Turkish Online Journal of Distance Education-TOJDE April 2003 ISSN 1302-6488 Volume:4 Number:2

Case Studies of Distance Students' Perceptions of Participation and Interaction in Three Asynchronous Web-based Conferencing Classes in The U.S.

Senem YILDIZ andCarrie CHANG,
PhD Candidates, Language Education
Indiana University, Bloomington, USA

Introduction

Web-based instruction in higher education is becoming more and more popular around the world. McIsaac, Blocher, Mahes and Vrasidas (1999) claim that interaction may well be the single most important activity in a well-designed distance education experience (p.122).

Most web-based classes use electronic conferencing which is a form of group discussion that uses text messages stored on a computer as a communication and interaction medium. With this tool, students and the instructor can communicate synchronously and asynchronously, carry out classroom discussions, dialogue and debate despite the geographical differences of the participants. While in web-based instruction "... students (are) liberated from social restraints of the classroom" (Partee, 1996, p.79) such as speaking anxiety in front peers and instructors, time limit, lack some interactive features of face-to-face classroom such as immediate feedback, physical cues and a sense of community might occur in web-based courses. Gilbert and Moore (1998) claim that interaction can be defined both in social terms and in regard to student interaction with the content of instruction and "those who are skeptical are often concerned about the ability of Web-based instruction to provide (these) two categories of interactivity that are perceived to be common in face-to-face instruction.

Literature Review

Several studies have been conducted so far regarding student perceptions towards distance education. Zhang and Fulford (1994) note that the social implications of interactivity in instruction, stating that student perceptions of the efficacy of social interaction in a course can have significant effects on learning outcomes. Also, Moore (1990) emphasizes the importance of hypothesis generation and empirical studies.

Powers and Mitchell (1997) examined one graduate course which was offered entirely over the Internet to investigate student performance in and perceptions of a virtual classroom. Four major themes related to student perceptions and performance emerged as a result of the study: peer support, student to student interaction, faculty-student interaction and time demands. The study shows that a true community of learners can be developed in a web-based course despite the fact that students interact with each other from different geographical locations. The unique nature of technology and anonymity was perceived as one possible reason for this community building. The cultural diversity contributed to the quality of student interactions that might not have developed otherwise. Daugherty and Funke (1998) examined the perspectives of 76 university faculty and 19 graduate and 36 undergraduate involved in web-based instruction though a survey. Findings of the survey revealed that in a web based instruction, students benefit from a) meaningful learning of technology through the integration of course content and computer applications, b) increased access to the most current and global content information available, c) increased motivation, and d) convenience.

Mikulecky (1998) examined the characteristics of student discussion among three different settings (online electronic discussion, onsite jigsaw group discussion, and an onsite full-class discussion) in graduate-level courses about adult literature. He found that electronic discussion demonstrated such interaction patterns as 1. richer descriptions of situations, dilemmas, and solutions, 2. more detailed, and thoughtful counter-evidences, responses, questions, or suggestions, comments used to link one's experience and synthesize new thoughts, and 3. "sharing troubling professional experiences and providing support to others" (Mikulecky, 1998: 8). He also speculated that due to the nature of electronic discussion where response time was delayed, students were able to produce more thoughtful, and introspective comments and feedback. McIsaac, Blocher, Mahes and Vrasidas (1999) conducted research on student interactions and student course evaluations in six web-based courses taught at ASU between 1996 and 1998. They asked several questions to students and teachers separately to investigate their perspectives about web-based instruction. The results showed that students' interactions were goal-oriented and students felt isolated when there was a lack of immediate feedback. Student responses also showed that web-based courses were particularly valuable to independent, motivate learners; learners who wanted an alternative face-to-face instruction and previously unserved populations. Researchers concluded that providing immediate feedback, participation of the instructor in the discussions, promoting interaction and social presence, using collaborative learning strategies are some of the strategies that distance educators may want to incorporate into web-based instruction.

Very few studies have been conducted so far that investigate students' perceptions regarding interaction and participation in web-based courses. Most studies so far about technology usage in classrooms focused on videoconferencing, teleconferencing and web-discussions as supplementary classroom application. Therefore, in order to help improving web-based instruction, we thought it was important to find out how students perceive interaction in classrooms offered solely on the web where classroom discussions are held via electronic conferencing software and how student perceptions affect their participation in the electronic discussions. To this end, we analyzed the different components of classroom interaction in three web-based graduate courses using SiteScape Forum (SSF) as the main medium of course delivery, offered by Language Education Department at a large Midwestern University in the United States in Fall 2000. In this study, we aimed to examine different components of interaction whereas the previous studies focused one or two of those components only. Online course evaluation results and follow-up email survey are used for data collection.

