

## Peer Teaching in Web Based Threaded Discussions

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### *Abstract*

*This study is, as an inquiry into the effectiveness of discussion leadership taxonomy, designed to help online discussion leaders support and facilitate discussions conducted by undergraduates. Participants were approximately two hundred preservice undergraduate students taking an Introduction to Educational Technology course. Each week students had access to online lectures and text materials, and participated in Web-based topical discussions. Data for this study came from open-ended interviews conducted with thirty-seven volunteer participants, and from all discussion posts. Analysis of the data showed that while some students had difficulty assuming the role of discussion leader, many felt that it was a stimulating challenge. The Tips for Online Leaders proved to be useful in promoting learning and provided discussion leaders with a variety of support strategies. While some students were resistant to Web-based learning, all students found that the discussions helped in learning the assigned material. Finally, the students were able to expand their own knowledge by observing the multiple perspectives presented by other students.*

### **Issues in Web-based Threaded Discussions**

This research used Web-based threaded discussions because they offer opportunities to develop reciprocity and cooperation among students, require active learning, provide prompt feedback, and support diverse talents and ways of learning. Sabine and Gilley (1999) attempted to simulate classroom interaction and reached the conclusion that threaded discussions may even be superior to face-to-face discussions because students have an opportunity to reflect on posts before submitting them. These online discussions create a “shared space” where ideas can be debated and linked to other ideas, and hypotheses can be made or refuted (Bonk & Kim, 1998). Threaded discussion has been used in a number of environments: (a) Early Childhood Education (Bernard & Lundgren-Cayrol, 2001), (b) an MPA program (Hutchinson, 1999), (c) social work (Boland, Bartron, & McNutt, 2002), (d) supply-chain management (Flynn & Klein, 2001), (e) legal issues (Vodanovich & Piotrowski, 1999), (f) ninth- and tenth-grade biology classes (Parker, 2000), (g) adult education (Hutton, 1999), (h)

instructional design (Donald, Ertmer, & Lane, 2001), (i) and distance education (Usrey, 1999). However, in none of these cases were students given the primary responsibility of leading the discussions.

A taxonomy was developed as a training tool for threaded discussion facilitators to support student learning. This taxonomy was developed from an analysis of mentoring characteristics, which came from traditional face-to-face mentoring. Many traditional mentoring techniques do not lend themselves to the Web learning environment. For example, the characteristic of providing physical protection to a protégé (Gordon, 1983) was eliminated because it is not possible to provide physical protection online. Another role that was eliminated was that of beer pal (Kammer, 1985). Again, this is impossible online. Other mentoring techniques do not lend themselves to the environment of threaded discussions when they are used for instructional purposes, e.g., being a psychological counselor (Zey, 1991). After rejecting those techniques that were impossible or impractical in threaded discussion, several similar characteristics were combined to create the taxonomy. As it was first conceived, the taxonomy was designed for use by faculty members who were leading threaded discussions.

Later, when the taxonomy was used with graduate students who participated in online discussions as discussion members and leaders, they reported that they had increased feelings of cooperation and connection to other students in the discussion. Web-based instruction can be structured to support increased interaction among students with positive effects (*Seton Hall TLTC Handbook*, 2001). The importance of appropriate feedback in Web discussions is supported where specific strategies for instructors are suggested (Brescia, in press). Bonk and Cunningham (1998) proposed a learner-centered model, providing support for respecting diverse talents in computer-based collaborative learning tools.

In this research, the taxonomy was tested with undergraduate students who participated in online discussions as discussion members and leaders. An abbreviated version of the taxonomy was used, containing only four of the original strategies.

## **Methods**

This study is as an inquiry into the efficacy of a modified leadership support taxonomy designed to help online discussion leaders support and facilitate conferences conducted by undergraduates. Previous research examined the use of the taxonomy by faculty and graduate students as threaded discussion leaders; the questions this research seeks to explore follow: (1) How do undergraduate students communicate as participants in threaded discussion groups? (2) How were leadership strategies that students learned to use as threaded discussion group leaders successful? and (3) How successful were undergraduate students as leaders of threaded discussion groups?

The data obtained in this research provide a detailed portrait of scaffolding strategies, via a telementoring taxonomy, and their effect in a Web-based learning environment. The study attempted to determine which strategies used by undergraduate discussion leaders improved student performance in threaded discussion groups and contributed to student reflection upon their posts and subsequent learning. As a case study, the results reported here provide important information to faculty in the design of

large-group undergraduate classes using threaded discussions to support face-to-face or online learning.

### ***Research Site***

Data presented in this study were collected over an academic semester in a course titled Educational Technology at the University of Arkansas, designed to introduce students to a variety of topics they will need to understand when they enter the classroom, with the ultimate learning goal being an ability to use educational technology to help facilitate the learning process. In the course, participants had access to PowerPoint presentations that served as lectures, and to readings from *Instructional Media and Technologies for Learning* (Heinich, Molenda, Russell, & Smaldino, 2002). Threaded discussions were then used to ask questions about the lectures and readings. Students were instructed to post a minimum of twice a week, with posts of a sufficient length to put forward an argument, support an idea, or address an issue. The posts were to continue the discussion and reflect on the readings and PowerPoint presentations. Students were randomly selected from the discussion group rosters to serve as discussion leaders, with each student taking that role twice during the semester. Discussion leaders were instructed to support the discussion by (a) keeping it on track, (b) questioning to encourage students to think more deeply about a topic, (c) giving support to those thoughts, and (d) summarizing the major points.

