

On-line Learning Communities and Higher Education: Factors Supporting Collaborative

Knowledge-Building

David S. Stein, Ph.D., Principal Investigator
The Ohio State University
College of Education
283 Arps Hall
1945 North High Street
Columbus, Ohio 43210-1120
(614) 292-0988; Fax: (614) 292-0102
Stein.1@osu.edu

Joe E. Wheaton, Ph.D., Principal Investigator
The Ohio State University
College of Education
356D Arps Hall
1945 North High Street
Columbus, Ohio 43210-1172
(614) 292-8313; Fax: (614) 292-4255
Wheaton.3@osu.edu

EXECUTIVE SUMMARY

This mixed methods study included 201 students from nine undergraduate or graduate courses from either Franklin University, The Ohio State University, and Wright State University. The courses varied in the degree of distance, level of structure, and amount of interaction designed into the course. The purpose of the study was to identify factors that influenced student satisfaction with their learning in these courses. Specifically, the study examined the following research questions:

- Do structure, interaction, degree of distance, or characteristics of the learner affect learning in a distance environment?
- Is learning orientation related to degrees of distance?
- Is learning orientation related to educational philosophy?
- How do learners create, maintain and use a learning community to foster individual and collective learning?

The first three research questions were examined using quantitative methods, with support provided from focus group and individual interviews with volunteers from the courses. The fourth research question was examined in depth qualitatively through the focus groups and interviews.

Four instruments were administered to collect the quantitative data. They were: (a) Satisfaction Questionnaire (see Appendix 1), (b) Demographics Questionnaire (see Appendix 2), (c) Learning Orientation Questionnaire (Martinez, 1996), and (d) the Philosophy of Adult Education Inventory (Zinn, 1983).

The variables used in the quantitative analyses were (a) satisfaction with knowledge gained, (b) structure of the course, (c) distance, (d) interaction, (e) learning orientation, and (f) education philosophy.

Research Question 1: Do structure, interaction, degree of distance, characteristics of the learner, or the expectations of instructors affect learning in a distance environment?

Using logistic regression and stepwise entry, we found that structure was highly related to satisfaction with knowledge gained and that interaction was also related, although less so than structure. None of the other variables were statistically significant. Focus group and interview comments from the learners support the quantitative findings with the exception of distance. Where learners did not feel the social presence of the instructor or other learners, learning was negatively impacted.

Research Question 2: Does the learning orientation of learners vary across degrees of distance?

Correlations between learning orientation and the level of distance were not statistically significant (Cramer's $V = .15$). The qualitative data collected again supported this finding. Learners chose the level of distance for reasons that had nothing to do with their learning orientation.

Research Question 3: Is learning orientation related to educational philosophy?

Again, the correlations for this question were not statistically significant (Cramer's $V = .18$). Qualitative data was not collected for this question.

Research Question 4: How do learners create, maintain and use a learning community to foster individual and collective learning?

Learners in general defined learning communities as involving learners with shared learning goals, exchanging ideas, assisting each other, and having an element of trust among the learners within the community. Again, structure of the course played an important role; if the course required learners to work together, community often developed. Learners indicated that courses requiring learners to interact on a personal level early in the course were more likely to

develop into learning communities. The degree of distance within the course did not make a difference in how and whether these learning communities developed. Rather, a sense of trust and of shared hardship as they worked through the course assignments was seen as more important by these learners. In situations where communications were considered inappropriate, developing communities were derailed or never began development.

The results of this study offer important considerations to those who develop and teach courses at all degrees of distance. Courses must provide sufficient structure for all learners, and interactions must be appropriate for the course content. Learners enroll in distance courses for many reasons, often having nothing to do with their learning orientation, and the needs of these learners must be considered when structuring courses. In addition, learners will develop and use learning communities to aid their learning when first given opportunities to develop personal relationships and trust with their fellow learners. Guidelines on communication among learners, and monitoring of ongoing communication within the course is crucial to developing communities.

INTRODUCTION

The overall purpose of this project was to examine whether interaction, structure or amount of distance between participants affected learners' perceptions of their learning in face-to-face, web-enhanced, or web-based courses. Additionally, the project examined whether learners' interactions led to the development of learning communities, and whether the process of building communities was different in face-to-face and web-based courses. These aspects were investigated through both quantitative and qualitative methods. The quantitative methods included logistic regression or chi square tests of independence, and their accompanying correlations, and the qualitative methods used in-depth interviews and focus groups.

The questions asked included:

- Do structure, interaction, degree of distance, or characteristics of the learner affect learning in a distance environment?
- Is learning orientation related to degrees of distance?
- Is learning orientation related to educational philosophy?
- How do learners create, maintain and use a learning community to foster individual and collective learning?

This report presents the findings of this project by first describing the instruments used to collect the quantitative data, then identifying the variables used in the analyses, and finally the statistical procedures used and the results of those analyses. The quantitative analyses were supported by the qualitative analyses, including open coding of learner comments from the individual and focus group interviews. Following the data analysis, conclusions and implications for further research are presented.

The sample consisted of undergraduate and graduate students in intact classes at three universities: Franklin, Wright State, and Ohio State. Courses were of different length, grade level, content, and percentage of online versus face-to-face interaction. These courses were

chosen to provide the highest possible number of distance education experiences. None of the courses had a prerequisite, but all were required and had at least some online, interactive components. Although all the courses were required, in the case of PF 321 at Franklin University students had a choice between a traditional face-to-face course or its online analog. In all the other courses, students had no choice as to the format of the course. All data for the study were collected between September, 2001, and June, 2002.

Instruments

The Satisfaction Questionnaire

The satisfaction questionnaire was given at the end of the course. The instrument consisted of two parts: questions 1 through 5 asked the respondent to rate the quality of the interaction in the course, and questions 6 through 10 asked about satisfaction with different aspects of the course (see Appendix 1). Of particular interest were questions 8, 9, and 10. Question 8 asked about satisfaction with knowledge gained. Question 9 focused on the satisfaction with the course structure (e.g., the activities, assignments, and instructor guidance). Question 10 asked the student to rate his or her overall satisfaction with the course. These three variables served as dependent variables in several of the quantitative analyses.

Demographics Questionnaire

Aside from the usual demographic questions, such as age, race, and gender, the demographics questionnaire sought to discover the learner's computer experience, including experience with common computer activities. To ascertain this information, used four subscales from the demographics questionnaire (see Appendix 2). The subscales were experience with (a) the Internet (questions 9 through 12; note that question 8, "experience with games," was dropped because too few people had this limited experience and games were only tangentially related to

the Internet), (b) On-line Course Assistive Software (questions 14 through 19), (c) E-mail (questions 20 through 26), and (d) Computer Comfort Level (questions 25, 27, 28, 30, 32, 34, and 35). The scale for all the questions except the Computer Comfort scale was from 0 (very inexperienced) to 4 (very experienced; midpoint of 2). The Computer Comfort scale used a slightly different scale. Except for question 25, all the questions on this scale had a “Does not apply” option; thus, the range for the Computer Comfort scale was from 1 to 4, with a midpoint of 2.5.