Our research questions were:
1. How do students perceive classroom interaction in web-based courses as opposed to the interaction in traditional face-to-face classrooms?
2. How do lack of social restraints in web-based courses affect students' perception and participation?

Theoretical Framework

Based on the belief that physical separation of the learner and instructor contributes to "psychological and communication gap", Moore developed "the theory of transactional distance", emphasizing the effect of distance on teaching as well as learning behaviors, forms of interaction, communication, instruction, and curriculum (Moore, 1991 cited in Amundsen, 1993; Moore, 1990; Moore, 1993; Moore & Kearsley,1996). Moore identified three components of distance education: dialogue, structure, and autonomy. Dialogue refers to the interaction via actions, words, or ideas between the instructor and learner or among learners. The nature and extent of dialogue depends on the course design, subject

matter, medium of communication, personalities of instructor, learning styles of learners, and size of the class. Moore speculated that when everything else is controlled, chances are interaction between instructor and learners in a small class will be more frequent than in a large class (Moore & Kearsley, 1996). He also suggests that learners are likely to interact more with instructor of the same mother tongue. Finally, Moore (1993) proposed that when similar media are used, graduate courses in social sciences and education tend to be more interactive with project work than those in sciences and mathematics that demand teacher direction.

Structure is the flexibility of course organization and design, including whether or not setting course registration date, assignment due date, using packaged course materials, teaching methods/strategies, objectives, or grading/evaluation (Amundsen, 1993; Chen & Willits, 1999; Moore, 1990). Chen and Willits' study (1999) probing distance students' perception of structure also examined learning activities, and requirements. According to Moore, structure is determined by the educational philosophy of instructor, academic level of the learners, course content, as well as communication media (Moore & Kearsley, 1996).

Autonomy, on the other hand, is the extent to which learners have control over "learning objective, implementation procedure, resource, and evaluation" (Moore, 1990:13) with the belief that learners are capable of making decision for their learning. The degree of autonomy usually differs from program to program. Moore hypothesized the tendency that "the greater the structure and the lower the dialogue in a program the more autonomy the learner has to exercise" (Moore, 1993:27).

Holmberg (1997) also places emphasis on interaction between learners and instructor. He believes distance education should be a "guided didactic conversation", thus learner-teacher dialogue is fundamental to distance education Holmberg maintains that learning stems from motivation resulting from personal relationship with the instructor.

Similarly, Verduin and Clark also follow Moore's transactional distance theory, but they expanded the definitions of the three components (cited in Amundsen, 1993). Dialogue is defined as support for the learner, ranging from providing guidance and directions for assignments to emotional or motivational support. Departing from Moore's definitions of structure, Verduin and Clark consider learner's "specialized competence" inseparable from the structure of a distance course because high level structure is needed before learners are capable of setting their own learning objectives, methods, or evaluation (Verduin and Clark, cited in Amundsen, 1993:69).

The Study

Methodology

The Online Courses

For this study, data was collected from three online courses offered at a large Midwestern University in the United States in Fall 2000 semester. The medium of instruction and course delivery was SiteScape Forum (SSF), asynchronous web-based computer conferencing software that enables multi-users to share documents as well as hold threaded discussion. SSF was mainly used by students and instructors to post course information, assignments, and comments about readings and share professional experiences. In addition to the forum, each course had a web site that contained course information and syllabus and used email for personal interaction between the instructor and students and among students.

Since all three courses were highly discussion oriented, each student was required to participate online discussions at least twice every week. Classroom participation included students posting classroom related questions, comments and feedback for peers. In each class, participation contributed between 20 to 50 % of total grades. While two courses incorporated online real-time chat sessions to facilitate interaction among students as well as between the instructor and students, the third course integrated an online virtual cafe to facilitate social interaction among students.

Population

Participants were 43 students enrolled in the aforementioned three three-credit hour graduate level online courses (Table 1).

Table 1. Number of participants in each course

The Course Title	N
Course A	20
Course B	6
Course C	17

Out of 43 students, 31 of them (72%) were domestic and 12 (28%) of them were international students. There were 1 Dutch, 4 Korean, 1 Japanese, 1 South African, 2 Canadians, 1 Turkish, 1 Lebanese and 1 Australian student. Of the whole population, 9 students were non-English speaking students. Thirty-three of the students (77%) were in-service teachers at the time they took the course and 10 (23%) of them were not teaching.

The whole population was consisted of 34 off campus (79%) and 9 on campus (21%) students. The off-campus students were scattered all around the U.S. and other countries such as Lebanon, Korea, Sweden, Japan, Mexico, Taiwan, Kuwait, Honduras and Marshall Islands.

