explicit and implicit nature, and these deadlines had a clear effect on when students participated in discussion and, in turn, to what degree the discussion developed into an actual dialogue.

#### *Nature of Discussion Prompts*

Not all discussion prompts were equally effective at promoting student dialogue. Prompts generating the greatest participation all shared two key characteristics, namely clear guidelines and the opportunity for everyone to have a unique response. Discussion prompts that called for a single, fact-based answer did not generate fruitful dialogue because after one student responded correctly there really was no need for further discussion. Other students still gave their answers, generating threads that simply named the same item over and over again. This was not dialogue, but just message posting to meet a minimum posting requirement.

#### *Feedback*

Instructor feedback played an important part in students' motivation to participate in these courses. It was provided in different ways, but the courses in which instructor feedback was timely and substantive achieved a higher level of student dialogue.

### **Assessment**

Assessment here refers to the assignment of a grade; feedback is a related issue, although feedback and assessment are not quite the same thing. An instructor might

provide feedback without assessing a grade, and a grade may be assessed without providing any other feedback than the numerical or letter rating. Factors surrounding the assessment of asynchronous discussion in the studied classes included whether or not it was assessed, how frequently it was assessed, whether it was assessed qualitatively or quantitatively, and what kind of feedback was provided. Table 5 summarizes the assessment policy for each instructor in this study.

Not surprisingly, students in these classes gave evidence of being motivated by grades. For example, the flurry of messages that were posted right before the deadlines in Dr A'S class were likely written in the interest of receiving the attributed grade. In Dr E's class, there was no grade attached to using the discussion board and many students did not post any messages during the semester.

### *Instructor Beliefs and Expectations*

With reference to assessment, the issue arises of whether or not student participation should be required in asynchronous discussion. Drs B and E shared the belief that students could learn the course material just fine without posting any messages and felt it would be a shame to penalize a student's grade for non-participation if that student had otherwise performed well in a class.

In cases where students were being assessed on a purely quantitative basis, such as Drs A's and C's classes, the quality of messages did not reach the instructors' expectations. Both of these instructors expressed uncertainty over how discussion should be assessed. Dr A referred to the assessment of student messages as a very subjective matter; he was more comfortable with an objective form of measurement, and as a result gave students the full grade for complying with the required number of contributions. Dr C felt that students had enough to worry about, given the difficulty of the course exams, and intended to give full credit to all students who completed the forum assignment in quantitative terms.

Assessment of discussion was not as much of an issue in Dr H's class, in part because the discussion was so heavily tied in with the other course assignments. It was difficult to separate discussion from other course activities, since pre-writing and peer feedback assignments all required discussion.

### *Relevance to Other Course Activities*

A discussion activity's relevance to other course activities seemed to play a role in motivating, or failing to motivate, students to participate. In some of the courses, such as Dr H's Business Writing class and Dr F's Library Science class, the discussion essentially was the class. Not to participate was not to be a part of the class in any way; there were no exams or other assessment tools to make up for non-participation. Even the two course papers, worth 60% of a student's grade in Dr H's class, required participation in peer feedback activities. In Dr E's course, there were no topic-based discussion guidelines and the discussion boards became largely relegated to discussion of problems; students in turn understood the discussion to be

related to dealing with problems rather than developing an understanding of the course material.

Dr C's two classes provide a nice view of the contrast between relevance of structurally similar activities. In Sociology 200, the forum activity had no direct relevance to the course exams, which were the major graded activity of the course. As a result, students overall had a less favorable impression of the activity and were less likely to complete the activity. In Sociology 400, the forum activity served a dual purpose as exam preparation.

Drs B's and D's classes are examples of the middle ground. Dr B achieved full, consistent participation from more than half of her class, and the nature of the discussion assignments was complementary to the other written work being completed in the class. In Dr D's class, the discussion gave students a chance to explore their ideas and share perspectives before having to address them in the written assignments. Although there was not a dependent relationship between discussion and other assignments in these two classes, it was pretty clear that the different assignments were equally valued and that the discussion assignment was not just an afterthought added in the interest of having some student interaction.

### *Relevance to the Students' Lives*

Across the classes there was repeated evidence of students trying to make connections between the course material and their personal thoughts, experiences, and perspectives. In Dr E's counseling class and Dr A's communication class, the course material readily lent itself to—and in fact required—making these connections. In Dr A's class, the discussion forums were rife with these examples; in Dr E's class, students often felt that the connections they were making were too personal to share in a public arena.