Learning Orientation Questionnaire

The Learning Orientation Questionnaire (LOQ), developed by Martinez (1999b) purports to measure (a) the conative and affective aspects of learning, (b) committed learning effort, and (c) learning autonomy, all of which are postulated to influence successful learning. The LOQ is a self-report, twenty-five item questionnaire that uses a seven point Likert-type scale (ranging from 1, “Not at all true of me,” to 7, “Very true of me”). Martinez posits that researchers and instructors can use the LOQ results to assist online learners in finding meaning in course content and establishing community in a virtual learning environment. In our sample, the average LOQ score was 5.0, however the LOQ is typically not used as a continuous variable but categorized into one of five types: Resistant, Conforming, Performing (Procedural), Performing (High Effort), and Transforming.

Philosophy of Adult Education Inventory

A student’s educational philosophy was measured by the Philosophy of Adult Education Inventory (PAEI; Zinn, 1983). Zinn stated that the educational philosophy is the application of “certain beliefs about life... [which] constitute the basis for a philosophy of education” (2002, p. 40). She devised the PAEI to identify certain common educational philosophies in the hope that

such knowledge would help learners and teachers communicate more effectively. The PAEI seeks to identify five educational philosophies: (a) Liberal, emphasizing content mastery; (b) Progressive, relating to the teaching of John Dewey, Progression learners use their experience to find solutions; (c) Behaviorist, points to the environment as shaping behaviors and emphasizes systematic instruction and accountability; (d) Humanist, posits that human nature is essentially positive and has unlimited potential with a resulting focus on self-direction; and (e) Radical, which sees education as a means of bringing about social change, especially as a means of combating oppression.

The PAEI is a 75 item questionnaire that asks the respondent to finish one of 15 incomplete sentences, using wording that represents each of the five philosophical types. The scores are summed for each answer and a profile developed. Although Zinn notes that a person may have more than one high score and that this is the most accurate way to identify one's philosophy, for this study we used only the highest score to keep the number of categories to a manageable level.

Focus Group Interviews and Individual Interviews

Both the focus group and individual interviews were conducted following a semi-structured format. Questions were developed and asked, with interviewers asking additional questions when clarification was needed or when new topics were introduced by the interviewees. The structured interview questions are listed in Appendix 3. Interviews were analyzed using an open coding guide developed for this project. The guide is located in Appendix 4. Through open coding of the interview transcripts, nine themes were identified, consisting of: (a) dialog, (b) structure, (c) distance, (d) learning, (e) participation, (f) barriers, (g)

community, (h) communication, and (i) reasons to enroll/not enroll in online courses. The results were used to link the quantitative and qualitative results in the following ways:

1. The themes of dialog, participation, and communication were then used to connect the quantitative data on interaction.
2. The theme of structure was used to verify the quantitative data on course structure.
3. The themes of distance and barriers were used to explain the lack of statistical significance found in the amount of distance and use of technology.

Variables

The quantitative data analyses sought to examine the effects of course structure, learner learning orientation, learner philosophy of education, and interaction within the course between students and with the teacher. The following variables were used to examine these relationships.

Knowledge Gained

The satisfaction with knowledge a learner gained from each course was measured by learner self-report on the Satisfaction Questionnaire (item 8). To meet the assumptions of the statistical analysis and to improve interpretability, we dichotomized the original five point scale by collapsing answers 1, 2, and 3 into “Dissatisfied,” and 4 and 5 into “Satisfied.”

Structure

Structure was defined as course design, including the class activities, the assignments, and the instructor’s guidance throughout the course. Structure in the course was measured by learner satisfaction with the structure in a course, as measured by the Satisfaction Questionnaire, question 9. Like Knowledge Gained, Structure had to be dichotomized using the same method.

Distance

Distance was defined by the number of times learners met in class face-to-face. Distance is an ordinal variable with three levels: (a) None – all classes were face-to-face; (b) Some – 50% of the classes meet face-to-face and 50% met on-line; and (c) All – 90% to 100% of the classes met on-line (note that although these courses may have held an orientation session, all the other classes were on-line, hence all the course interaction was entirely on-line).

Interaction

The learners' self-perceived adequacy of interaction the learners experienced was determined by summing the first five items on the Satisfaction Questionnaire to create an "Interaction Score."

LOQ and Philosophy of Education

Learning orientation and educational philosophy were defined above and will not be elaborated on here except to reiterate that because of small response rates, the Resistant learning orientation was dropped as was the Radical educational philosophy.

RESULTS

A total of 201 learners in nine courses at three different universities were asked to complete the surveys. Participation was voluntary and anonymous, which resulted in the number of responses to any given survey varying from a low of 69 (response rate of 34.3%) on the Satisfaction survey, to a high of 154 (76.6% responding) on the Learning Orientation Questionnaire (LOQ). The Philosophy of Adult Education Inventory had a slightly lower response rate (142; 70.6%), as did the demographic survey (133; 66.1%). In addition to the quantitative instruments, learners were asked if they would volunteer to participate in either focus group or individual interviews. Eighteen learners volunteered for one of the five focus

group interviews, and another eleven learners volunteered for individual interviews. These interviews were used to validate and enhance the findings from the quantitative instruments.

Overview of the Instruments

The Satisfaction Questionnaire

The internal reliability for the entire satisfaction questionnaire was an alpha of .96. The internal reliability of the Interaction Subscale (questions 1 through 5) was an alpha of .91, and the alpha of the Satisfaction portion (questions 6 through 10) was .95. Moreover, the correlation between the Interaction and Satisfaction subscales was .89. Thus, the two subscales are not only highly internally consistent, but they are also strongly correlated. All the questions were straightforward and related directly to the construct being measured, namely, adequacy of the course and the learner's satisfaction therewith. Therefore face validity is high, and it is the basis for construct validity.

The mean item score on the Interaction subscale was 3.6 (the scale had a range of 4, from 1 to 5, with a midpoint of 3.0; the minimum score is 5 and the maximum score is 25). The total subscale mean was 18. Thus, on average, the 66 persons (three students did not complete one or more of the questions) who completed the Interaction Subscale found the amount of interaction adequate for their needs.

The mean item score on the Satisfaction subscale was 3.4 (range and midpoint were the same as the interaction subscale) and the mean score for the total subscale was 17. Again, on average the learners were at least moderately satisfied with the courses they took.

Demographics Questionnaire

Of the 131 persons answering the gender question, 46 (35%) were male and 85 (65%) were female. Approximately, 54.9% (73) of the 133 persons answering the education question

had completed a BA, 24.1% (32) had completed a Master's degree, and 21% (28) had other levels of education or their answer was nonspecific (e.g., associate degrees or seeking certification). Thus, over 79% (105) of the respondents were graduate students.