Data Collection Procedures

Mean, and standard deviation of each item in the following surveys were calculated by SPSS, but only items that were related to this study were reported and discussed.

EvalOnline_Survey: The online course evaluation was provided by EvalOnline survey, an electronic system supported by the university in which instructors can choose customized evaluation items from a pool of questions already set up by the Evalonline system. Since, the system did not require users to reveal their identities upon login, the online evaluation survey forms were filled out by the students anonymously. The exact same online evaluation form was sent to the students of the three online courses at the end of the semester and students were informed that their input was important to improve web-based instruction and that their feedback was going to be used for this current study. The evaluation forms were consisted of 55 Likert scale questions and 6 open-ended questions.

Follow-up_email_survey: Upon students' completion of the course, a follow-up email survey was sent to them along with an explanation of the current study. Participants were assured that all the data was going to be kept strictly confidential. The survey was consisted of questions about demographic data, 13 Likert scale, 3 multiple choice and 4 open-ended questions. To detect possible agreement bias, some statements are negatively worded.

Data Analysis & Findings

We will discuss data analysis and findings in relation to themes and categories emerged from our data. They are 1) participation, 2) interaction, 3) quantity of feedback from peers, 4) quantity of feedback from the instructor, 5) quality of feedback from peers, 6) quality of feedback from the instructor, 7) immediacy of response from peers, and 8) immediacy of response from the instructor.

Of the 43 students enrolled in the three web-based courses, 27 completed the Evalonline survey (percentage of response 62.8). Because one student was enrolled in both L630, he only completed one follow-up e-mail survey. Therefore, 20 out of the 42 students completed the follow-up e-mail survey (percentage of response 47.6).

1) Participation:

Participation involved students' postings in the SSF and their initiation of discussion topics and replies to their instructors and peers. Electronic conferencing through the SSF is the way students and the instructor come together to brainstorm, discuss and ask questions in the three web-based courses involved in this study. In other words, electronic conferencing is an opportunity to communicate and interact and it constitutes half of students' overall course grade.

Three items in EvalOnline questionnaire addressed the issue of student participation and how the instructor encouraged student participation. Comments made in the EvalOnline showed a general satisfaction towards classroom participation (Table 2).

Table 2. EvalOnline student perceptions towards participation in a web-based course

EvalOnline questions	N=20					Mean	SD
	S.A.	A	U	D	S.D.		
The instructor encouraged me to offermy ideas and opinions.	66.7%	14.8%	3.7%	14.8%	0%	4.3	1.1
It was easy to participate in this course.						4.6	.7
The instructor encouraged me offer my ideas and opinions	77.8%	18.5%	0%	3.7%	0%	4.7	.7

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Students felt that SSF provided everyone with equal opportunities to participate.

> **"Electronic conferencing in the SSF is great. I love to read other classmates' responses to assignments. I think discussion about assignments is a great learning opportunity. This is what makes online classes better than onsite classes."**

In the follow-up email survey, two items addressed students' perceptions towards participation in a web-based course as opposed to traditional face-to-face course. 75% of the students who responded to the survey agreed and 25% disagreed over the statement

that online conferencing (SSF) in web-based education format enhanced their participation compared to traditional, face-to-face courses. 55% of the students agreed; 30% disagreed that they posted more messages than the required number. 15% of the respondents were undecided (Table 3).

Table 3. Student perceptions towards participation in a web-based course

Follow-up e-mail survey questions	N=20					Mean	SD
	S.A.	A	U	D	S.D.		
The online conferencing in web-based education format enhanced my participation compared to traditional face-to-face course.	15%	60%	0%	25%	0%	3.7	1.0
I usually posted more messages than the required number of messages.	40%	15%	15%	30%	0%	3.5	1.5

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Most of the students indicated that they tried to post as many messages as possible; however, because of the time constraint and the large number of messages, they mostly posted the required number of messages. Students from the larger classes mentioned that there were too many postings and they responded only to the ones that they found interesting. The requirement of posting at least two messages per week seemed to encourage student participation.

> **If I was interested in the discussions, I responded regardless of number. I was, however, aware of the posting requirement and sought to meet it. If it had been higher (say three postings a week) I probably would have tried to meet that requirement also. (follow-up email survey)**
>
> **Because it is so much a part of your participation grade, and you have time to consider what you are going to write before you post it, I believe I have commented more and participated more than in a face-to-face course where I tend to do more listening and less talking. With the online conferencing, I like the advantage of being able to take the time to consider what you want to "say" before you "say" it in writing. (follow-up email survey)**

Another important point raised by the students is that they feel less intimated in participating classroom discussions in web-based classes than in face-to-face classes.