### ***Participants***

One hundred eighty-four undergraduate students enrolled in the course. By the end of this study, enrollment was 156. In addition to collecting the text of threaded discussions from weekly discussions, thirty-seven students agreed to be interviewed. Threaded discussions took place on WebCT [<http://webct.uark.edu/>], which is an online course shell. Of the thirty-seven participants interviewed, eighteen logged on to WebCT at home; seven used a combination of home and school; two logged on at work; one reported logging on at home, school, and work; eight reported a log-on site of school; and one logged on at an outside residence. Four of the students listed as logging on at school reported their dorm room as the specific location. Thus, thirty-three of the thirty-seven students logged on at home at least part of the time. The majority of the interviewed students (thirty-two) took the course because it was required. However, six of the thirty-two also cited the desire to learn more about technology. Three students took the course because it had been recommended to them, and one wanted to become more knowledgeable about computers. Two students enrolled in the course for other reasons.

Standardized open-ended interviews were conducted with thirty-seven volunteer participants. The interview consisted of nineteen questions (see Appendix A). According to Patton (2002), there are three main reasons for using the standardized open-ended interview: (1) the exact instrument is available for inspection, (2) variations among interviewers can be minimized, and (3) the interview is highly focused so that interviewee time is carefully used. Participant responses to the interview questions were analyzed to ascertain perspectives on the discussion groups. Each

participant interview was assigned a number to protect the confidentiality of the participants and to make the documents easily identifiable.

In addition to the interviews, researchers gathered data from “threaded discussion groups.” The threaded discussions took place over fourteen weeks, each week involving fourteen groups. Students served as online discussion leaders and question stimulators. Each student was assigned to serve as discussion leader twice during the semester. Students of the week were randomly selected from the class roster until all students had an opportunity to participate. Data included the text of the threaded discussions and an interview of student perceptions about threaded discussions and online courses. The following table applies to this study in terms of context: people, place, and situation.

Table 1

*Contextual – Display*

People	Place	Situation
<i>Instructor</i>	<i>WebCT</i>	<i>Instructor</i>
<i>Undergrad-Students</i>	<i>On-Campus (Students)</i>	<i>Students with Tasks</i>
	<i>On-Campus (Instructor)</i>	<i>Posts - event</i>
	<i>Home-Computer Lab</i>	

Findings are reported based on information gained from the interviews and threaded discussion group postings. By using both interviews and discussion group postings, it was possible to obtain cross-data validity checks and avoid the problem of errors linked with single-source method or data (Patton, 2002).

***Discussion Groups***

The data collected from the discussion groups were collected over an academic semester at the University of Arkansas - Fayetteville. Participants had access to PowerPoint presentations that served as lectures and to readings from *Instructional Media and Technologies for Learning*. Threaded discussions were then used to ask questions about the lectures and readings. Students were instructed to post a minimum of twice a week, with posts of sufficient length to put forward an argument, support an idea, or address an issue. The posts were to continue the discussion and reflect on the readings and PowerPoint presentations. Students were randomly selected from the class roster and assignments were rotated so that each served as discussion leader twice during the semester. Discussion leaders were instructed to support the discussion, keep it on track, and occasionally summarize the major points.

The discussion group open codes were organized into a *paradigm model*. The categories of the *paradigm model* then became the upper-level axial codes used to organize information gained from the discussion groups. This model was selected because it demonstrates the actions/interactions that students utilized to meet the challenge of engaging in an online discussion group. Whether one is studying

individuals, groups, or collectives, there is action/interaction, which is directed at managing, handling, carrying out, or responding to a phenomenon as it exists in context or under a specific set of perceived conditions (Strauss & Corbin, 1990).

## ***Design***

The constant comparative method was employed in the analysis of these data and refinement of the open codes into axial codes and, eventually, into higher-level axial codes. This method required constant comparison of data to and against itself to determine meaning and to generate further questions, theories, and categories. As each unit of meaning was selected for analysis, it was compared to all other units of meaning and was subsequently categorized and coded with similar units of meaning (Glaser & Strauss, 1967). Figure 1 shows the steps involved in the constant comparative method.

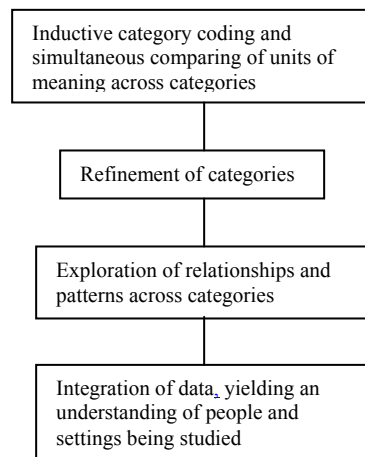


Figure 1. Steps in the Constant Comparative Method

NVivo™, a qualitative computer software package, was used in the analysis of the data. Transcripts of interviews and discussion group postings were searched for common terms and patterns through the use of text, string, and Boolean searches. The coding of data and the use of programmed searches allowed for the accurate and efficient location of significant data in context. The retrieval of this salient data led to an understanding of the relationships contained within these data.

***Open Codes.*** The standardized open-ended interviews and weeks three and five of the discussion group transcripts were thoroughly read to ascertain the contents of the documents and to get a better understanding of what the research data meant. Following that reading, the interviews and the two weeks of discussion group transcripts were open-coded. Open coding helped organize the data while also keeping the analysis grounded in the data. Patterns of recurring words and phrases gave rise to axial codes for both data sources.

***Axial Codes.*** As a result of the open-coding process, categories began to emerge from the data. These categories were organized into lower-level axial codes for the

interviews. The constant comparative method was instrumental in the analysis of these data and refinement of the open codes into axial codes, and, eventually, into higher-level axial codes. The higher-level axial codes that emerged from the data for the interviews are presented in Figure 2.