The self-reported overall experience with computers by the students in the sample were evaluated using four subscales from the demographics questionnaire (see above and Appendix 2). The means for each of the subscales are displayed in Table 1. The learners were highly experienced using e-mail (item mean 3.4), but less so with the on-line course software (item mean 2.2). These two results were not surprising first, because of the widespread use of e-mail on college campuses, and second, because some of the courses met face-to-face or did not use course assistive software. Overall, learners were slightly less experienced using the Internet, however this was still relatively high (item mean 2.7). Finally, participants were very comfortable using computers (item mean of 3.1). Thus, the learners responding to these questions were, on average, comfortable and experienced using e-mail, computers in general, and, to a lesser extent, the Internet.

LOQ and Philosophy

In our sample, the average LOQ score was 5.0, however the LOQ is typically not used as a continuous variable but categorized into one of five types: Resistant, Conforming, Performing (Procedural), Performing (High Effort), and Transforming. The number of persons in each type is shown in Table 2. The most common type was Performing (High Effort) ($n=57$; 37%) and the least common type was Resistant ($n=1$; 0.6%). Because a cell with only one case cannot be used in the statistical analyses used in this study, the one case in the Resistant category was dropped.

Structure in the course was measured by the Philosophy of Adult Education Inventory (Zinn, 1983; PAEI) The philosophies derived from the PAEI are shown in Table 2. The most

common philosophies observed in the 142 persons who completed the questionnaire were Behavioral ($n=51$; 36%) and Progressive ($n=53$; 37%), and the least common adult education philosophy held by our respondents was Radical ($n=6$; 4%).

Research Question 1: Do Structure, Interaction,
Distance, or Learner Characteristics Affect Learning?

Quantitative Analysis

Structure. The dependent variable was self-reported amount of knowledge gained, a dichotomous variable (question 8 on the Satisfaction Questionnaire). The categorical independent variables were structure, distance, and the learner characteristics of learning orientation (LOQ type) and educational philosophy. The final independent variable was the Interaction subscale from the Satisfaction Questionnaire (see above), which was a continuous variable. This analysis used logistic regression with forward, stepwise entry.

The B s, their standard errors, and the odds ratios (in the column labeled $Exp(B)$) for this analysis are displayed in Table 3. Structure entered first and Interaction entered second (the interaction between Structure and Interaction was not statistically significant). None of the other variables were statistically significant. The results indicate that satisfaction with the amount of structure was highly related to knowledge gained. An odds ratio of 54.8 can be interpreted to mean that persons who were satisfied with the structure of the course were approximately 54 times more likely to be satisfied with their knowledge gained. The amount of interaction is also related to knowledge gained, although not as strongly. An odds ratio of 1.9 indicates that with the increase of one unit in interaction (recall that this is a continuous variable), a person is about twice as likely to be satisfied with the knowledge gained. Conversely, neither degree of distance, learning orientation, nor educational philosophy was influential once the structure of the course

and the amount of interaction had been entered. Thus, what seems to have the greatest affect on learning is whether the course is well planned and laid out, and, to a lesser extent, that appropriate interaction between all participants takes place.

Qualitative Analysis

The learners interviewed concur with the statistical findings: If the learner was satisfied with the structure of the course, they felt that learning was easier to accomplish and that they learned more from the course. Below are representative quotes from the interviewees:

But that format where you produced a result of your group discussion and compared it with other groups in one way or another I thought improved your learning [she nods].

Each tool has a specific purpose. I think they were designed well and accomplished that purpose...

I liked the format. It hurt but it accomplished what we were there to do, which was to experience the styles of learning they were talking about, whether it was teacher-centered or just the influences of other people on the learning. I just thought it was a beautiful way for us to understand the philosophy and evolution of adult education.

On the other hand, when learners wanted more structure, or when course assignments and activities were not clear, or the instructor did not provide clear guidance, learners reported problems. For some, the additional distance between the learner and the instructor in web-enhanced or web-based courses increased the perception that lack of structure interfered with their learning.

I could have the assignments put in one area rather than go through all the modules, pick out what was an assignment and what was just to look at because there were some parts where I was like, well now is this a deliverable, or is this something that I'm just supposed to talk about? And it was just hard to get to. If I were to structure it, I would say "Here's your assignments. There are twelve of them."

I would have to say it was ambiguous in the definition of what we were supposed to get out of it, what we are supposed to be learning, which is very

constructivist... in this case I feel the ambiguity becoming three times more ambiguous when you are in the online format because you're just fooling around and don't know where you are going.

I need more direction, um I don't learn just by you know, the loose instruction, here, go at it kind of thing... I'm more of an organizational person. I need things laid out and... this is the first class that I've taken where I feel like I have no idea what I'm supposed to be doing... and I feel like a lot of the work I am doing... isn't really counting for much other than extra credit.

I think I would say that... [because] you're not in the classroom, because you're not going there every week, it's really important to have everything, for the instructor to have everything prepared prior to the first day of class... and that includes *all* the notes and when the exam times are and things like that. With classes that were, you know, very organized with the instructor being organized and having everything listed where I can just print everything out that I needed,... I was, you know, able to really keep on top of things. With the instructors that were not prepared and would only post notes once a week, I found it was very difficult and I was not prepared. So, that would be one thing that I would definitely suggest.

They [were] just... not at all structured. There's no set way, no definite, I'm never sure what they want, so when I sit down to do my work, I'm not sure what I should be doing or what they want me to do or if I'm doing it right.... Like I said, I like more structure and only one of them [one of the 13 web-based courses this learner took] really had... enough (structure) to make it work

The learners who chose face-to-face courses did so in part because they knew that if structure was lacking, they had direct access to the instructor in order to obtain the information. In these instances easier communication with the instructor was important.

I find that a lot of the assignments and a lot of the [online] discussions have been what I consider to be vague and ambiguous. In face-to-face learning my style is to be a clarifier, engaged quite a bit verbally.

Interaction. With regard to interaction, the learners indicated that interaction with the instructor was very important; interaction with peers was also important, although to a lesser degree. Again, the learners interviewed support the quantitative findings. Interactions assist in learning but are less important than clear structure and communication of that structure to the

learners. Although, in some instances, the interactions were deep and meaningful, adding to knowledge gained.

I think they're [comments from others] very important. I have a slightly different situation because I had a drinking problem as an undergraduate and I don't have a lot of positive memories about my undergraduate work. I needed some reinforcement, particularly in the earlier classes, from the instructors to sort of let me know that I belong there and I was doing fine. Because you don't get that sort of face-to-face, you know the smiles and all those things that reinforce us, the comments from the instructor are critical.

I think they (chat, discussions, and group assignments) added value to the learning experience and helped us be connected.

It gives you different notions too, because otherwise you're your own compass unless you get other peoples' feedback, so my experience would have been totally through tunnel vision unless I had inputs coming along the way.

I found it [group interactions] to be very good. We got so much in-depth....

In many other situations, the interaction never reached the depth required to aid learning.

[My group has] been actually humorous and comical in many ways, but they tend to digress so much and get away from what we are supposed to be talking about that we almost need an intermediary to bring them back on track. And I notice that when another learner tries to do that, more sarcastic comments come out. Because the authority figure isn't there – that it's all within the learners – that they tend to just go their merry way, but we tend to get off track way too much. Half the questions I don't even think we answered. We get away from the subject matter without having somebody redirect us back and think that's what's failing.

