

## **Distance Education: Benefits and Barriers**

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### **Objectives and Purpose**

The objective of the present study seeks to determine what qualities of a specific distance education (DE) experience may be considered exemplary, and what experiences or strategies should be improved or omitted.

### **Significance**

As more and more distance education courses are provided for students it is imperative that we are cognizant of the quality provided by these courses. It is not enough that we provide online experiences that are “as good as” face-to-face (FTF) interactions, but that we provide online experiences superior to face-to-face interactions.

By gathering data from students involved in distance education courses, we add to the information about what constitutes quality online learning. Another dimension to be considered when examining the information gathered from the students is their particular perspectives and learning styles prior to enrolling in the course. This can be explored effectively through a qualitative study such as this.

### **Perspective or Theoretical Framework**

Instructor teaching styles will always be a factor in DE. As we learn what makes DE effective for more students and endeavor to meet their needs, we may create rich environments. The focus should be on teaching and learning rather than the technology.

**Communication:**

Phipps & Merisotis (1999) found in their review of many distance education (DE) studies that students who were the highest performing were those that reported the most peer interaction in both traditional and DE courses. With this information in mind, it becomes an important strategy for faculty to design DE to encourage student-to-student communication.

**Learning styles:**

In a report prepared for the AFT and NEA by The Institute for Higher Education Policy (Phipps & Merisotis, 1999) it is stated that the learner characteristics play an important role in satisfaction of DE. Learning styles are seen as particularly important in DE because of the capability of technology to individualize instruction; thus providing instruction via a student's preferred modality.

Students may be auditory, visual, tactile, or kinesthetic learners, or a combination of these. By providing various alternatives of information dissemination, the instructor may provide a richer learning experience for all students. This multiplicity may decrease efficiency in the short term as well as increase development time in the initial phases of the creation of a DE course. The multiplicity may also "encourage the development of powerful new learning and teaching environments in the longer term. (Levin, Levin, & Waddoups, 1999).

**Accessibility:**

Accessibility to DE is important not only for students with disabilities, but also students with varied learning styles. When DE is designed to accommodate students with various disabilities they tap into the different learning styles of other students.

One in five Americans has some disability. As a result of the baby boom of the 1950s we are experiencing an aging population, which will add to the numbers of individuals needing

some kind of assistance. The percentage of Americans with disabilities will increase in the very near future (Heim, 2000).

Bray (1996) suggests that with the proliferation of easy-to-use tools for the creation of Web pages, anyone can create a Web site. He states, “If you insist on creating a state-of-the-art site, create one that a person could use with his eyes closed, or a pencil clenched between his teeth.” This is good advice for those creating DE courses as well.

### **Research Methods**

Graduate students enrolled in a distance education course in Instructional Technology experienced various strategies used online to facilitate learning. A survey was administered utilizing open-ended questions to determine the students’ satisfaction with the online experience. Benefits and barriers of the online experience are explored through the survey instrument. The open-ended questions will help determine questions to be asked in a subsequent survey instrument using a Likert-type scale to be developed for use with future distance education experiences provided by the researcher/teacher and others.

### **Results**

Results of the surveys administered online over several semesters of the same DE course provided information related to student satisfaction and interaction with online materials. As distance education for teacher training becomes more prevalent, we need to find ways to make the interactions meaningful and effective. A fundamental question of courses designed to teach technology skills, such as multimedia development through the use of technology, becomes critical. Can we really teach technology with technology to novice users?

### **General information**

The following general information was obtained from the student surveys:

- 100% were graduate students
- 55% attending part-time
- 90% employed full time
- 30% African American, 70% Caucasian
- 60% are below 35 years old and 20% are over 40 years old
- 65% live within 20 miles of campus while 25% live over 40 miles from campus
- 100% own home computers with most being PC platform
- 100% use the Internet from home
- 80% use the web for personal use extensively daily and 75% for professional use
- 100% use email, search engines, and book marking in browsers while 75% use online chat and listservs and only 50% use telnetting to other computers

The demographic data collected is typical of the students that we also see in the face to face courses in our Instructional Technology program. In the graduate program for Instructional Technology we have teachers who are typically employed full time, active computer users, and attending graduate school part-time.