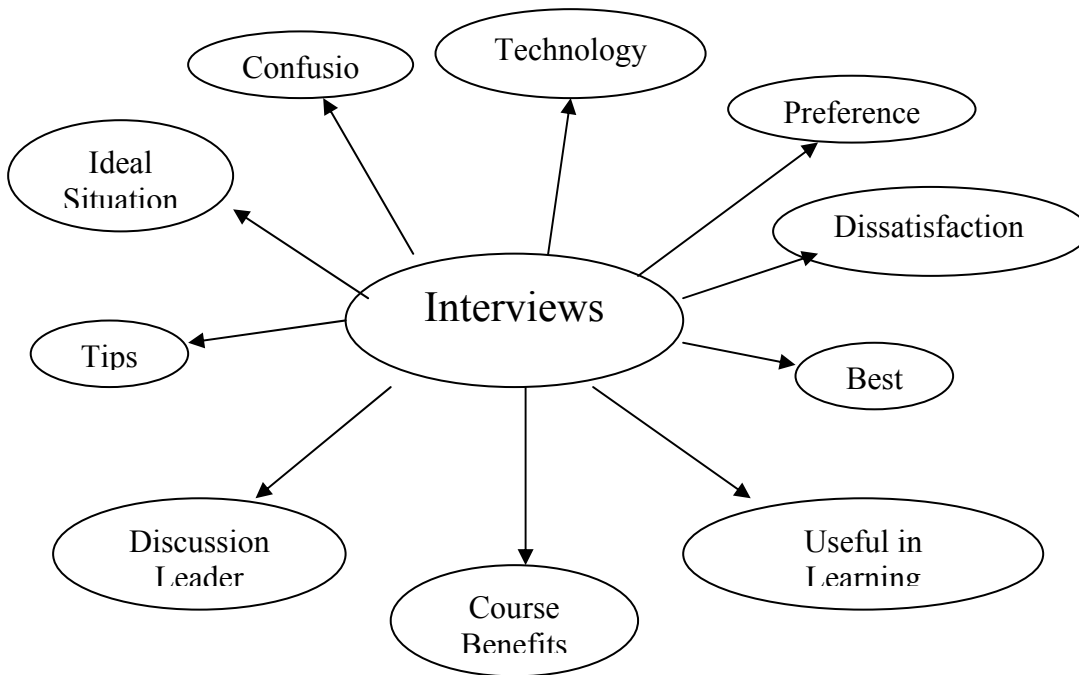


Figure 2. Higher-Level Axial Codes Derived from Interviews

In order to capture the behaviors, actions, and interactions of the students while actually participating in the online discussion groups, the paradigm model was employed during the axial coding process of the discussion group transcripts. Open codes for weeks three and five were used as a basis for text, concurrent, and proximity searches on the remaining twelve weeks of discussion data. Within the framework of the paradigm model, categories of causal conditions, phenomenon, context, intervening conditions, action/interaction strategies, and consequences, categories with regard to student posting behaviors emerged. The axial codes that pertained to these posting behaviors were organized under action/interaction strategies and consisted of Feedback, Opinions, Questioning, Redundancy, Summarizing, Keep on Track, and Discussion Leader.

**Selective Codes.** Upon careful examination and reflection on the axial codes that had emerged from the open codes, three main relationships between concepts began to become apparent. Posting behaviors emerged as a selective code because they were a major theme in the interviews and were manifested in the discussion groups. Interview participants discussed positive and negative aspects of their own posting behaviors, as well as the posting behaviors of their classmates and discussion leaders. The outcomes of posting behaviors could be observed by reading the transcripts of the discussion groups and coding the comments students themselves had made while

actually in the process of posting. Perceived positive aspects of the online discussion group format became the second selective code. Interviewees discussed several factors of the online format that they found to be positive and discussion group participants made references to the convenience and benefits while engaged in the discussions. The third selective code that emerged was that of participant success. Use of the telementoring taxonomy (see Appendix B), or tips, and the guidance role of the discussion leader increased student success. These three selective codes, (a) posting behaviors, (b) perceived positive aspects, and (c) participant success, contributed to the results reported here about threaded discussion group facilitation.

Table 2 consists of symbols that were used to identify participants and whether the source was an interview or discussion group posting. Participant title denotes that all the participants were undergraduate students. The symbol for an interview is "I," and for a discussion posting "D". In addition to the designation of "D" for a discussion group, "s" denotes the section of the discussion group postings, and "p" the paragraph number of the discussion group postings.

*Table 2. Data Display Table*

*Participant and Data Type Key*

Type	Notation	Source
Participant Title student	S	undergraduate
Data Type	I	interview
	D	discussion posting
	s	section
	p	paragraph

***Implementation of Telementoring Taxonomy***

The telementoring taxonomy was given to the students during the first class. The purpose of the strategies was explained, and the students were told when and how to use the tips to help them in their task as discussion leaders. At the same time, each student was given a rubric showing what their grade would be based on their role as discussion leader and participant. Also, during the first lab class, students were walked through the process of using the technology and the purpose and use of the taxonomy.

In addition, on the Friday before they started their week as discussion leaders, each was sent a reminder message and an electronic copy of the tips.

## Results

### *Within Case Data Display Matrix*

In order to make the data more illustrative, a "Within Case Data Display" will be used to present the patterns from representative samples of the interviews. The samples are based on student attitudes toward the discussion group format. Student interviews were read to ascertain general attitudes based on comments and suggestions with the following positive categories emerging: (a) positive-convenience, (b) positive-sharing opinions, (c) positive-time to think, (d) positive-anonymity, and (e) positive-forced to study. Some students preferred other forums or expressed negative reactions such as these: (a) negative-lack of participation, (b) negative-lack of interaction, (c) negative-technology, and (d) negative-lack of content. When student attitudes were not clear, or pros and cons seemed evenly balanced, interviews were classified as ambiguous.

The attitudes of the students included in the representative sample appear in the far-left column of the display. The axial code patterns will be listed at the top of the matrix. Information contained in the interviews will be used to confirm the listed patterns.

The axial codes that were created from the open codes were discussion leader, tips, useful in learning material, course benefits, best, preference, technology, confusion, dissatisfactions, and ideal situation.