> **I am very shy in a traditional classroom format. (follow-up email survey)**
> **I felt less intimidated in the web-based class in terms of speaking about controversial issues. (follow-up email survey)**
>
> **I write better than I speak, so the online format works well for me. (follow-up email survey)**

2) Interaction:

Interaction is a major part of web-based course participation. Moore (1989) discusses three different types of interaction: learner-instructor interaction, learner-content interaction and learner-learner interaction. McIsaac, Blocher, Mahes, and Vrasidas (1999) indicate that "interaction that occurs between students and teachers, as well as between groups of students is critical in stimulating discussion and providing the needed

motivation to students who often feel isolated from the rest of the class". Therefore, in this study we looked at students' perceptions regarding their interaction with their instructor and peers in the web-based classroom they took.

Five items in EvalOnline questionnaire addressed student perceptions toward student-instructor interaction and three items addressed the interaction among students (Table 4 and 5).

Table 4. Student perceptions towards student-instructor interaction in web-based courses

EvalOnline questions	N=20					Mean	SD
	S.A.	A	U	D	S.D.		
Email helped to promote communication Between me and the instructor	37%	44%	4%	15%	0%	4.0	1.0
The instructor kept me informed how I wasdoing in the course.	55.5%	40%	3.7%	0%	0%	4.5	.6
The instructor responded promptly to the students.	66.7%	14.8%	18.5%	0%	0%	4.5	.9
The instructor communicated effectively through electronic means.	63%	14.8%	3.7%	18.5%	0%	4.2	1.2
My instructor was available to answer questions	77.8%	18.5%	3.7%	0%	0%	4.7	.5

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Table 5 Student perceptions towards student-student interaction in web-based courses

EvalOnline survey questions	N=20					Mean	SD
	SA	A	U	D	SD		
Online conferencing helped to promote communication between students.	48.1%	40.7%	11.1%	0%	0%	4.4	.7
I felt a lot of support from my classmates in this course.	48.1%	18.5%	14.8%	18.5%	0%	4.0	1.2
I learned a lot from my classmates in this course.	55.6%	22.2%	3.7%	18.5%	0%	4.1	1.2

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Comments made in the EvalOnline revealed that students felt more comfortable interacting with their peers when the classroom size was smaller. The three classes involved in this study varied in terms of classroom size and students coming from larger

classes especially mentioned the impact of size on interaction. Some of the comments were:

> **The department should limit the number of students who can take the class at the same time. When there are too many students, communication is rather difficult. (follow-up email survey)**
>
> **I think there were too many participants. If there's limitation to the number of participants who can attend to the course, we can keep much more intimate relationship between others in the course. I think there must be over 35 students in this course, so I couldn't get enough chances to know others better. If possible, I wanted to read all the others' projects, but it was impossible. So I want this course limit the number of participants. (follow-up email survey)**
>
> **I enjoyed working with a small group. The classmates got along well and were very supportive of one another. It was a very welcoming atmosphere. (follow-up emails survey)**

In the follow-up email survey, one item addressed both student-instructor and student-student interaction. 80% of the students who responded to the survey (N=20) disagreed the statement that web-based course format constrained their interaction with the instructor whereas 15% agreed and 5% was undecided. Similarly, 80% of the students who responded to the survey disagreed at the statement that web-based course format constrained their interaction with their peers (Table 6).

Table 6. Student perceptions towards participation in web-based courses

Follow-up e-mail survey questions	N=20					Mean	SD
	S.A.	A	U	D	S.D.		
Web-based course format constrained interaction with my peers.	0%	15%	5%	30%	50%	1.9	1.1
Web-based course format constrained interaction with my instructor.	0%	15%	5%	35%	45%	1.9	1.1

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Overall, students indicated their satisfaction with interaction in the web-based course they took. However; there were also concerns that especially social interactions were more limited in a web-based course than in face-to-face traditional classrooms:

> **My class interaction was not restrained, but social opportunities that are also a part of learning were sometimes more limited than in a traditional setting. (follow-up email survey)**
>
> **While the instructor of my web-based course was exceedingly welcoming, it was more difficult to develop the social connection that comes with a face-to-face setting when the classes are small and intimate. Face-to-face settings in which the classes are large make it more difficult than web-based classes to connect with the instructor. (follow-up email survey)**

Once again, the issue of classroom size was raised as an impeding factor for interaction. In the follow-up email survey, one of the participants stated "I think it gets really exhausting to follow the threads and add something too when the classes are quite large, so I prefer smaller conference sections of five to six students'.
Another concern that students raised was the engagement of the instructor in the online discussions. Students feel that instructors should be more active in the discussions and the students should feel his/her existence.