Some people are using it [the discussion board] more as a chat line... than I think for depth of thought issues.... I don't know any other way to describe it other than to say when you're talking about technology with a chat room full of people.... I've got a sense of humor too but... you know after e-mail after e-mail that's a joke about this or that or a ha ha ha this,... I don't want to waste my time readin' that crap.... E-mail is fine but if I've got to go through about 50 discussion postings I don't want 6, 7, 8 or 10 of them to be... things that are... not too interesting....

Some of those postings, I ask "what does that have to do with anything we're reading?"

Distance. Although the amount of distance was not statistically significant in the logistic regression, it is possible that this finding does not tell the complete story about distance and satisfaction with learning in a course. Many of the learners interviewed felt alone and commented that they were “teaching themselves.” For learners taking web-enhanced or web-based courses, the social presence, through the feedback of other learners and especially the instructor, was important to their learning.

As far as being connected with the group, we had our chat sessions, but other than that, no. As far as the professor, I felt more distanced. If this is the way online learning really is, I don't know that I would take another class this way.

I found myself in the chats typing fast, reacting fast, and getting no response for minutes; what felt like minutes at a time. It was very challenging.... I'm really a traditional learner; I wished [the instructor] was there the whole time. That was my preference.... I do want to know when I'm on a right path and when I'm on a wrong path, and it's very hard to get that feedback from a group of peers who don't know more than you know. So I found that very frustrating. I am someone who's looking for guidance.

[When asked if she felt she was staying connected to the academic experience, she responded thusly.] I don't think I am.... My academic experience has been my relationship with the text and my study guides.... That's not my preferred way of learning.

I felt lost and many people felt lost until probably the fourth week. That was a lot of what was being discussed was “do you feel lost?” “I feel lost.” “What were we supposed to be discussing?” “Where did you get that from [laughs]?” That kind of thing.

There are so many thoughts and you can't type as fast as you think. Sometimes I have some one or two liners, but by the time I press Enter, I know they are probably [onto another subject in the chat room]. I refuse to be the person who pulls them back....

It is apparent from the transcripts that although some learners adjusted to the distance as the courses progressed, others did not. Consequently, although the variable of distance is not statistically significant in this study, for some respondents, it remained an important barrier to learning.

Research Question 2: LOQ with Distance

Quantitative Analysis

A chi square analysis of independence was conducted comparing LOQ Type with Distance (two categorical variables). The chi square was not statistically significant (chi square=7.26, $df=6$, $p=0.30$). The association between these two variables was low (.15), as measured by Cramer's V . Thus, there appears to be little relationship between LOQ Type and whether one was in a distance education course.

We also looked at LOQ Type with satisfaction under different amounts of distance. There was no statistically significant relationship between LOQ Type and satisfaction under any of the distance conditions (chi square for None and Some (collapsed) was .375 and for All it was .938, both with $df=3$).

Qualitative Analysis

The interviews supported the statistical findings. Interviews conducted with those in the face-to-face course, and those in web-based courses indicated that learners may have had multiple reasons for selecting levels of distance that had nothing to do with their learning orientation. For learners in the face-to-face course but who had previously tried web-based courses, many believed they needed the more traditional contact available through class meetings.

Actually, I had a very bad experience. I took a class where the professor never got any of my assignments. I ended up passing, but barely, so I was really turned off on distance classes. There was no communication.

We do this [online chat] online at work, and people don't even... pay attention to what's going on. Like, you can tell they're working on a PowerPoint presentation for something else because they don't even know where the discussion is.

I chose to take my courses face-to-face because I wanted that interaction with the instructor. I need that. I've taken enough courses to know that about myself. I

need the deadlines. Knowing that you have to have something done for class. And I'm a visual learner. I feel that I need to be able to see the professor.

There's a commitment that you make with face-to-face, like a relationship. You get to know those people sitting next to you through the course. Face-to-face is an advantage for me because I'm a procrastinator. When you have that relationship, you know those people, you have to get your part done so you don't let them down. I don't feel that with online classes.

For learners in the web-enhanced and web-based courses, there were equally compelling reasons to enroll in online courses rather than in face-to-face courses, that had nothing to do with learning orientation.

I appreciate the autonomy and the fact that you get to know people on a more personal level without having any biases or preconceived notions about what you think you should expect from those people [comment from a young, African American, professional woman].

I wouldn't have been able to get an MBA under face-to-face because I just don't have the time. I couldn't devote the time, and it would just be devastating if I tried to do it face-to-face.

So this [online course] was actually better for me. Do you know what I'm saying? I sat in a classroom with a bunch of 18 and 19 year old kids and generally when they asked me a question, it was "you have all this life experience. What do you know?" Well, great. I did algebra 30 years ago. It's totally different for somebody who's going to school as a youngster and going to school as an adult, and it depends on the adult's age. So it was much easier online because it took a long time for them to figure out how old anybody was.

I couldn't do these courses if it weren't... for, being online. When I sit down to do my assignment, I want to get it done. My work takes lots of time. It's not just teaching. There's working with this learner, and following up with businesses on what learners are doing, and this and that.... My evenings are pretty busy, and then I have a family and a teenager of my own so I don't have a lot of time.

Other students found that web-based courses suited their learning style.

Maybe it's not self-taught but more responsible for your learning because of the structure involved. I wouldn't say I am learning more or less than face-to-face because I'm always very actively participating in my learning. However, I think the environment is more conducive to learning. That you have a better stake in the learning. You are more focused on the learning. I think it's because you have to be reliant on yourself more. I have instant feedback on instruction in the

classroom. If I am home reading a book, I don't have anybody to ask, so I have to dig a little deeper into myself. A metaphor would be the difference between fast food and something you have to prepare yourself.

My main reason for doing it, since I am doing it I am enjoying teaching myself the subject matter instead of having it taught to me by a professor.

In conclusion, the interviews indicate that, for this group of learners, learning orientation was not the determining factor in whether to enroll in a web-based or face-to-face course.

Instead, life situations (e.g., time, travel to class, etc.) or convenience were more important.

Research Question 3: LOQ and Philosophy

A chi square test of independence was conducted comparing learning orientation type and philosophy. Because the sample size was small ($n=102$) and the number of categories was large, the initial run of the chi square resulted in too many cells with an expected frequency less than five. In addition, learning orientation type and philosophy do not allow for collapsing the cells, as each of the learning orientation and philosophy types are mutually exclusive. Consequently, the final test could only be run appropriately after dropping the Resistant learning orientation and with only the Behavioral and Progressive types of philosophy (the two most prevalent types). The chi square was not statistically significant (chi square = 3.11, $df = 3$, $p = 0.38$). The association between these two variables, as measured by Cramer's V , was low, .18. Thus, it appears that learning orientation and educational philosophy are not related. No qualitative questions were asked relating to this research question.

Research Question 4: How Do Learners Create, Maintain And

Use A Learning Community To Foster Individual And Collective Learning?