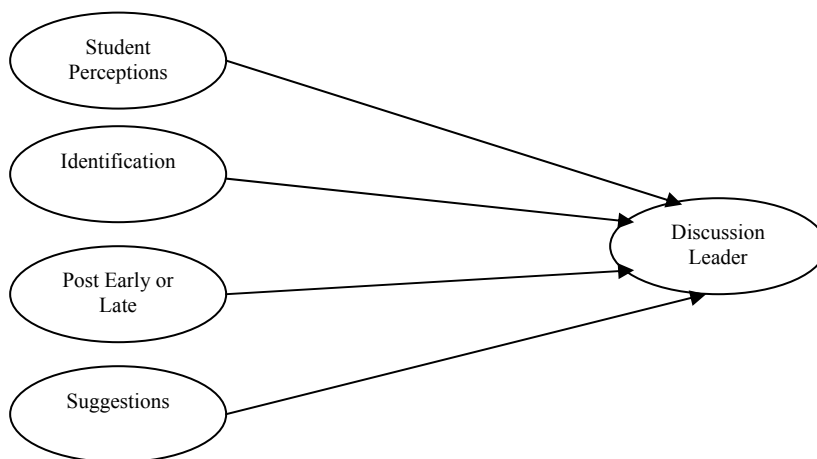


Figure 3. Students' Perceptions of the Role of Discussion Leader



## *Discussion Leader*

A pattern emerging from the data was feedback on the role of the discussion leader. Because every student had the opportunity to perform as discussion leader, all interviewees were familiar with the requirements and the difficulty level of the leadership role. The role of discussion leader added a depth to their comments that would not have been present had they only been participants in the online discussion groups. It also allowed the students to evaluate the role with regard to possible future performances. Figure 3 shows students' perceptions of the role of discussion leader.

**Summary.** Participants had mixed feelings about the role of the discussion leader. Some students found the leaders helpful in understanding the course material, and felt that the leaders had expanded the discussions by asking additional questions and keeping everyone on track. Others felt the discussion leaders were less than beneficial and did not feel, overall, that they had posed questions or effectively led the online discussions. Both groups of students cited the main problems of the discussion leaders as (1) not identifying themselves, and (2) posting too late in the week to be of assistance to the group. Regardless of how they viewed the discussion leaders in their individual groups, nearly all participants had suggestions for ways in which to improve the role.

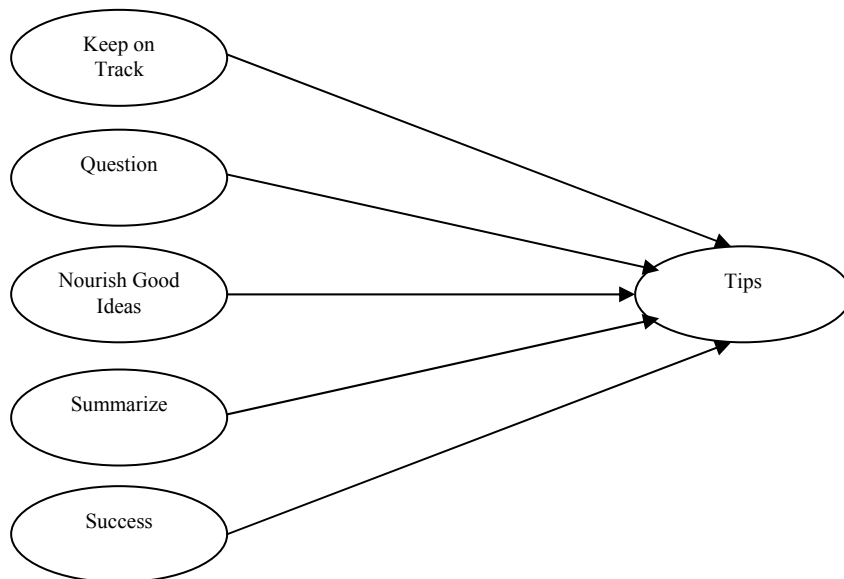


Figure 4. Use of the Support Tips by Discussion Leaders

## *Tips*

Tips were another pattern that emerged from the data. The instructor provided the participants with a list of tips for online leaders that included (a) keep on track, (b)

question, (c) nourish good ideas, and (d) summarize. Students were also advised to use their books, examples, and the PowerPoint lectures to guide their discussions and comments. The majority of students found the tips to be beneficial, whether they had consciously set out to use them or not. "No, the tips were pretty good. I tried to use the tips, but then other things would come out. The tips were very good for the class to know what the objectives were going to be" (I 18/4). Figure 4 lists the components of the tips.

**Summary.** The majority of participants did not consciously use the list of online tips as they were physically posting. However, many did use the tips without being aware of it at the time. Once prompted by the instructor, they identified the tip(s) they had used and reflected on whether they had found them successful. *Nourish good ideas* was the most frequently used tip, and was viewed as a tool to expand the discussions. *Keep on track* and *Summarize* were used on an almost equal basis, with *summarize* often being paired with the other tips. Students felt that *Keep on Track* was particularly useful in learning the content, and *Summarize* offered them the opportunity to review the material and highlight the key learning objectives. Several discussion leaders mentioned asking questions of their classmates with regard to content and in attempts to get them more involved; however, only one directly mentioned *Question* as the online tip they had used.

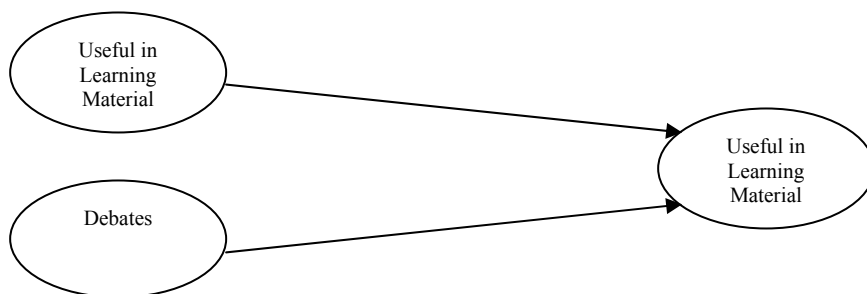


Figure 5. Usefulness of Discussion in Learning Assigned Material

### ***Useful in Learning Material***

The discussion groups' usefulness in learning the required content was another pattern that emerged from the data and is reflected in Figure 5. Most of the students found the discussions helpful in learning the course material and stated that taking part in the discussions forced them to read the textbook and watch the PowerPoint presentations. "Yes, because in order for your discussion to get full points, you have to have researched the concepts for that discussion; you have to understand the points to some extent. While doing that research, you are going to get the information you will have to have in order to answer the test questions" (I 17/5).