3) Quantity of feedback from peers:

Quantity of feedback from peers was defined as the amount or number of responses from classmates via e-mail correspondence or replies at the SSF. Our finding indicated that the mean for item 2a in the follow-up e-mail survey was 2.7, suggesting that participants tended to be uncertain or undecided whether they received more feedback from the peers in web-based courses or face-to-face ones. In other words, they tended to agree that there was little difference between the amount of feedback from classmates in web-based and face-to-face classes (Table 7).

Table 7. Comparison of quantity of feedback from peers between web-based and face-to-face classes

Follow-up e-mail survey questions	N=19					Mean	SD
	S.A.	A	U	D	S.D.		
I received more feedback inface-to-face courses than in web-based courses.a. from my peers	21.1%	15.8%	10.5%	15.8%	36.8%	2.7	1.6

(Note: N=Number of response, SA=Strongly agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly disagree)

Ten participants (52.6%) agreed that they received more feedback from peers in web-based courses. For example, one participant indicated, "when I took face-to-face courses the instructors could only meet with us during office hours. I'd occasionally get together and study with my classmates, but this feedback was not necessarily more than I receive in online courses." Another participant wrote, "because of the amount of written feedback and constant communication between classmates in the SSF, I believe I have received more in amount and value of feedback than I ever had in face-to-face courses." She further elaborated by saying that "in face-to-face courses, I really don't remember having much feedback from peers at all like I do with the web-based courses, which are really dependent on peer and instructor feedback to operate smoothly."

Even though seven participants (36.9%) believed that they received more feedback from peers in face-to-face classroom, they did not give any specific comments.

4) Quantity of feedback from the instructor:

Quantity of feedback from the instructor was defined as the amount or number of responses from the instructor via e-mail correspondence or replies at the SSF. Our finding suggested that participants tended to be uncertain or undecided whether they received more feedback from the instructor in web-based courses or face-to-face ones. In other words, they tended to agree that there was little difference between the amount of feedback from instructor in web-based and face-to-face classes (Table 8).

Table 8. Comparison of quantity of feedback from the instructor between web-based and face-to-face classes

Follow-up e-mail survey questions	N=19					Mean	SD
	S.A.	A	U	D	S.D.		
I received more feedback in face-to-face courses than in web-based courses from my instructor	21.1%	5.3%	36.8%	36.8%	21.1%	2.7	1.6

(Note: N=Number of response, S.A.=Strongly agree, A=Agree, U=Undecided, D=Disagree, and S.D.=Strongly disagree)

Eleven participants (57.9%) reported that they received more feedback from the instructor in web-based courses. However, they did not provide any specific comments. Two participants said that the quantity of feedback from instructor in web-based courses varied from class to class. One participant said, "each professor is different in the amount of feedback given. I got the most feedback ever from one of my online instructors. More than in any face-to-face class. But other instructors seem to busy." Another participant also pointed out,

In a face-to-face setting peer feedback sometimes to go through the instructor. In my experience, there is more instructor feedback in a graduate-level seminar-type setting; lectures of course are another matter. Some instructors encourage interaction, others don't. (Follow-up e-mail survey)

5) Quality of feedback from peers:

Quality of feedback from peers was defined as e-mail correspondence or replies at the SSF with richer descriptions of situations, dilemmas, and solutions, or more detailed, and thoughtful counter-evidences, responses, questions, or suggestions, comments used to link one's experience and synthesize new thoughts, or "sharing troubling professional experiences and providing support to others" (Mikulecky, 1998: 8). We found that participants tended to agree that they received more valuable feedback from the peers in web-based courses than in face-to-face ones (Table 9).

Table 9. Comparison of quality of feedback from peers between web-based and face-to-face classes

Follow-up e-mail surveyquestions	N					Mean	SD
	19						
	S.A.	A	U	D	S.D.		
I received more valuable feedback in face-to-face courses than in web-based courses from my peers	0%	10.5%	10.5%	31.6%	47.4%	1.8	1.0
I received constructive feedback about issues I raised in the SSF from my peers.	20						
	S.A.	A	U	D	S.D.		
	45.0%	45.0%	5.0%	5.0%	0%	4.3	.8
I received constructive feedback about my assignments from my peers	20						
	S.A	A	U	D	S.D		
	30.0%	40.0%	10.0%	10.0%	5.0%	3.9	1.2

(Note: N=Number of response, S.A.=Strongly agree, A=Agree, U=Undecided, D=Disagree,

and S.D.=Strongly disagree)