### **What students want to learn**

When asked about three technologies students would like to learn about they mentioned “things beyond the basics”, graphics, photography, short-cuts that make life less complicated, creating web pages, advanced features of various software packages, and need to be able to use technology more often.

Several students mentioned wishing to learn more about digital cameras, recording sound, compressing files, developing QuickTime videos, accessibility and assistive technology.

A theme that seems to be emerging is that graduate students are interested in learning about technology beyond the basics and much of this concerns multimedia, i.e., graphics, video and sound incorporated into programs and instruction.

Most of the students found out about the course via traditional means, i.e., the university schedule or their advisor. A few of the students indicated that the course is a part of their curriculum.

Students indicated that they took the course for various reasons from that it is a requirement to some of the following:

- To learn practical applications for multimedia.
- It is an interesting and available elective for my program.
- Fulfills a technology requirement and was online so didn't have to have childcare
- I thought I would benefit from the class.
- This course was offered in the summer which was convenient for me because I do not work during the summers. It also frees me up to concentrate on only one course this coming fall.
- I would like to establish a concentration in Instructional technology.

Students were asked what their initial reaction was when they discovered that the course would be offered online rather than face to face. Some of the following responses were received:

- Very excited
- I was disappointed. I miss face to face interaction with my fellow classmates and with my professor. I love to learn in a classroom environment.
- I was excited! I love the idea of having the freedom and flexibility of an online course.

- I love online courses so I was happy
- Good because I would not have to drive for it.
- Happy
- Great! I have some of my summer!
- I found it neat and interesting
- good
- Very pleased.
- I was excited about saving driving time and walking to class time.
- Love taking courses online.
- I was excited
- Satisfied, although I prefer face to face.

Students were asked if their opinion changed after being involved in the online course.

Eighty percent (80%) stated that their opinions had not changed and the following are some of the comments from the students:

- If any part of a class is online, I prefer hybrid classes that offer some face to face time. This is conducive to clarification of concepts and assignments, along with modeling of expectations. Also, I like lively face-to-face conversations where people can disagree in fun - it is very difficult to disagree in writing and know that you aren't hurting feelings or making enemies - body language and facial expression are key components in fun debates! Also, I find that strictly online classes are considerably more time consuming than hybrid or face to face classes. (Putting thoroughly written class discussions in writing can be exhausting when it is added to large amounts of reading and outside assignments.)

- I really enjoyed the online experience.
- I still love it!

Forty percent (40%) of the students surveyed had never taken a course via distance education while the 60% who had experienced DE had taken more than 2 courses in this manner and 25% had taken more than 5 courses online.

The types of DE courses students had experienced ranged from video courses (videotaped courses) to web based courses similar to the one in this study. Approximately 60% of the courses experienced were video courses with the other being web based or hybrid (a combination of online and face to face).

One of the interesting perceptions by students in the online course is the comparison of there interactions with classmates. The students spent quite a bit of time in online discussion forums but 90% stated that they spent less time interacting with classmates than they do in a face to face environment. Sixty-five percent (65%) of the respondents stated that the nature of the interactions is less in depth than face to face; 20% more in depth; and 10% the same.

### **Strengths of taking this course online**

Students stated that the strengths of taking the online course are:

- ease of use, wide timeframe; could use it at 3 in the afternoon or 3 in the morning  
tutorials--Atomic Learning
- flexibility
- flexibility independence assignments can be emailed all articles were accessible online ability to contact other students increased
- working at own pace, more participation on my part, no traveling
- Flexibility of working when it is best for me.

- Not having to be at campus at a specific time and place
- flexibility
- Accessibility to a certain extent for distance education.
- convenience
- No travel time or wear and tear on your car; easy access.
- don't have to go to campus and can work when I want
- Time saver, saves money for traveling, should be able to be more flexible and should be more efficient.
- Time flexibility. I wouldn't be able to take classes at NCSU if it wasn't online.
- I can pace myself and I can log on and do my assignment or interact with my classmates at any time.
- convenience

#### **Weakness of this course online**

Students indicated that there were some weaknesses with the online course including the following:

- using online tutorial as opposed to class demonstrations/workshops on software
- more confusion about assignments; less comradery and support among classmates; less long-term memory retention of the reading because of the missing auditory component that comes from class discussions.
- Lack of face to face interaction, lack of personal feedback (In the classroom, you can ask a question and get an answer. Here, you have to email and wait on a response.
- technology problems