Students were also asked in the interviews whether they would prefer a debate format. Some saw debates as potentially motivating and beneficial, while others viewed them as argumentative and intimidating. Approximately half the participants felt debates could be helpful in their learning the material. "I think so. When you're getting concepts that have advantages and disadvantages, like virtual reality for example, you

could have a debate and learn more about what the advantages and disadvantages would cost" (I 17/5).

**Summary.** The majority of students found the discussions to be useful in learning the course material. They felt they were reading and reviewing the material as they prepared their posts; knowing that they had to post information for their peers to read seemed to be a motivating factor to make them study the material. Other participants did not find the discussions as beneficial, and some students admitted that they did not put effort into learning the material prior to posting. Some of the students who didn't find the discussions helpful preferred a traditional lecture atmosphere, while others felt that debates would be beneficial. The students who felt that debates would be useful in learning the course material suggested that they be limited to three or four per semester.

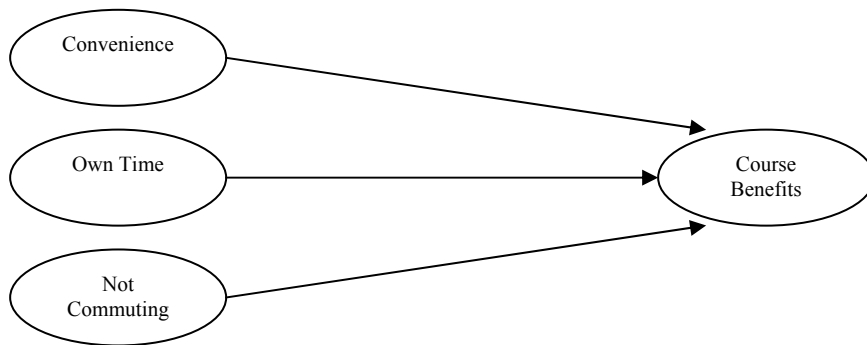


Figure 6. Benefits of Discussion Group Format

### ***Course Benefits***

Course benefits were another pattern that emerged from the data. All students, regardless of whether they preferred the discussion format, found benefits to the discussion group forum. Interviewees talked about convenience, being able to post whenever they liked, and not commuting. They felt that these three attributes showed a respect for student time, and gave them the opportunity to learn to manage their own time efficiently. Figure 6 shows the benefits of the discussion group format.

**Summary.** The majority of interviewees reported that the discussion group format had benefits that they enjoyed. They liked the short amount of time they spent posting their replies, as opposed to preparing a written assignment or listening to a lecture. Most students listed the benefit of posting when it was convenient for their schedule as a bonus. This was especially true for nontraditional students, who often juggled work and families. Not having to commute to campus to physically attend class was an attractive advantage for those interviewees who had to drive to the university grounds.

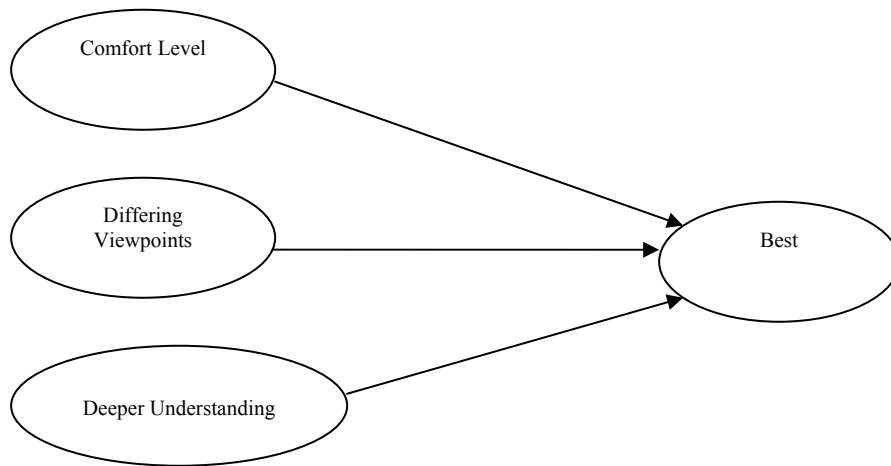


Figure 7. Characteristics of Discussion Groups that Students Liked Best

**Best**

The qualities that students liked best about the discussion group format emerged as a pattern in the data. Some students cited the deeper understanding they gained as the best outcome of the discussion groups: "If you do have something you don't understand, you can put it out there so someone can help with the part of the text you didn't understand. Also, you can get other people's ideas by reading theirs. It gives you better understanding, other viewpoints. You can understand the material much more" (I 26/3). "I think it just helps you to understand it a little better" (I 5/6). Other students mentioned the level of comfort they felt while taking part in the discussion groups as the quality they liked best: "Pretty laid back. You didn't have to worry about if you didn't have something to say, because everybody did. You didn't have to worry about people making fun of you because they couldn't get to you online. I think the comfort level is a good thing" (I 6/4). The sharing of opinions and the opportunity to see others' viewpoints was most often mentioned as the aspect the students liked best about the discussion group format. "Personally, I like the ideas that come from it. Everyone has a different interpretation of what's being asked. To read everybody's interpretation of everything" (I 36/4).