Qualitative Analysis

Definition of a learning community. Because this question was to be answered based on qualitative data gathered through in-depth interviews and focus group, the definition of

community was left rather vague to allow the participants to define it. Thus, interviewees were asked for their definition of a learning community, and their responses have been used to define community.

Although the interviewees had different responses, there were many commonalities in their definitions. The following comments are representative of the consensus of interviewees.

Learning communities are... I think, people who share ideas, learn from each other, discuss, have certain understandings about the way that communication will occur and trust that it's okay to say things and take risks in what you are saying or thinking when you [don't] know everything. When you say something that you're throwing it out there and it's not going to be thrown back at you. I think that there is also a focus in a learning community – a direction that is kind of understood – like a culture that is kind of shared....

I would define a learning community as a group of folks who come together virtually or physically to engage and challenge and grow together, explore new ideas. [A learning] community to me typically implies some kind of an interpersonal connection level. I don't know if you need that in a learning community. I've done no reading about learning communities. I know nothing about it. The phrase implies some kind of an interpersonal connection to me. Care for, trust. Those kind of feelings or relationship type things.

In general, learning communities included shared learning goals, a free flow of ideas, and help solving problems from all members of the community. An element of interpersonal connection or trust also seemed to be important in attaining a feeling of community.

Creation and maintenance of a learning community. Not all agreed, however, that their courses or the groups to which they were assigned became learning communities. When asked how they went from being individuals to feeling part of the group or team, the most common response can be summed up by one of the interviewees, who said: "We had to!" Most of the learners felt that although they were placed into groups, the assignments given within the courses, and the subsequent struggle to complete them together was the key to becoming a cohesive group, and subsequently, feeling that they were part of a learning community. This was

true across all levels of distance. One of the learners from a web-based course had an experience that explains the process:

We were forced to [do the assignments].... [We] meet as a group on our own, from whenever, 9 to 11 at night, or weekends, whatever. We just go online, or get on the phone, and... we would actually be online with WebCT and.... A couple of us would be with cell phones and we would just be typing in a discussion, you know, chat area, or uh, and or they would just be doing something and gathering notes, and... minimizing and maximizing and going back and forth to Word, and we'd just be gathering and commenting and putting things together... faxing things back and forth, e-mailing things back and forth, doing things... and it worked.... One of the things that helped that work, for sure... was diversity. That was the key, because we, in that group of four, it was one man, one black woman, who.... was not an educator, she was from rehab... [and a] sixtyish older woman and [a] pretty with it lady... [and] we just rocked. [We] just brought such diverse ideas, interests, concepts, everything to the table and we had some assignments that challenged us, and... pushed us to the limit. And our first assignment, dealt with technology, actually posting a PowerPoint presentation to be viewed.... It took almost 8 hours for us to post it.... We were just so frustrated.... So, uh, we learned. You know we worked, we fought, you know, we worked together. It was *very, very* real. That was the neatest group of four. It was and that was... solid.

Whether the learners were working together face-to-face or via the web did not seem to make a difference in their definitions of a learning community, however learners did say they felt face-to-face communities developed more quickly. For those learners who did not feel that their group became a learning community, it was usually due to the individual's unwillingness to socialize or a lack of participation in the course.

I just felt like an independent student. I didn't try to get to know anybody except for reading their student intros and also with the teacher. [When the student was asked if she felt like she alone, she responded:] Yes. Because I didn't talk to anyone, and I didn't socialize with anyone and I didn't even know what anyone looked like, I couldn't put a face to a name. I knew where some of them were from but that was really it, because there was no small talk like sometimes when you go into a traditional classroom, you see your friends and how are you doing and make some small talk but there was none of that.

[The group cohesion] depends on the individual because it is kind of unlimited in terms of how much you want to read on your discussions, how much you want to contribute. For me, my main limitation was just time. I think it is really cool you

can just talk with anybody and everybody. I don't know who's reading and how much people are reading, although I have gotten responses on things I have sent which surprised me and [it] was kind of nice or if a discussion would keep going. But I think that some people were just overwhelmed because we'll go in and we'll have like 80 messages a week easily on our list so everyone is sending stuff.

Although learning occurred, and learners felt that they had a community they could rely on, the issue of trust came up numerous times. For some, the short time frame (most the courses met for 10 weeks) did not allow for real community and trust. For others, trust is simply an ongoing issue. Most learners felt that the process of community building began with social interaction and shared goals, and working on the assignments allowed some to bridge the trust gap quickly. For others, working together on a project was not sufficient to develop and maintain a learning community. A discussion from the face-to-face course focus group described what learners across all levels of distance reported (the students' names have been abbreviated to preserve their confidentiality).

Interviewer: What do you do to help feel part of the teams?

D: First, you have to chat. Get to know each other. Everyone had to talk, that way we knew each other.

T: Also, when they arranged the teams, they did it by experience. And we sit in class as a team. So, you're always working with your team.

Interviewer: What about the roles of your assignments, the discussions, things like that, in fostering your learning? Did it promote social or academic groups?

D: Everyone's pretty courteous right now. When the grades are due – then the honeymoon's over.

S: That's me looking at the big picture. We fail or succeed as a group.

P: I don't mind helping, we all need help and everyone has to do their part. That's in the real world too, not just in classes. So, I don't mind groups, but there is a loss of control that I struggle with. But, it's the model of the business world, and I know we need to do it here too. You have to make sure you don't leave anyone behind.

T: You need to trust people more.

P: That's no secret, but I mean no disrespect. It's me.

T: I understand. I've been in groups for many things, some where they let me down. But I trust people, that's just me. Even with my family group, you have to do things for the group. You can't let the group down. Even if I die, I'll get there. I expect that of everyone else too.

A: I've worked in groups before. I think it's a test of character. You have to have the character to support your group. Because I have a left brain, I focus on facts. Maybe the group has other ideas, and sometimes I wonder, is anyone in the group listening to me? But, that is the essence of groups. You have to look from other views. It's testing me.

K: When you are in a team, it teaches you do deal with people. In my group, there are all kinds of people and it can be hard to communicate. But, you know how people are. This is good training for when we have real jobs.

Interviewer: So, how do you go from being individuals to being a group, a team?

D: Stress [everyone laughs].

Communication problems often contributed to a lack of community building. As evidenced by the following comments, it appears that one sure way to erode trust among the group is to communicate in ways that would be unlikely in a face-to-face course. Basic courtesy seemed to be lacking from some group members.

I found people to be somewhat impolite, more so than I would expect face-to-face. More challenging in an impolite way than I would expect face to face. And that's turned me off. As a matter of fact, the last time I was with my group face-to-face, I said, "I'd like for us to be careful about this as we continue, particularly around the final exam that we're all starting to do as a discussion chat group," because it made me uncomfortable.

Once you start those threads, you know, I mean it can get just nasty, nasty bitching.... [And,] once one would start, the next one would pick [it] up and just take it a little deeper... a little further.