- No real connection with the class; less stimulating discussions
- Access to necessary software that is required for the course.
- software discrepancies no interaction with anyone to get it done
- Availability of labs and software
- The lack of personal relationships you form when you see classmates in person.
- Little face-to-face interaction with instructors and classmates, and occasional computer difficulties.
- less interaction - can't pick up on nonverbal reactions - less opportunity to learn and assist each other

While most of the concerns are legitimate, I should note that the use of specific software would have been the same for a face to face course. The software used would have been available in labs had the course been held face to face. When teaching with software via distance education, the purchase of software becomes integral to the course just as the purchase of textbooks. It is interesting to note that some of the students cited technical difficulties as an issue since most of them are in an Instructional Technology program and were enrolled in an online course.

### **What we learned from the course**

Students responded about what they believed they learned from the course with the following:

- Hyperstudio. More regarding how to integrate technology into the classroom
- I learned the value of multimedia tools in education.

- A ton. I learned about HyperStudio, the research in technology (and other teachers' viewpoints), read the book Being Digital - great for parties! and tested software that I didn't know existed before this class.
- how to use new software and how technology effects education
- New software and Atomic Learning Library
- I learned about the way to design multimedia correctly.
- time management
- Content was pretty good. I liked learning more about rubrics and assessments online
- HyperStudio use
- Time management skills improved; I also learned how to use two new software programs---HyperStudio and Inspiration.
- I learned how to use HyperStudio.
- I learned more about the different ways that multimedia can be used to enhance meaningful learning among students.
- the objectives set forth

### **What would have learned if FTF**

Students were asked to indicate what they thought they would have learned had the course been held face to face. They responded with the following:

- same
- The concepts would have "stuck" better. Though visual and tactile learning are my strongest learning styles, the auditory component tends to seal my understanding. This course lacked the auditory component completely, and I'm

concerned that a majority of the information gleaned from the articles and textbook will be lost in my subconscious memory by next week. (Of course the learning derived from the homework and projects are there to stay for a long time - I thoroughly enjoyed the homework/projects!)

- The same things. I may have heard about more software that people liked.
- nothing different
- Same
- I think in face to face I would have had the opportunity - hopefully- to work on my project or the computer application required for it and have more contact with people.
- Probably more life experiences to the topics of the course
- more class interaction would pose more questions
- same thing
- I would have learned the software more completely.
- more insight form other students besides the professor
- I think I would have learned about the same.
- Same
- I might have learned more from other people's experiences.
- same

### **Issues to consider when choosing between DE and FTF**

Students were asked what issues they would consider when selecting between a DE and FTF course and why these issues were important to them. Approximately 50% stated that they would complete a degree program which is entirely online. Students generally said that they

were very satisfied with the distance education course. Of those completing the survey 40% stated that they were very satisfied, 20% somewhat satisfied, 15% somewhat dissatisfied and 10% very dissatisfied.

The following issues were some listed by students in the study.

- No decision to make-I would take the distance--better suited to my learning style
- Because it adds such a time consuming component to have many in-depth written "discussions," I would want my on-line course to eliminate some of the reading so that there would be more time allowed for deeper synthesizing and written discussion/reflection. In this class, I spent MUCH more than the 3:1 time ratio (outside work: class hours) by the time I got all of the reading, writing, and homework/projects done. (In previous online classes, we read 1-3 textbook chapters and no articles per 3-4 hour class and had only one discussion posting in addition to our homework/projects. That was more manageable. By less reading, there was more time available for projects and homework assignments that are more effective in knowledge building.)
- Course load or how much extra instruction I may need from other students or the teacher. For example, there is no way I could ever take physics class online. I would need to go to class and find some buddies to explain things to me in person.
- none I would definitely choose the online course
- Drive time

- I would never take an online course again. I would always choose the face to face because I am the type of learner who benefits from the interaction in the classroom.
- time
- what the course is and would like to know the syllabus similarities and differences
- convenience
- Do I have access to the software and other resources online or do I have to travel to campus to access them?
- I live in the middle of nowhere
- The availability of the labs and what types of software is needed to take the class and how and where could I find that software.
- Time and travel. It would have to be closer to my house to take the face to face course.
- Time, distance, and course load.
- work schedule - childcare situation

### **Implications for Practice**

The research provides insights into student satisfaction with online learning of multimedia development for curriculum integration in K-12 classrooms. As distance education courses are developed we need to make certain that they are as rigorous and informative as face-to-face courses. The typical audience for such courses has been classroom teachers, but as we put materials online our audience may change, thus changing the nature of our online instruction.