In other courses, like Dr D's Technology and Culture, students naturally gravitated toward these kinds of activities, sharing stories of how technology had influenced their lives. The forums in Dr C's sociology courses and Dr B's history course both contained messages in which students used their own experiences to understand or explain the course material. In fact, these students wrote with their experiences on their sleeves, so to speak; rather than using an authoritative, omniscient voice in their postings, they presented themselves through the lenses of their own lives.

Intersubjectivity among students was evident in many of the transcripts; in courses where actual dialogue occurred students were negotiating meaning relative to course content with each other. By communicating and pooling their shared experiences, they created a wealth of perspectives from which to draw upon in their other course assignments. Students repeatedly hailed these forums as a good place for exchanging and learning about different viewpoints. In a face-to-face class, this type of sharing might take place through the formal course discussion, informally in chats with classmates before and after class, or whispered asides to a nearby student. In an asynchronous discussion, there are no pre- or post-class chats, nor are there any

whispered asides; in these classes it was important that such interactions take place within the actual discussion forum to promote greater understanding of the course material and different viewpoints.

### *Instructor Presence*

Across these nine courses, instructor presence ranged from forum domination to complete absence (see Table 6). Instructor presence affected how much, and to whom, students wrote their messages in these courses. It could be established either within, or outside of, the discussion forum, and the most favorable presence seemed to be one that let students know that their messages were being read without taking over the discussion. Instructor presence was related to feedback and assessment; when there was no feedback or assessment, there likely was no instructor presence.

On one end of the continuum was Dr F, whose classes had a great deal of instructor–student dialogue (he posted about half of all messages) but little peer dialogue. Dr F began most of the discussion threads and monitored the Web boards closely when they were open. His level of attention to the Web boards was admirable, yet created an instructor-centered feeling within the discussions. He responded quickly to student messages, which ensured that they received a response but also shut down the potential for much peer interaction, since students would not likely feel the need to respond when the instructor already had. In this class, students looked to Dr F for confirmation; on the few occasions when he was not present, they were upset. Student comments on the post-course survey indicated that his facilitation strategies caused problems, specifically a feeling of abandonment one week when he was ill and less active and a feeling that peer interaction was not appropriate.

On the other end of the continuum were Mr G and Dr C. In Mr G's class, some students did not view him as a potential discussion participant; he was frequently

Table 6. Instructor presence

Instructor	High presence	Medium presence	Little or no presence	Description
Dr A			×	Never posted, no evidence of reading posts
Dr B		×		Presence achieved off the discussion board, via e-mail and announcements
Dr C			×	Never posted, no evidence of reading posts
Dr D	×			Ongoing participant
Dr E		×		Posted announcements and responded to student questions
Dr F	×			Posted more than half of all messages in the class; “lived” on the discussion board
Mr G			×	Posted infrequently, no evidence of reading posts
Dr H	×			Ongoing participant

referred to in the third person, as if he were not reading the messages. Although he did post in the forums on an infrequent basis, students did not seem to expect him to be there. Dr C did not have any presence beyond posting the initial prompts in his classes' forums, and students did not refer to him within their messages.

Drs H and D were both frequently present within their respective course discussion areas but did not dominate the conversations. Their facilitation styles were more subtle, and students did not write specifically to them within the forum, nor did students wait for them to respond. Dr B, on the other hand, did not have any presence beyond the discussion prompt within the discussion areas. She maintained a presence nonetheless through the individual, qualitative feedback that she provided after every discussion assignment.

Instructor presence, given these observations, seems to be something that is important in moderation, and that can be achieved in different ways. It was established when students knew in one way or another that their instructor was reading their discussion contributions. The issue of presence is also related to audience in writing. When there was no instructor presence, students seemed to have little to no awareness that the instructor was reading their messages in a critical manner; when instructor presence was considerable, students wrote in response to the instructor and not each other. More is not necessarily better in terms of presence, and, as Dr B demonstrated, an instructor need not be a frequent contributor to an online discussion in order to have a presence.

## **Discussion**

These nine cases, when viewed together, support each other's findings. Instructors who used similar strategies in one aspect of their asynchronous discussion design or facilitation frequently had similar experiences. Differences were also important; the nine cases are by no means exhaustive in representing all possibilities of asynchronous discussion use, but they nonetheless cover a lot of territory in terms of varied approaches. These differences may be drawn upon to learn about places where context-based variation is likely to be a factor. The intent of these comparisons and contrasts are to provide a point from which one may make naturalistic generalizations (Stake, 1995) about teaching via asynchronous discussion. Some areas requiring consideration by those designing and teaching online courses include motivational factors, perspective sharing, instructor presence, and optimal levels of feedback.