Thus, students developed learning communities by sharing ideas and having the common goal of completing an assignment. Although this was true of all the courses, students felt that

learning communities were more easily established in face-to-face course, where they could meet and communicate with their colleagues more easily. The biggest barriers to the formation and maintenance of learning communities was hesitancy by some students to socialize or by what was perceived as rudeness by some members of the class. Professors might look for these problems and move quickly to counter them. Encouraging hesitant persons to communicate and stopping (through private mail) inappropriate comments may help develop and maintain learning communities.

Use of learning communities. The learning communities that developed played an important role both in students' learning and in lessening their feelings of distance from each other. Becoming a member of a learning community provided a sense of social presence. Again, learners seemed to feel this way across all levels of distance. One of the learners in a web-enhanced course said:

It's gotten me more involved. I think just the back and forth between the people – it's kind of funny because when we go to class we don't know anybody's names. On the Internet, during the week when we are having these discussions over the e-mail, we all know everybody's names and there are like little jokes going back and forth but when you get to class you have no idea who you had these jokes with. I think having them [group interactions] online and having everybody post their opinion or their experience has really furthered it [learning], because everybody in that class has some kind of different experience so, therefore, when they do respond to different discussion postings they give further information. They're like, oh well this society deals with this or this society deals with this and if you go to this web page - or this is a great book that concerns that - it gives you a lot more things that are not particularly required for the course, things that I may not actually go and do right now but maybe over the summer when I have time I'll say, oh hey, I remember this guy was talking about this and I need to go look that up and find out more about it. I think that has really fostered more outside learning like without having required it.

A focus group from one of the face-to-face courses had this discussion:

Interviewer: Could you talk about teams? How did group interaction foster learning?

S: I think our group has been really good. We respect each other's ideas and we work on whatever problem comes up. We just do whatever we need to do to get the job done.

K: I agree. I've called her (Student S) to ask her about things, and she's not the only one. Working in teams has been very good for me.

P: It's hard for me. It's a struggle, because it's risky. Everyone has to share a grade. I don't want to let my team down, so there's a lot of pressure on me. I'm used to it, but not the *grade sharing*. We're all doing our part, but....

D: On my team, there have been some disagreements, but I'm pretty happy. I hope I get the same group for the next project. But, when you're in a group, you have to trust that they will do well. At work, we also use teams, but there is a *leader*. Here, everyone's equal, so that makes it harder.

Students use learning communities to enhance their learning. They see the community as an opportunity to share ideas. Finally, learning communities seem to lower the feeling of isolation some students feel; this may be of special importance for courses that do not meet face-to-face.

CONCLUSION AND IMPLICATIONS FOR FURTHER RESEARCH

We began this study with the hypothesis that, given a choice, learning orientation and educational philosophy would make distance education courses more attractive to some students than to others. We also hypothesized that structure and the amount of interaction would be related to student satisfaction with the amount of knowledge gained in a course. The first hypothesis was not supported for at least two reasons. First, except for the course at Franklin University, students were not given a choice in how much of the course was online. Thus, almost all students in this study were taking courses with at least some distance component, regardless of learning orientation or educational philosophy. Second, regardless of learning orientation or educational philosophy most students are flexible and appear to have eventually adapted well to the online environment.

The second hypothesis was supported by the study's results. That is, structure and adequate interaction do lead to greater learning, and it is structure that is the most important. Why interaction was less important than structure to learning may be related to the more limited experiences of both faculty and students with online instruction. On the one hand, faculty (both in general and in this study) typically have more experience designing courses (i.e., creating structure) than at facilitating interaction in the newer, online environment. On the other hand, the students remarked in the interviews that they had some technical and organizational difficulties in the distance environment. Online assignments are more demanding of the student because they must be opened, read, and then (sometimes) responded to. These steps are more time intensive than listening and commenting in class and require at least some technical skill to accomplish. Combining the logistic regression results with the interviews and focus group comments supports the proposition that student experience with online interaction was more varied and that some students had difficulty adapting to the new environment. These difficulties would account for the smaller effect of interaction on knowledge gained.

In summary, the results of the quantitative tests indicate that neither learning orientation, educational philosophy, nor whether the course was taught online or face-to-face is related to the amount of knowledge a student gained. What does emerge, however, is that the structure of the course and the quality of interaction is highly related to self-reported student satisfaction with learning.

Perhaps not surprisingly, the results of this study support the conclusion that students enroll in web-based courses because it is convenient or because the course is only taught in one format and they have no choice. Learning orientation and educational philosophy have little to do with the decision, possibly because students may be only vaguely aware of their orientation

and philosophy. It should be noted that a number of students indicated that they would prefer to take courses face-to-face, rather than via the Web. These students said they struggled with learning online and did not enjoy it as much as when they are able to personally meet the instructor and the other students. Conversely, some of these same learners indicated that they were very satisfied with their learning at the end of the course, notwithstanding the difficulties they encountered. In both the focus group discussions and the interviews students reported that the reasons they enrolled in online courses were related to their motivation to complete a specific academic program in a way that accommodated their schedule; in other words, it was convenience, not learning orientation or educational philosophy, that affected their decision.

Finally, the importance of structure to student satisfaction with learning reaffirms the need for instructors to develop clear objectives and activities. That courses should be well designed with a close link between objectives and activities will be of little surprise to most readers. What does come from this study, however, is that well designed courses can be of benefit to all students, regardless of their learning orientation, educational philosophy, or whether the course is presented face-to-face or online.

Professors can use the results of this study when designing or modifying courses. Educators teaching online courses should be prepared to offer help to students working through the problems of communicating online. Specifically, educators should be clear about what is expected of the student (i.e., provide structure) and give support to the student, both technically and through encouragement, to ensure that the student's experience is optimal and that student interaction with both the professor and with other learners is facilitated. This study suggests that these activities will result in the greatest perceived learning by the students.

Implications for future research. This study offers important preliminary findings regarding the development and maintenance of online learning communities. Further research is needed to determine the levels of structure required to assist learners of various abilities, especially technical abilities. In addition, additional ways to facilitate interaction online need to be found if online communities are to be created and fostered. Finally, what types of interaction best assist learners and what factors interfere with online community building and maintenance deserve to be further explored. Building on this study, future researchers should endeavor to expand and elaborate on these results.

TABLES AND APPENDICES

Table 1

Subscale Mean, Standard Deviations, and Item Means for Computer Usage Subscales (n=133).