**Summary.** Sharing opinions and viewpoints was the best feature of the discussion group format for most students. They felt this sharing gave them the opportunity to learn from their classmates and brought new ideas to their attention. The students also enjoyed using the information in the textbook and the PowerPoint lectures to solve problems they may encounter in real life. Not being the only one responsible for an answer and the anonymity of the online format increased the comfort level for some students.

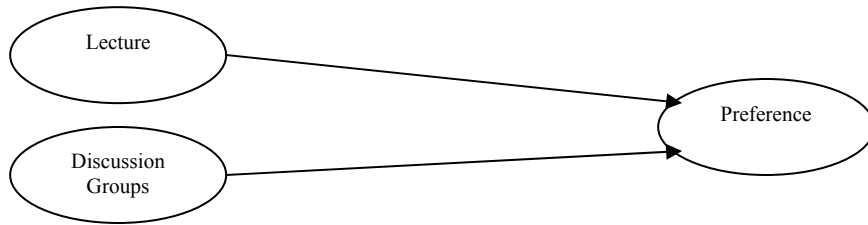


Figure 8. Students' Preference for Discussion Groups or Lectures

***Preference***

Another pattern that emerged from the data was whether students preferred the discussion group forum or a lecture format (See Figure 8). Students were often specific in voicing their learning needs or personality styles. These two factors most often influenced which instructional delivery method was preferred by interviewees.

**Summary.** Most students preferred the discussion group format to a more traditional approach to the course. The anonymity of the discussion group seemed to empower some students to voice their opinions and participate more than they would have in front of a large class. Other students felt they needed the structure of a lecture format. They expressed doubts with regard to their ability to motivate themselves and preferred having an instructor tell them what they needed to know. Many missed the immediacy of a question-and-answer session with other students and a professor. They did not feel they received enough feedback to their questions via the discussion group forum.

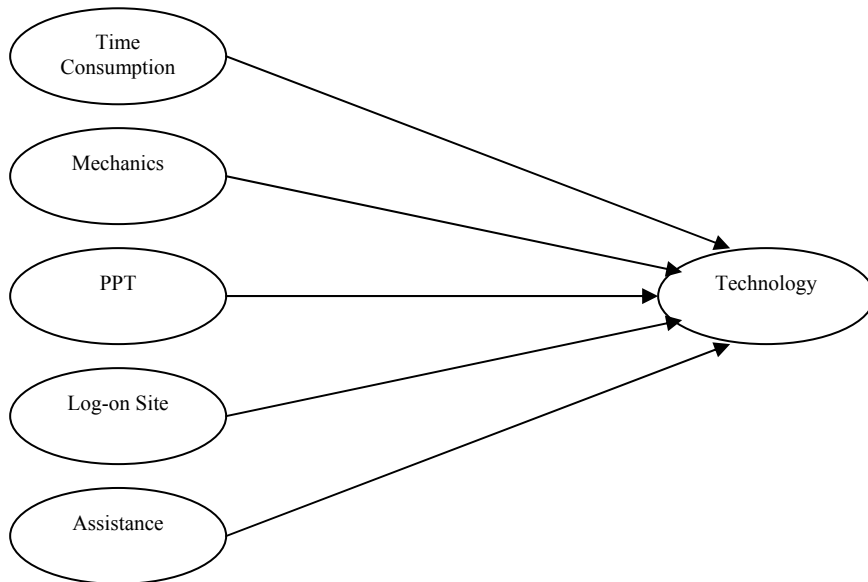


Figure 9. Influence of Technology on Student Attitudes and Expectation of Success

## **Technology**

Technology emerged as a pattern in the data. Since the class was conducted online, technology influenced the degree of success and the attitudes of many students. As we saw in the previous section, most students preferred the discussion group format to attending a traditional weekly class. Therefore, problems with technology were not major deterrents for most students. "It was new. I hadn't gotten the feel of it yet. I wasn't sure I was doing it right. Now I really like it. I get on early in the week" (I 28/2). Figure 9 summarizes the influence on student attitudes and expectations of success.

**Summary.** Most students logged on to the Internet in their homes. Nearly all students cited convenience as the determining factor for log-on site. Students who did not feel technologically proficient were intimidated more by the online format of the class than by its content. Some were making posts for the first time and felt overwhelmed until they mastered messaging on WebCT. When students had problems with posting or logging on to the Internet, they most often sought assistance from the course or lab instructors. More proficient students were frustrated about the amount of time they spent opening and closing posts in order to follow the discussion in their groups. The PowerPoint lectures were seen as valuable assets to the course; however, some students who experienced difficulties with downloading or audio found it necessary to purchase CD versions of the lectures.

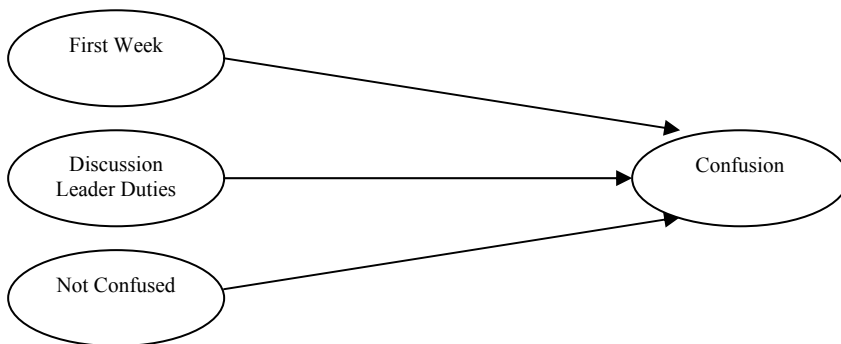


Figure 10. Posting Behaviors and Expectations Confusion

## **Confusion**

The confusion some students felt with regard to the posting behaviors and expectations of the online discussion group was another pattern that emerged from the data. Figure 10 shows the main areas of confusion. However, not all students expressed doubts about what they were supposed to do.

**Summary.** The uncertainty some students felt in regard to expectations seemed to be centered on what the students viewed as unclear directions given the first week of the course and lack of definition of the duties of the discussion leader. These students felt that step-by-step handouts, coupled with examples of discussion posts, would have helped to clarify the requirements.