### *Motivational Factors*

Relevant, goal-based activities will attract participation if both the relevance and learning objectives are made explicit to the students. Dr C's Sociology 200 class had a discussion assignment that was goal based but not necessarily relevant, while Dr A designed an activity that was relevant but not clearly goal based; neither achieved participation of a level and quality comparable to Drs D, B, and H, who had activities that met both criteria.

As Turoff (2000) indicated, participation is highly correlated with attendance in online courses; students do not seem to recognize this fact readily, however, and thus the participation factor is largely part of the instructor's experience. In a traditional university classroom model, student attendance is often based on need. Students attend either because their presence is required (and perhaps graded) or because they recognize that they will learn the required material during the class session. Once in attendance, specific in-class activities should not need to be aligned to the course goals in order to generate participation. Students are notorious for not attending large classes in which no one will notice their absence, particularly if notes are easily obtainable or not necessary for exams or papers, and it was not surprising to see the same behavior patterns in these nine online classes. In these classes, the perceived goal is satisfactory performance in the exam.

To address this attendance/participation issue, it makes sense that the instructor should build in clear reasons or goals for asynchronous discussion activities and make sure that these goals are made visible to the students. At this juncture, an instructor may come to the conclusion that discussion simply is not valued within a given course context, which is fine too. Students expressed frustration when their peers did not participate in asynchronous discussion, even when they recognized that it was not a mandatory class activity in their situation. Thus, it may be better not to engage students in the activity unless there is a clear reason to do so.

Even socialization can be considered a need or goal that can generate student participation in an asynchronous conference. Many of the instructors and students involved in this study, however, responded that for the non-traditional student socialization in a pure or traditional sense may not be an adequate motivator for generating discussion. If an instructor values socialization in online courses—and they would be supported in this viewpoint (Collison, Elbaum, Haavind, & Tinker, 2000; Hanna, Glowacki-Dudck, & Conceicao-Runlee, 2000; Peters, n.d.)—it should be built in as a clear goal. In other words, students should be told explicitly that knowing and interacting with classmates will be an important part of their course experience.

### *Perspective Sharing*

The classes that generated lively discussions, such as Drs B's and D's, used discussion prompts that were phrased in a way that allowed everyone to take a different perspective or share their own point of view. Perspective sharing was important in Dr A's class too. Students stated that they used these perspective-sharing opportunities to make meaning of the material; essentially, these were examples of intersubjectivity (Rogoff, 1990) or building mutual understanding (Crook, 1994), which are representative of the underlying constructivist nature of online discussion (Koschmann et al., 1996b; Firdyiwek, 1999). Although at times the connections made, and examples shared, seemed tangential to those not integrally involved in the perspective-sharing process—and certainly a minority of students voiced this point of view—many students felt this was an important part of their learning process. At

no point in any of the classes did this type of dialogue conversation (Jenlink & Carr, 1996; Sherry, Billig, & Tavalin, 2000) deteriorate into off-topic socialization.

### *The Optimal Balance of Presence*

Instructor presence is clearly an important factor in generating quality student dialogue in an asynchronous forum. Appropriate presence seems to be moderate in nature, with problems arising when instructors are either too dominant or too absent. Dr H, who had a successful level of class presence, suggested that instructor presence is most important at the beginning of the semester, to set the tone for the class. However, an instructor must know how to be present without setting expectations for being omnipresent. Clearly in Dr F's class, students developed expectations of instructor presence, and when he was absent for a day or two mid-semester it was memorable enough for them to comment on it at the end of the semester. The issue of presence is an important one; tales of instructors working harder to establish online presence abound (Young, 2000), yet some instructors like Drs B and D seem to have success without putting in such a burdensome or consistent effort.

Assuming that the balance of instructor presence includes active forum participation, what strategies should instructors use when composing messages? Should they, for example, ask questions, provide feedback, give lectures, or promote connections between messages? Only three of the participating professors were frequent discussion participants within their classes, and the data from these three are rather inconclusive. Dr H shared personal experiences, asked students questions to further their critical thinking, and provided general feedback. Dr D asked questions to initiate discussion and provided feedback on student messages. Dr F posted lectures, answered assignment-based questions, gave students authoritative feedback, and asked students questions designed to make them examine a topic more closely.