More than 15 participants (75%) reported that they received feedback of higher quality in from peers in web-based courses. Participants generally used words such as open, personalized, well-though, helpful, and honest to describe the kind of comments they got from their peers in online classes. One participant admitted that "interaction is slower, however people tend to be more upfront and honest because we don't see each other face-to-face…in a traditional face-to-face class I am the kind of person who is often quiet because I am afraid that what I say will be unintelligent or misinterpreted. I find myself more daring and willing to post my ideas in a web-based class." Another participant reported, "I think I would give more organized thought to the discussion in web-based classes." Still another participant wrote,
After I read postings, I take the time to really think about them before responding. I think this leads to more meaningful discussion. In a real time classroom, many great points are left unsaid because people don't think of them until after class. (follow-up e-mail survey)

Another participant pinpointed that "the most valuable part of an online course is getting to read other classmate's assignments. It is great to gain knowledge from the brilliant classmates in your class through reading their assignments. Through online courses the brilliant students may learn themselves but they can now help all the other students learn." Another participant also wrote, "I love to read other classmates responses to assignments. I think discussion about assignments is a great learning opportunity. This is what makes online classes better than onsite classes." Another participant elaborated more on the same point,

> **I rarely if ever got feedback from peers in face-to-face classes so the feedback in online courses is definitely better. Some of my classmates have more experience teaching than me. Some have experiences I haven't…I learn a lot from all of these people in online classes. (follow-up e-mail survey)**

One participant wrote, "I felt that I was given the opportunity to learn more from my peers in the web-based class. There was a wide range of nationalities and expertise. There usually isn't that much in the traditional class setting. I traveled the world without leaving home. The polite "netiquette" was very professional and appealing." Most participants appreciated the opportunity of getting feedback from in-service teachers in web-based classroom. One wrote, "I think the feedback from the web-based classes was more valuable since the web-based classes often consist of people who are already teaching. As a pre-service teacher, it was incredibly valuable to have the opportunity to discuss issues with people in the field." Some participants reported that since they spent more time revising their postings before entering them to the forum, their comments tended to be more well-thought. One participant reported, "it takes a lot of time to write all responses clearly and to read everyone's interactions. But you get more from written interaction than from face-to-face interaction. You have time to think deeply before responding, which is different in face-to-face classes. You learn together as one large group in online classes, where as in face-to-face classes the instructor is more the giver of information and the students just sit and listen to lectures."

Still two participants indicated they got more valuable feedback in face-to-face classroom. One indicated that "on the occasion that we studied together, I got more valuable information from my peers." Another wrote, "…not every course requires peer feedback on individual assignments. And when they do, many peers try to be nice and polite. Some do give great feedback, though."

6) Quality of feedback from the instructor:
Quality of feedback from the instructor was defined as e-mail correspondence or replies at

the SSF with richer descriptions of situations, dilemmas, and solutions, or more detailed, and thoughtful counter-evidences, responses, questions, or suggestions, comments used to link one's experience and synthesize new thoughts (Mikulecky, 1998). We found that participants tended to agree that they received more valuable feedback from the instructor in web-based courses than in face-to-face ones (Table 10).

Table 10. Comparison of quality of feedback from the instructor between web-based and face-to-face classes

Follow-up e-mail surveyquestions	N					Mean	SD
	19						
	S.A.	A	U	D	S.D.		
I received valuable feedbackin face-to-face courses than in web-based courses from my instructor.	0%	10.5%	36.8%	31.6%	21.1%	2.4	1.1
I received constructivefeedback about issues I raised in the SSF from the instructor.	20						
	S.A.	A	U	D	S.D.		
	35.0%	45.0%	10.0%	10.0%	0%	4.1	.9
I received constructive feedback about my assignments from the instructor.	20						
	S.A	A	U	D	S.D		
	35.0%	55.0%	5.0%	0%	5.0%	4.2	.9

(Note: N=Number of response, S.A.=Strongly agree, A=Agree, U=Undecided, D=Disagree, and S.D.=Strongly disagree)

More than ten participants (50%) reported that they received more valuable feedback in web-based courses. One participant wrote, "the instructor encouraged us properly to participate in this course actively, and gave us lots of feedback which made us specify and deepen our thoughts."

Even though some participants did not specify whether the kind of feedback in web-based courses were more constructive than in face-to-face ones, they did show the desire to receive more feedback from the online instructor. One wrote, "I think the instructor could be more effective by providing more comprehensive guidance/instruction for course assignments and more extensive feedback on the assignments." Another said, "the instructor was a little bit too concentrated on the role of a facilitator…I would have loved to hear per personal opinions on the subject."

7) Immediacy of response from peers:

Immediacy of response from peers was defined as the amount of time delayed between the initiation of a posting or e-mail and the reception of responses from classmates. Our finding suggested that participants tended to agree that they received more prompt feedback from the peers in web-based courses than in face-to-face ones (Table 11).