The majority of interviewees, however, reported that they understood the directions and knew what was expected of them in the postings, that the instructor had clearly expressed to them their duties. They reported that they understood the directions, their discussion leader duties, and how to make the posts. They felt the instructions provided had adequately explained what their expectations and duties were.

Several students expressed confusion with regard to what was expected of them in the online course format. The uncertainty seemed to stem from what these students viewed as unclear directions given the first week of the course and lack of definition of the duties of the discussion leader. They felt step-by-step handouts, coupled with examples of discussion posts, would have helped clarify the requirements. Not all students were in doubt about what they were supposed to do. The majority of interviewees reported that they understood the directions, their discussion leader duties, and how to make the posts. They felt the instructions provided had adequately explained what their expectations and duties were.

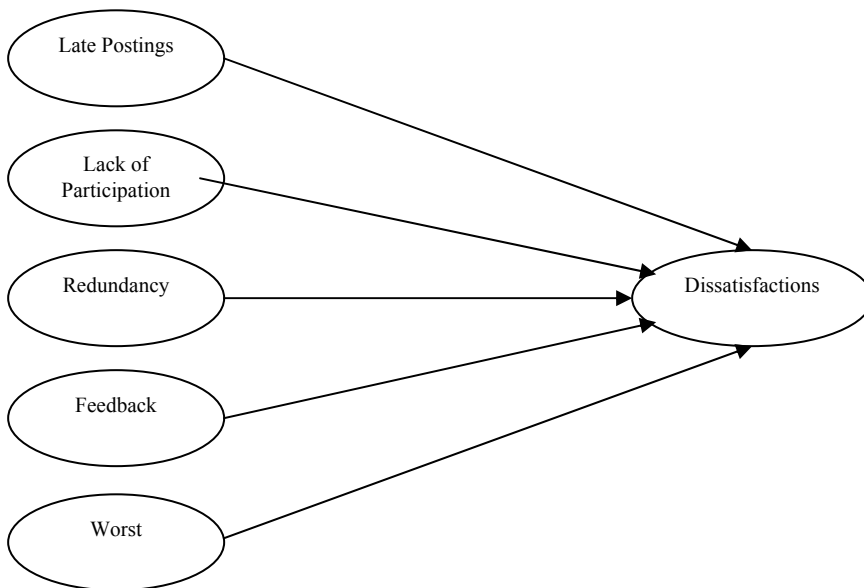


Figure 11. Dissatisfaction Some Students Experienced

### ***Dissatisfactions***

Areas of dissatisfaction for the participants were also noted as a pattern in the data and are listed in Figure 11. Interviewees were often critical when relating their own behavior, and that of their classmates, with regard to the online discussion groups. Some participants also considered a lack in instructor feedback to be responsible for their feelings of dissatisfaction.

**Summary.** Participants had criticisms with regard to their own behaviors in the discussion group. They mentioned late postings, lack of participation, and redundant answers as stumbling blocks to their success as discussion group members and leaders.

They felt late postings by both the discussion leader and other students undermined the success of this type of discussion format and almost all interviewees mentioned the lack of participation within their group as a hindrance to effective discussion. There was also frustration with the number of redundant answers that were posted which did not move the discussion forward. Some interviewees voiced concerns about instructor involvement in the online discussions. Most students would have liked more feedback throughout the process so they could be sure they were conducting the discussions properly. Others mentioned a desire for more feedback in order to know how they were progressing in the course.

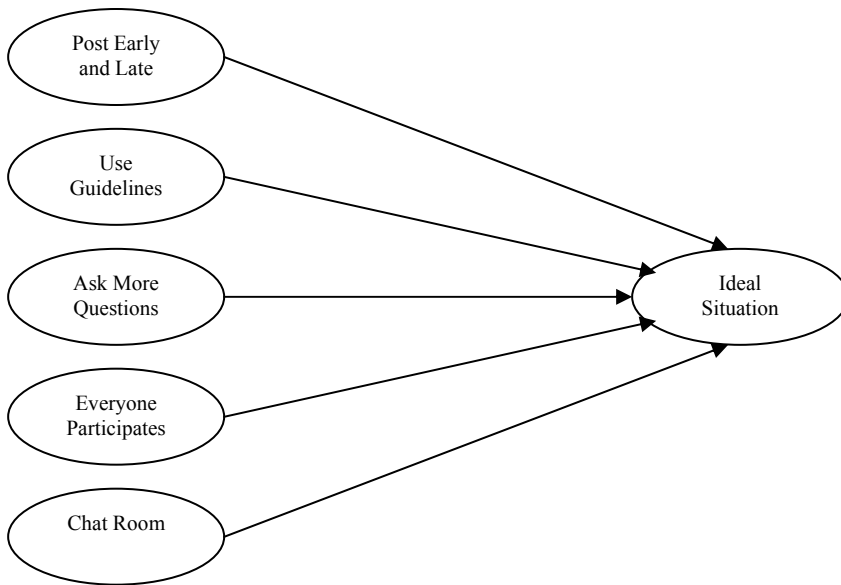


Figure 12. Student Perceptions of What Would Be the Characteristics of an Ideal Discussion Group

### ***Ideal Situations***

Participants shared their views on what they felt would constitute an ideal discussion group (See Figure 12). They suggested that one post be done early in the week, and the second post late in the week. They felt the quality of the discussion would improve if students--particularly discussion leaders--made better use of the guidelines, and the students made suggestions regarding the questions enhance the discussion experience. A majority of the students described their ideal discussion group as a chat-room type arrangement.