It has been suggested that these moments of conversation within the forum need to be carefully designed themselves; these strategies, used more or less in-the-moment, need to support students' construction of meaning (Winn, 1992). Thus, it may not just be a matter of how much instructors post messages that affects the class dialogue, but also how they compose those messages. Certainly, there were differences in the dialogue strategies and resulting interaction qualities and patterns within these three classes. Drs D and H tended to interact as a peer on a regular basis, relinquishing their instructor roles, while Dr F remained at the front of the virtual classroom. There was much less peer interaction and student initiation of discussion in Dr F's class; in these instances, an instructor taking an "expert" role had a clear effect on the tone of the discussion, with students writing to the instructor rather than to their peers. This finding is consistent in spirit with Ahern, Peck, and Laycock's (1992) study that found conversational treatment by the instructor generated higher quality student contributions, and merits further study.

*Optimal Levels of Feedback*

What is the optimal level of feedback in an online course? How do online instructors balance the students' need for affirmation with their own need to manage time and effort wisely? As with instructor balance, this issue is somewhat dependent on instructor and student expectations; it is also somewhat dependent on student need. This study has indicated the importance of regular feedback, but also recognizes how overwhelming it may be for instructors to provide this feedback to all students. Much of this issue comes back to whether or not it is acceptable for online students to be "lurkers" and whether or not online discussion is valued; if lurking is acceptable, then feedback in many ways becomes a non-issue. If quality discussion is expected, however, it is likely that students are going to need some marker of their success or progress.

Waiting for feedback can frustrate online students (Zvacek, 1999), a sentiment that was echoed, unprompted, in this study's survey responses. Instructors need not provide copious qualitative feedback to all students as Dr B did; often a general message to the class as a whole will suffice, as Dr D provided. However, when general feedback is given to the class, students still want to know how they are doing and what their grade is. It is unfortunate that learning conversation would be driven by a grade, but it is representative of the larger system of concerns and interests in which universities operate.

**Conclusion and Future Directions**

Overall, the cross-case findings of this study are in agreement with related research findings, traditional instructional design theory, and early hypotheses about what works in asynchronous discussion activities. This consistency is confirmatory and may serve as an underpinning for future research focused on developing much-needed frameworks and guidelines for instructional design within an asynchronous environment.

The experiences of these classes suggest that it is indeed possible to generate principles of instructional design and facilitation that may apply broadly to online instruction, encouraging student participation that ideally will support learning processes. Variables such as instructor presence, deadlines, and frequency of feedback should be studied in experimental settings within controlled contexts for individual asynchronous discussion activities to generate a better sense of their effects on student participation and learning. Continued research working toward the development of empirically supported best practices will help harness the power of this instructional medium, making its use more purposeful and perhaps even informing the development process of future computer-mediated discourse tools.

**Notes on Contributor**

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examines how instructional design and facilitation factors work together to promote success—in terms of both participant satisfaction and participant learning—in this medium.