There is a unique problem which exists when presenting technology training online. The audience or students may or may not have the prerequisite skills necessary in order to take

advantage of the course content. Graduate students self-select courses for many reasons; one of which may be that of convenience. The audience changes as courses are put online for students in various curricula or various parts of the state to see. There may be a misconception that because a course is online, flexible and convenient, the course will somehow be less rigorous than a similar face to face course. When the content remains the same nothing could be further from the truth. It takes very organized and self-motivated students to complete projects individually online as opposed to feeling accountable by coming to a class each week to face the instructor face to face.

### **Benefits**

#### **Flexibility & Time**

This benefit is mentioned most often when talking with students in DE courses. They seem to like the flexibility of anytime anywhere learning due to hectic schedules and busy lifestyles. The flexibility allows some students to complete degree programs who would otherwise not have the opportunity to do so. Along with flexibility, time is mentioned as a benefit, meaning that the work students do and interactions through discussion forums, listservs and email can take place at any time. Unfortunately, time is also a barrier because unless a learner is well-organized and does not procrastinate s/he may find him or herself waiting until the last minute to complete projects allowing quality to suffer.

#### **Travel eliminated**

The graduate students in many of our education programs work full time and cannot afford to leave employment in order to complete a degree program. For these people the time it takes to travel to a campus may be alleviated by taking a DE course. Others may live in remote areas of our state and travel is a significant problem for them.

## **Cost**

Cost is listed as both a benefit and a barrier. While the cost of travel and possibly the cost of childcare are eliminated, there are other costs associated with taking online courses that are not issues with FTF courses. These are listed in the next section; barriers.

## **Barriers**

### **Change in pedagogy (Constructivist vs. Traditional)**

I have been practicing constructivism in my FTF teaching for some time now and find that adult learners unfamiliar with this pedagogy sometimes have difficulty understanding what it means to them as learners. I have discovered that I must review my philosophy of teaching and learning and discuss constructivism at the beginning of each course so students new to the theory will not misunderstand what we do in class and the methods used in order to accomplish our goals. While DE courses lend themselves to constructivist learning theory (Huang, 2002b) the students we may be attracting may be unfamiliar and uncomfortable with this new way of learning. It is even more important to take the time to discuss the pedagogy. While I consider the use of constructivist pedagogy a benefit not only to FTF but also to DE, I have experienced that overcoming the idea of traditional lecture and “professor as sage” are barriers for students.

## **Cost**

Students who are taking courses online may find that resources are needed that were traditionally found on campus such as specific software in labs. The additional cost of purchasing such software or equipment may be impossible for some students. This barrier must be stated up front as students make decisions about whether to become involved in a DE course rather than FTF. This barrier is more specific to IT courses than other education courses but may

also be a detriment for courses such as science education in which materials and equipment are necessary.

### **Learner attributes and expectations**

Learners involved in DE must be ready to embark on such a journey. They must have certain characteristics that we often ignore when putting courses out there for the masses. Students who succeed in online courses have learner autonomy (Huang, 2002) which implies the learner's ability to find resources, set plans, and engage in peer activity and support. The successful online learner must be well-organized and highly motivated.

I was particularly interested in student responses indicating that the work load should be lessened for online courses since the interactions among students were typically written responses in discussion forum. This is a dilemma. The FTF course covers a specified amount of material and the same course online should do the same. Does the learning style of the student impact the need for less reading?

Many students feel a need for more social interaction than DE typically provides. Even though efforts are made to allow for student interaction through the online tools available, it may not be enough for some students.

### **Conclusion**

There will be more and more online courses developed to accommodate non-traditional students. In order to provide the social interaction that many students miss in DE it may be necessary to devise strategies to be used online that will duplicate as closely as possible what students expect in FTF classes. As video conferencing technology becomes more accessible we may overcome some of the barriers and dissatisfaction expressed by online students today.

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