**Summary.** Participants felt the ideal discussion group was characterized by more exchanges between students, and by all students participating and posting early enough so that back-and-forth discussions that would move the topic forward could take place. Students voiced the feeling that adhering to the course guidelines and instructor tips improved the quality of the discussions. It was suggested that either more



complex questions or a greater number of questions would give students broader topics that might spark deeper discussions. A chat room was most often heralded as the ideal discussion forum. Students realized that it would hinder the flexibility of the discussion groups and tie them to a schedule, but liked the instant responses and the fact that everyone would be participating at the same time.

## **Discussion**

The results of this study indicate that most students were ambivalent about the discussion leader's role: many found the discussion leaders to be helpful, and some had trouble determining who the discussion leader was during particular discussions. However, all students had suggestions regarding how to improve the discussion leader's role in the future. When students used the tips and support strategies for being a successful discussion leader, the tips were perceived as being helpful to the learners and provided guidance for the discussion leader. Several students suggested using synchronous discussions--"chats"--in the future.

As has been seen many times in previous research, some students initially had trouble with the technology: (a) logging in, (b) learning where and how to post, or (c) adjusting to the course format. A considerable number of students had difficulty with procrastination. Posting late made it impossible to realistically participate in the discussions.

The discussion groups were successful in helping the students learn the assigned material and prepare for the tests. Most students also viewed the online nature of the course as a convenience and a time-saver. The collaborative nature of the discussions contributed to deeper understanding for the learners and gave them an opportunity to see multiple perspectives for addressing instructional issues.

The use of case studies gave the students an opportunity to operationalize the course material in classroom situations and was seen to be an important learning tool by many students.

The results of this study present ambiguous recommendations as to how undergraduates can become more effective discussion leaders. The learners' roles as being undergraduate students early in their preservice teaching matriculation affected the role of discussion leader. When students had trouble with the technology, it was often because they had little or no experience with Web-based instruction. Quite a few students also had not yet developed good study habits and put off working on this course until the last day of the week, which limited their participation in the threaded discussions to the last day. Many of the students had complaints that indicated that they were resisting the new instructional method such as they wanted to "go to a lecture," they wanted to have "synchronous instruction or be able to "see the professor." However, most students found the discussion leader role important, both as a role for themselves to play and as a guide when they were discussion participants.

Most students felt that the use of case studies as the instructional method in the threaded discussions had several benefits: first, it was necessary to read and study the weekly material to participate in the discussions; second, students were able to spend more time thinking about their responses before posting; third, they were able to see how other students interpreted a situation, and their own thinking benefited from access

to those multiple perspectives; and fourth, case studies made it possible to use their recently gained knowledge in classroom situations.

### Conclusion

There are five key results emerging from these data. First, some undergraduates are not ready to assume the role of discussion leader without additional training. Conversely, many of the students found the role of discussion leader to be stimulating. Second, most students as discussion leaders found the suggested discussion support strategies they were given were useful in promoting learning, and felt that the strategies gave them ideas of what to do beyond just asking questions. Third, almost all students found the discussion to be helpful in their learning the assigned material. Fourth, a substantial percentage of the students were resisters to the new instructional technique. Fifth, the use of collaboration allowed the students to be aware of and learn from the multiple perspectives presented by other students.

This study indicates that undergraduate students may be successful discussion leaders, given additional training. It also indicates, as Nielsen (2000) suggests, that it is possible to give learners new and better ways of interacting that they cannot get in a face-to-face classroom. Discussion can be nonlinear, asynchronous, virtually anonymous, and accessible in convenient places for learners.

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## Appendix A

# Questions for Students

Name:

Program:

When expect to graduate:

### Connecting to WebCT

1. Where do you log on to WebCT?  
Home - Work – School - Other (explain)
2. Did you have any difficulty logging on to WebCT? What were they?
3. Did you receive support when you had difficulties with WebCT?
4. Why are you taking this course?

### Class Discussion

5. Would you say you were given clear directions on what was expected of you in the class discussions? If not what would have helped?
6. Some people say it is difficult to meet the discussion requirements? What do you say?  
What problems did you have meeting them?
7. Would you say that the student facilitators' involvement in the class discussion was helpful?
8. Did you feel comfortable participating in those class discussions?  
Why?
9. When you made [specific post] was the one of the four tips useful to you?
10. Why did you choose \_\_\_\_\_ tip? What were you hoping would happen?
11. To what degree was [specific tip] helpful to other students?
12. How could [specific tip] have been more useful to you?
13. Was there anything the other “student facilitators” could have done that would have made this specific class study more useful for you?

## **Critical Incidents**

14. What was the best thing about the discussions?
15. What was the worst thing about the discussions?
16. What do you think the ideal discussion would be like?
17. Do you think that discussions are useful in helping you learn the assigned material?
18. Would more formalized discussions like a debate be more useful to students?
19. Is there anything you would like to say about the discussions that I have not asked?

## Appendix B

### Tips for Online Leader

**Keeping on track:** You must provide structure for the discussion to proceed and to be productive. You should support the tasks presented by the professor, allow appropriate time for discussion and completion of those tasks. Once the task is clear, you should help the students to stay on task. Ex: We seem to have gotten a little off track. Remember the issue we are dealing with is the role of media in instruction.

**Question:** Ask students to think some more about what they are saying, or conclusions they have reached. You can ask any number of questions to help the students explore an idea, clarify their thinking, reach a conclusion, or work on a task. Ex: Can you give some examples of this? How might you go about doing that?

**Nourish good ideas:** You can market the good points a student has made to the group, or may intervene in a conflict to defend points a student has presented. You should be trying to convince the other students of the significance of particular ideas and attempting to gain admission of those ideas into the conversation. By showing appreciation of student ideas you give support to those thoughts. Ex: That was a really good post. You showed the support for your idea by quoting from the text and presented an appealing hypothesis.

**Summarize:** You may guide the discussion along by summarizing key points, topics covered and those still needing to be covered, bringing the group to a point of convergence which they can move forward from. Encourage other students to summarize if they feel it will help their understanding. Ex: So far in our discussion of learning centers we have discussed self-pacing and the teachers' roles. What is the role of students in learning centers?