## References

- Ahern, T. C. (1994). The effects of technology on online education. *Journal of Research on Computing in Education*, 26(4), 537–547.
- Ahern, T. C., Peck, K., & Laycock, M. (1992). The effects of teacher discussion in computer-mediated discussion. *Journal of Educational Computing Research*, 8(3), 291–309.
- Aviv, R., Erlich, Z., Ravid, G., & Geva, A. (2003). Network analysis of knowledge construction in asynchronous learning networks. *Journal of Asynchronous Learning Networks*, 7(3), 1–23.
- Blackboard Inc. (2000). *Blackboard product strategy and vision: White paper on building blocks (B<sup>2</sup>) initiative*. Washington, DC: Blackboard Inc.
- Bonk, C. J., & Dennen, V. P. (1999). Getting by with a little help from my pedagogical friends. *Journal of Computing in Higher Education*, 11(1), 3–28.
- Collison, G., Elbaum, B., Haavind, S., & Tinker, R. (2000). *Facilitating online learning: Effective strategies for moderators*. Madison, WI: Atwood.
- Conrad, D. L. (2002). Engagement, excitement, anxiety, and fear: Learners' experiences of starting an online course. *American Journal of Distance Education*, 16(4), 205–226.
- Crook, C. (1994). *Computers and the collaborative experience of learning*. New York: Routledge.
- Davis, E. A. (2003). Prompting middle school science students for productive reflection: Generic and directed prompts. *Journal of the Learning Sciences*, 12(1), 91–142.
- Davis, E. A., & Linn, M. C. (2000). Scaffolding students' knowledge integration: Prompts for reflection in KIE. *International Journal of Science Education*, 22(8), 819–837.
- Dennen, V. P. (2001). *The design and facilitation of asynchronous discussion activities in Web-based courses: Implications for instructional design theory*. Unpublished doctoral dissertation, Indiana University, Bloomington.
- Elden, M. (1981). Sharing the research work: Participative research and its role demands. In P. Reason & J. Rowan (Eds.), *Human inquiry: A sourcebook of new paradigm research* (pp. 253–266). New York: John Wiley.
- Firdiyewek, Y. (1999). Web-based courseware tools. *Educational Technology*, 39(1), 29–34.
- Firestone, W. A. (1993). Alternative arguments for generalizing from data as applied to qualitative research. *Educational Researcher*, 22(4), 16–23.
- Guzdial, M., & Turns, J. (2000). Effective discussion through a computer-mediated anchored forum. *Journal of the Learning Sciences*, 9(4), 437–469.
- Hanna, D. E., Glowacki-Dudka, M., & Conceicao-Runlee, S. (2000). *147 practical tips for teaching online groups*. Madison, WI: Atwood.
- Jenlink, P., & Carr, A. A. (1996). Conversation as a medium for change in education. *Educational Technology*, 36(1), 31–38.
- King, K. S. (1998). Designing 21st century networked spaces: Structuring electronic social spaces. In C. J. Bonk & K. S. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Koschmann, T., Kelson, A. C., Feltovich, P. J., & Barrows, H. S. (1996a). Computer-supported problem-based learning: A principled approach to the use of computers in collaborative learning. In T. Koschmann (Ed.), *CSCL: Theory and practice of an emerging paradigm* (pp. 83–124). Mahwah, NJ: Erlbaum.
- Koschmann, T., Kelson, A. C., Feltovich, P. J., & Barrows, H. S. (1996b). Paradigm shifts and instructional technology: An introduction. In T. Koschmann (Ed.), *CSCL: Theory and practice of an emerging paradigm* (pp. 1–23). Mahwah, NJ: Erlbaum.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

- Oshima, J., & Oshima, R. (2001). Next steps in design experiments with networked collaborative learning environments: Instructional interventions in the curriculum. In T. Koschmann, R. Hall, & N. Miyake (Eds.), *CSCL 2: Carrying forward the conversation* (pp. 99–109). Mahwah, NJ: Erlbaum.
- Peters, K. M. (n.d.). *Creative use of threaded discussion*. Retrieved January 21, 2005, from the WebCT.com Library Web site: <http://www.webct.com/OTL/ViewContent?contentID=898084>.
- Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks*, 6(1), 27–40.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Rose, M. A. (2004). Comparing productive online dialogue in two group styles: Cooperative and collaborative. *American Journal of Distance Education*, 18(2), 73–88.
- Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing social presence in asynchronous text-based computer conferencing. *Journal of Distance Education*, 14(3), 51–70.
- Scardamalia, M., & Bereiter, C. (1996). Computer support for knowledge-building communities. In T. Koschmann (Ed.), *CSCL: Theory and practice of an emerging paradigm* (pp. 249–268). Mahwah, NJ: Lawrence Erlbaum.
- Sherry, L., Billig, S. H., & Tavalin, F. (2000). Good online conversation: Building on research to inform practice. *Journal of Interactive Learning Research*, 11(1), 84–127.
- Smaldino, S. (1999). Instructional design for distance education. *TechTrends*, 43(5), 9–13.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Turoff, M. (2000). An end to student segregation: No more separation between distance learning and regular courses. *On the Horizon*, 8(1), 1.
- Winn, W. (1992). The assumptions of constructivism and instructional design. In T. M. Duffy & D. H. Jonassen (Eds.), *Constructivism and the technology of instruction* (pp. 177–182). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Yin, R. K. (1984). *Case study research: Design and methods* (Vol. 5). Beverly Hills, CA: Sage.
- Young, J. R. (2000, January 28) Logging in with ... Ken W. White. *The Chronicle of Higher Education*, p. A44.
- Zvacek, S. M. (1999). What's my grade? Assessing learner progress. *TechTrends*, 43(5), 39–43.

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