Table 11. Comparison of immediacy of response from peers between web-based and face-to-face classes

Follow-up e-mail survey questions	N=19					Mean	SD

	S.A.	A	U	D	S.D.		
I received more immediate feedback in face-to-face courses than in web-based courses from my peers.	5.3%	5.3%	31.6%	21.1%	36.8%	2.2	1.2

(Note: N=Number of response, S.A.=Strongly agree, A=Agree, U=Undecided, D=Disagree, and S.D.=Strongly disagree)

Eleven participants (57.9%)agreed that they received feedback more promptly from peers in web-based courses. However, they did not give specific comments.

Still two participants reported that they received feedback more promptly from peers in face-to-face classes. One participant wrote, "interaction between students is there, but not as direct as during face-to-face courses." Another wrote, "interaction online was different than in a real world classroom in that thoughts were not spontaneous. At times, that can be a plus but sometimes spontaneity can be enlightening."

8) Immediacy of response from the instructor:

Immediacy of response from the instructor was defined as the amount of time delayed between the initiation of a posting or e-mail and the reception of responses from the instructor. We found that participants tended to agree that they received feedback more promptly from the instructor in web-based courses than in face-to-face ones. (Table 12).

Table 12. Comparison of immediacy of response from the instructor between web-based and face-to-face classes

Follow-up e-mail surveyquestions	N=19					Mean	SD
	S.A.	A	U	D	S.D.		
I received more immediate feedback in face-to-face courses than in web-based courses from my instructor.	5.3%	21.1%	31.6%	15.8%	26.3%	2.6	1.3
Follow-up e-mail surveyquestions	**N=27**					**Mean**	**SD**
	S.A.	A	U	D	S.D.		
The instructor responded promptly to the students	66.7%	14.8%	18.5%	0%	0%	4.5	.8
The instructor returned assignments in a timely manner.	N=27						
	S.A	A	U	D	S.D		
	55.6%	14.8%	7.4%	22.2%	0%	4.0	1.3

(Note: N=Number of response, S.A.=Strongly agree, A=Agree, U=Undecided, D=Disagree, and S.D.=Strongly disagree)

Twenty-two participants (81.5%) indicated that they the instructor responded promptly to students regarding questions about assignments or clarification of the course, while nineteen (70.4%) reported that the instructor returned assignments in a timely manner. One participant wrote, "I think that feedback about assignments is exceptionally important, especially when there is another assignment due soon after. I always felt that I received feedback in a timely manner that was very helpful." Another responded, "the

instructor was very friendly and approachable. I appreciated her prompt responses to my e-mails and her understanding and patience when difficulties arose." Another participant cautioned that "the feedback in a face-to-face class usually is not immediate due to the number of students in the class."

Of the six participants who indicated that the instructor did not return assignments in a timely manner, one participant pinpointed that,

> **The instructors did an okay job of providing feedback. I do think that prompt and frequent feedback (in the form of emails) regarding class assignments and questions about the course makes a huge difference in terms of whether or not students feel that the teachers are involved. (follow-up e-mail survey)**

Another also wrote, "everything seems to take longer in a web-based course including getting feedback from instructor and peers. You must have a good level of patience, something with which I sometimes struggle." Other participants indicated that the fact that the instructor is present in person influences the immediacy of feedback they got. One pre-service teacher wrote, "the feedback in a face-to-face class usually is more immediate since the person is physically there."

Still some participants pinpointed that the immediacy of response from instructor varied from class to class. For example, one wrote,

> **The online characteristic doesn't affect the immediacy of feedback from teachers. Some online courses I got extremely fast responses. Sometimes within the hour of an email I would get an answer. But now I am waiting days and weeks. It depends on the instructor. Online classes can be faster if you have a good instructor. (follow-up e-mail survey)**

Conclusion

The findings of our study suggest similar results to the studies conducted before. A true social community can be developed in web based courses despite the differences of participants' geographical locations. Powers and Mitchell (1997) mention the unique nature of technology and anonymity as one possible reason for this community building. Students' remarks such as this support this hypothesis:

> **I think people are more vocal in web-based classes because they are not afraid to type what they think. It is easier then speaking up in a class. I do feel that in order to pace yourself on the web based classes you must be motivated, which is not always the case for face-to-face classes. (follow-up email survey)**