	Mean	SD	Item Mean
Internet experience	11.7	4.8	2.7
On-line course software experience	10.8	5.3	2.2
E-mail experience	19.9	4.8	3.4
Overall comfort with computers	21.8	4.1	3.1

Table 2

*LOQ and Philosophy of Adult Education***LOQ Type**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 Resistant	1	.5	.6	.6
	2.00 Conforming	22	10.0	14.3	14.9
	3.00 Performing (Procedural)	39	17.7	25.3	40.3
	4.00 Performing (High Effort)	57	25.9	37.0	77.3
	5.00 Transforming	35	15.9	22.7	100.0
	Total	154	70.0	100.0	
Missing	.00	1	.5		
	System	65	29.5		
	Total	66	30.0		
Total	220	100.0			

Philosophy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Liberal	12	5.5	8.5	8.5
	2 Behavioral	51	23.2	35.9	44.4
	3 Progressive	53	24.1	37.3	81.7
	4 Humanist	20	9.1	14.1	95.8
	5 Radical	6	2.7	4.2	100.0
	Total	142	64.5	100.0	
Missing	9	13	5.9		
	System	65	29.5		
	Total	78	35.5		
Total	220	100.0			

Table 3

*Results of Logistic Regression for Research Question 1***Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	NS9(1)	4.883	1.474	10.966	1	.001	131.982
	Constant	-2.398	1.044	5.271	1	.022	.091
Step 2 ^b	NS9(1)	4.003	2.112	3.594	1	.058	54.784
	TOT_INT	.678	.416	2.658	1	.103	1.969
	Constant	-15.040	8.800	2.921	1	.087	.000

a. Variable(s) entered on step 1: NS9.

b. Variable(s) entered on step 2: TOT_INT.

Appendix 1

The Satisfaction Questionnaire

COURSE EVALUATION AFTER COMPLETION

Directions: This survey is part of a study to examine factors that support collaborative learning in face-to-face and online courses. Select a number along the continuum provided that best expresses your experience. If you remember the four-digit number + letter you used on previous surveys related to this study about your distance learning course experiences, please enter it in the ID number text box below.

To submit the form once you have completed it, click on the SUBMIT button at the bottom of the form. If you accidentally submit the form before you have finished filling it out, click BACK on your browser to return to the form. Continue filling out the form and click submit once you have completed it.

Thank you for participating.

Top of Form

Information about the course you took:

Course Number

Term the above course was taken

Course grade received (if currently taking the course, grade expected)

ID number that you used on previous surveys. If you don't remember your number guess, but it must be 4 digits and one letter.

Your satisfaction with distance learning:

Please estimate how adequate the course was in achieving each of the following goals

1. The level of personal, meaningful dialog with the instructor.

Inadequate _____ Adequate

1
 2
 3
 4
 5

2. The level of dialog between you and your group or class team.

Inadequate _____ Adequate
 1 2 3 4 5

3. The level of sharing of ideas between you and the whole class.

Inadequate _____ Adequate
 1 2 3 4 5

4. The degree to which the instructor encouraged dialog, participation in class activities, and contact with others.

Inadequate _____ Adequate
 1 2 3 4 5

5. The overall level of interaction (the dialog, sharing, and contact with others) in the course.

Inadequate _____ Adequate
 1 2 3 4 5

6. To what extent were you satisfied with your involvement in course activities?

Very dissatisfied _____ Very satisfied
 1 2 3 4 5

7. Satisfaction with the learning gained from the discussion groups or class teams/groups.

Very dissatisfied _____ Very satisfied
 1 2 3 4 5

8. Satisfaction with the knowledge gained from this course.

Very dissatisfied _____ Very satisfied
 1 2 3 4 5

9. Satisfaction with the course structure (i.e., the activities, the assignments, and instructor guidance) in this course.

Very dissatisfied _____ Very satisfied
 1 2 3 4 5

10. Satisfaction with the overall conduct of this course.

Very dissatisfied _____ Very satisfied
 1 2 3 4 5

When you are finished, please click on the Submit button below. Allow 10-15 seconds for the form to submit. You should see a Thank you message, which indicates that the form has been submitted successfully. Thank you again for helping us.

Bottom of Form

Appendix 2

The Demographics Questionnaire

Building Online Communities: Learner Background Questionnaire

This survey is part of a study to examine factors that support community building and online learning. Please answer each question and click on the Submit button when you are finished. [Note: This form will be inadvertently submitted if you hit the Enter key (also called the Return key). If this happens, just click your browser's BACK button and you will be taken back to the form. Continue filling it out where you left off and click the SUBMIT button when you are finished. We will know the incomplete submission was incorrect.] ***Thank you for participating.***

Please enter the code you used when completing the Learning Orientation Questionnaire and the Education Philosophy Questionnaire. (Must be 4 digits and one letter).

What is the number of the course for which you are completing this questionnaire?

1. What is your gender? Male Female

2. What is your current age in years?

3. What is your highest level of education?

Choose highest degree earned

If other, please specify

4. What is your area of study/program?

Choose One

If other, please specify

5. What race do you consider yourself to be?

Choose one

6. How many years have you been using computers?

7. How many years have you been using the Internet?

Below are several Internet-related activities. Please rate your experience with these activities using the following rating scale.

- 0 Very inexperienced or have not done this activity
- 1 Inexperienced, rarely perform this activity, but still have much to learn
- 2 Somewhat experienced, occasionally perform this activity
- 3 Experienced, regularly perform this activity
- 4 Very experienced, could teach others

Using the Internet

8. Play computer games on your computer:

0 1 2 3 4

9. Search the Web on a specific topic:

0 1 2 3 4

10. Use instant messaging (e.g., AOL Instant Messenger, MSN Explorer)

0 1 2 3 4

11. Download software from an online source:

0 1 2 3 4

12. Cut and paste online data or graphics into another program:

0 1 2 3 4

13. Other computer experience not listed above, please specify

0 1 2 3 4

Using E-mail

14. Send and receive e-mail messages:

0 1 2 3 4

15. Forward an e-mail message:

0 1 2 3 4

16. Attach files to an e-mail:

0 1 2 3 4

17. Use common e-mail functions (e.g., send and receive e-mail messages) in a variety of e-mail programs:

0 1 2 3 4

18. Set up and use an e-mail address list (e.g., create and edit an Address Book):

0 1 2 3 4

19. Set up an e-mail account:

0 1 2 3 4

Using Online Course Assistive Software (e.g., WebCT, Blackboard, E-Education)

20. Create a Web page:

0 1 2 3 4

21. Upload a document of any type to online course software:

0 1 2 3 4

22. Participate in a threaded discussion:

0 1 2 3 4

23. Take online exams and quizzes:

0 1 2 3 4

24. Participate in an online chat:

0 1 2 3 4

Using Computers in General

25. How would you rate your **general, overall** computer experience and knowledge?

0 Very inexperienced, have no knowledge of how to use a computer.

1 Complete novice, rarely use a computer and still have much to learn

2 Somewhat experienced, occasionally work with a computer

3 Experienced, work regularly on computers

4 Highly experienced and knowledgeable, could teach others

26. For the next set of questions, rate your **OVERALL COMFORT** with computers and the Internet. Please answer them using the following scale:

0 Does not apply

1 Very uncomfortable

2 Slightly uncomfortable

3 Comfortable

4 Very comfortable

27. How would you rate your **overall** comfort with using computers?

0 1 2 3 4

28. What is your **overall** comfort with using the Internet?

0 1 2 3 4

29. How many courses have you taken that met totally online (no face-to-face contact)? (If none, enter zero)

30. What is your **overall** comfort with courses that met totally online? [Note: If you have not taken a course that met totally online (you answered zero (0) to the previous question), how comfortable do you imagine you would be in such a course?]