Our study suggests that interaction in web-based courses tend to be richer and of more quality. Our findings suggested that 1. Participants tended to agree there was no difference regarding quantity of feedback from peers in web-based courses or face-to-face courses. 2. Participants tended to agree there was no difference concerning the amount of feedback from the instructor in web-based courses or face-to-face courses. 3. Participants tended to agree that they received more valuable feedback from the peers in web-based courses than in face-to-face courses. 4. Participants tended to agree that they received more valuable feedback from the instructor in web-based courses than in face-to-face courses. 5. Participants tended to agree that they received more prompt feedback from the peers in web-based courses than in face-to-face courses. 6. Participants tended to

agree that they received feedback more promptly from the instructor in web-based courses than in face-to-face courses. In summary, regarding quantity of feedback from peers and instructor, participants tended to agree that there was little difference between online and onsite courses. Some participants pinpointed that the quantity of feedback was not determined by the type of course delivery (online vs. onsite), but instead depended on the personality of the instructor, which is consistent with Moore's idea that the nature and extent of interaction in online courses depends upon the personality of the instructor. Concerning quality of feedback from peers and instructor, participants tended to agree that they received more constructive feedback in online than onsite courses. This is consistent with Mikulecky's (1998) finding that with the delay of response time, students could generate more thoughtful responses in web-based courses. As far as immediacy of response from peers and instructor is concerned, participants tended to agree that they received responses more promptly in online than onsite courses.

Limitations

The study could have been stronger if data could be collected from all the students. EvalOnline surveys were put on the web very soon after the courses were completed and students were informed about the purpose of the project with an email and asked to fill out EvalOnline surveys. However, in total the response rate was 62.8%.

The follow-up email survey was sent to each student one month after the courses were completed. The response rate to the follow-up email survey was again limited with 47.6%. Collecting data from the whole population naturally could have revealed more valuable data.

Another limitation of our study was its retrospective nature. Data was collected after the courses were completed and some of the email correspondences were deleted. If we did have all the emails, we could classify them under the categories we had; however, the lack of the majority of emails did not allow us use this valuable resource.

Recommendations

For educators

In light of findings from this study, we recommend that web-based instructors provide high quantity of feedback and guidance to students in order to foster an intimate atmosphere of a learning community. With the convenience and accessibility of e-mails, listservs and forums, instructors should be able to provide sufficient feedback to students with ease. Since results from this study also indicated that the quality of feedback from peers and instructor in web-based courses was superior to that of face-to-face courses, onsite instructors could consider incorporating web-based asynchronous discussion to their face-to-face classroom.

For researchers

The components of quantity, and quality of feedback, as well as immediacy of responses in web-based courses need to be further investigated in future studies because feedback or responses are still too broad terms to fully describe the kind of interaction in any classroom. Feedback or responses range from postings at the SSF about readings, assignments, personal problems/concerns to e-mail responses to questions about class participation/grades, technology, the course content or schedule. Consequently, future research should examine how the quantity, quality or immediacy of feedback or response from peers or the instructor in web-based courses might differ in relation to these components and to what extent they differ.

REFERENCES

Amundsen, C. (1993). The evolution of theory in distance education. In Theoretical

principles of distance education, D. Keegan. (Ed.), (pp. 61-80). New York: Routledge.

Chen, Y., & Willits, F. K. (1999). Dimensions of educational transactions in a videoconferencing learning environment. The American Journal of Distance Education, 13(1), 45-59.

Holmberg, B. (1997). Distance-education theory again. Open Learning, 12(1), 31-39.

McIsaac, M. S., & Blocher, J. M., & Mahes, V., & Vrasidas, C. (1999). Student and teacher perceptions of interaction in online computer mediated communication. Educational Media International, 36, (2), 121-31.

Mikulecky, L. (1998). Diversity, discussion, and participation: Comparing a web-based and campus-based adolescent literature classes. Journal of Adolescent & Adult Literacy, 42(2), 2-.

Moore, M. (1990). Recent contributions to the theory of distance education. Open Learning, 5(3), 10-15.

Moore, M. (1993). Theory of transactional distance. In Theoretical principles of distance education. D. Keegan. (Ed.), (pp. 22-38). New York: Routledge.

Moore, M., & Kearsley, G. (1996). Distance education: A systems view. Belmont, CA: Wadsworth.

Partee, M. (1996). Using email, web sites and newsgroups to enhance traditional classroom instruction. T.H.E. Journal, 23, (8), 79-82.

Powers, S. M., & Mitchell, J. (1997). Student perceptions in a virtual classroom environment. Paper presented at the Annual meeting of the American Educational Research Association, Chicago, IL.

Smith, P. L., & Dillon, C. L. (1999). Comparing distance learning and classroom learning: Conceptual considerations. American Journal of Distance Education, 13 (2), 6- 23.

Westbrook, T. S. (1999). Changes in student attitudes toward graduate instruction via web-based delivery. Journal of Continuing Higher Education, 47, (2), 32-38.

Zhang, S., & Fulford, C. P. (1994). Are interaction time and psychological interactivity the same thing in the distance learning television classroom? Educational Technology, 34, (6), 58-64.

PRINT RETURN