0 1 2 3 4

31. How many courses have you taken that meet predominately online (less than 50% of the class meetings were face-to-face)? (If none, enter zero)

32. What is your **overall** comfort with courses that never meet predominately online? [Note: If you have not taken a course that met predominately online (you answered zero (0) to the previous question), how comfortable do you imagine you would be in such a course?]

0 1 2 3 4

33. How many courses have you previously taken that met predominately face-to-face (more than 50% of the class meetings were face-to-face) but also included one or more online components (for example, chat rooms, white boards, electronic discussion boards, or lessons or assignments online)? (If none, enter zero)

34. What was your **overall** comfort with courses that met predominately face-to-face but also include an online component? [Note: If you have never taken a course that met predominately face-to-face but included an online component (you answered zero (0) to the previous question), how comfortable do you imagine you would be in such a course?]

0 1 2 3 4

35. In general, what is your **overall** comfort with school?

0 1 2 3 4

The form is not submitted until you click the submit button. It may take several seconds for the form to be submitted so please be patient. You will know it has been successfully submitted when you see the Thank You screen.

Thank you for participating!

Appendix 3 – Focus Group and Individual Interview Questions

1. How does the course compare to face-to-face classes in terms of your ability to converse with faculty and other learners? Comment on the time spent in learning, the importance of comments from classmates and from the instructor. What about the expression of ideas and depth of thought?
2. How did you stay connected to the academic experience? How did you stay part of the experience? What did you or your instructor do to make you feel part of the teams?
3. In what ways did your online interactions foster learning? Address the roles of the assignments, discussion boards, discussions with others, etc.
4. In what ways was your participation in this experience the same or different from meeting face-to-face? How did you create social or academic groups to help promote your learning? What did you do to feel connected? How did you feel part of the group? How does it happen that you start out as individuals and then feel part of a class? Did you feel more of a personal link with the instructor and learners rather than you would if you were sitting in a class? How did you get to know your instructors and classmates in a different way?
5. What is your idea of a learning community?
6. What did you learn about yourself as a learner in an online environment?

Since some of the courses were conducted entirely face to face, a different set of questions was used for learners who were not learning at a distance.

1. How did you decide to take the course in a face-to-face format instead of online?
2. What online components of this course did you use? (Find out how they use e-mail and how they like having papers graded electronically)
3. How does the classroom format facilitate your ability to converse with faculty and other learners versus how you think it would be online? Comment on the time spent in learning, the importance of comments from classmates and the instructor. What about the expression of ideas and depth of thought?
4. In what ways did your group interactions foster learning? Address the roles of the assignments, discussion with others, creation of social or academic groups. What did you or your instructor do to make you feel part of the teams?
5. In what ways was our participation in this experience the same or different from meeting online? How does it happen that you start out as individuals and then feel part of the class? Did you feel more of a personal link with the instructor and learners than you would if you were in an online course?
6. What is your idea of a learning community?
7. How does your decision to enroll in the face-to-face course reflect what you know about yourself as a learner? Address who is responsible for your learning.

Appendix 4 – Coding Guide

1. Dialog – learner to learner, learner to instructor, learner to content and learner to medium interactions. All interactions that take place within the course that are designed to aid in learning.
 - a. Comments indicate interaction or discussion with others
 - b. Expresses instances on feedback
 - c. Responds to questions concerning dialog and interaction with others
2. Structure – design of course content and instructor implementation of design
 - a. Assesses design of course
 - b. Assesses action of instructor regarding design of course and instructor's implementation of that design
 - c. Responds to questions concerning structure of the course or the instructors' implementation of course structure
3. Distance – psychological space of potential misunderstanding between the behaviors of instructors and those of the learners (Moore & Kearsley, 1996)
 - a. Discusses technical difficulties as contributing to feelings of distance
 - b. Indicates distance perceived by lack of feedback from instructor or other learners
 - c. Assesses social presence
 - d. Responds to questions concerning distance
4. Learning – understanding of course content and application of knowledge or skills gained
 - a. Expresses immediate applicability of course content in work or life
 - b. Discusses personal learning process or experience
 - c. Responds to questions concerning learning
5. Participation – level of learner involvement in discourse and required class activities and accountability for that involvement
 - a. Expresses instances of participation
 - b. Expresses instances of accountability to others in the class or team
 - c. Responds to questions concerning participation
6. Barriers – problems learners encountered that interfered with their learning
 - a. Expresses difficulty with course structure
 - b. Expresses difficulty with technology
 - c. Identifies extrinsic and intrinsic life issues
 - i. Family problems
 - ii. Motivation
 - iii. Procrastination
 - iv. Money
 - v. Work
 - vi. Etc.
7. Community – (working definition to follow)
 - a. Responds to questions regarding learning communities
 - b. Identifies how course structure required group work
 - c. Discusses social relationships
 - d. Identifies shared background
 - e. Expresses feelings of dependence or independence
8. Communication – the act of giving or receiving information, signals or messages as by talk, gestures or writing
 - a. Indicates facilitation or interruption of communication

- b. Expresses differences of communication style
 - c.
9. Reasons to do/not do online courses –
- a.

Appendix 5 – Rubric

Transactional Distance Assessment Checklist

The following checklist contains elements that give instructors and learners an opportunity to compensate for the physical distance in Web-enhanced courses. Consider a course you have already designed or taught and make a check next to each item that describes the course you are rating. Add the number of checks to determine the course's opportunity to decrease transactional distance.

Course number and name: _____

Course topic: _____

Percentage of content completed online: _____

1. In this course the learners have the opportunity to determine what they will study.

2. Learners have the opportunity to define their own learning objectives.

3. The syllabus contains options for learner-directed topics and assignments.

4. Learners have the opportunity to change course requirements.

5. Some elements of the course may be altered to accommodate the individual needs of the learners.

6. Learners have the opportunity to determine course readings.

7. Learners have the opportunity to change the learning activities used in class.

8. Learners have the opportunity to change assignment deadlines.

9. Learners have the opportunity to define their own evaluation/grading strategy.

10. Course attendance is flexible to accommodate learner needs.

11. The course provides for in-class discussion between the instructor and learners.

12. The course provides for in-class discussion among learners.

13. The course provides for out-of-class interaction between the instructor and learners when feasible.

14. The course provides for out-of-class interaction among learners when feasible.

15. The course provides for e-mail communication among learners.

16. The course provides for communication among learners via fax, voicemail, or telephone conversations.

17. The course has a face-to-face component or uses two-way video or videoconferencing technologies to allow synchronous voice and visual communication between instructor and learners and among learners.

18. The instructor provides for communicating regular progress reports to learners.

19. Instructors have the ability to provide regular feedback to learners.

20. Learners have the opportunity to provide feedback about course design and content.

21. Learners have the opportunity to practice using the course software at the start of the course.

22. The institution provides support to help resolve learners' technical questions.

TOTAL

Score	Opportunity to Decrease Transactional Distance
1-7	Low
8-14	Moderate
15-22	High