Comparative Analysis of Face to Face vs. Online Teaching Methods

IET 603 – Group Project

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Face to Face Vs. Online Learning

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Introduction

The internet has become an essential part of society. Its uses have become varied and important. For educational purposes the internet has become a way to teach classes without having the face-to-face sessions of traditional classes. By introducing online courses, education has taken on a variety of students ranging from those on the other side of the planet, to those who work full time jobs and are unable to attend courses.

Since the introduction of online courses, studies have been completed to see the value of the class for an online student versus those who still take the traditional face-to-face classes. The interest in analyzing online courses versus face-to-face courses lies in the desire to see how the results of the two opposing methods differ and how the students involved affected.

In order to fully understand the student’s view of online classes, compared against the traditional face-to-face class, studies can be conducted. Such a study, as this one, will seek to identify the student’s ideas and opinions of the two different types of courses. The identification of issues that students have will assist in the development of online learning so that it can serve the same purpose as the face-to-face counterpart courses. By utilizing the methodology present in this study, it will be possible for online courses to be compared to face-to-face courses through the data gathered from the students enrolled in this school.

Background – Significance of Study

Electronic learning covers a wide set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast,
interactive TV, and CD-ROM. Thus, this definition defines eLearning as basically anything that is electronic.

The global market for corporate eLearning will grow nearly 27%, compounded annually (McGee, 2004). IDC forecasts that the eLearning market, which was about $6.5 billion in 2003, will increase to more than $21 billion by 2008, and hit $52.6B by 2010.

![Projected Corporate e-Learning Growth](image)

Figure 1: Projected Corporate e-Learning Growth.

Almost 3.5 million students were taking at least one online course during the fall 2006 term; a nearly 10 percent increase over the number reported the previous year (Allen, Seaman, 2007). In addition, the 9.7 percent growth rate for online enrollments far exceeds the 1.5 percent growth of the overall higher education student population. (nwlink, 2013)

**Strengths of Online Learning**

There are many reasons why online programs have become a popular form of distance learning in higher education today. The online environment offers unprecedented opportunities for people who would otherwise have limited access to education, as well as a new paradigm for
educators in which dynamic courses of the highest quality can be developed. Here is a list of some of the major benefits of online programs (ION, 2013):

*Anywhere*…

The main advantage of asynchronous online learning is that it allows students to participate in high quality learning situations when distance and schedule make on-ground learning difficult-to-impossible. Students can participate in classes from anywhere in the world provided they have a computer and Internet connection. In addition, the online format allows physically challenged students (and teachers) more freedom to participate in class. Participants access the Virtual Classroom through their computers instead of having to "go to class" physically.

*Anytime, Any Pace*…

The Virtual Classroom is accessible 24 hours a day, seven days a week. Time efficiency is another strength brought by the online learning format. Asynchronous communication through online conferencing programs allows the professional juggling work, family, and study schedules to participate in class discussions. There is no question about doing the work; just do it at the times that are more convenient. Students can access their courses at any time of day or night. Further, they have continuous access to lectures, course materials, and class discussions. This is particularly convenient for those who may need to reread a lecture or take more time to reflect on some material before moving on.
Synergy

The online format allows a dynamic interaction between the instructor and students and among the students themselves. Resources and ideas are shared, and continuous synergy will be generated through the learning process. Each individual can contribute to the course discussions and comments on the work of others. The synergy that exists in the student-centered Virtual Classroom is one of the most unique and vital traits that the online learning format possesses.

High Quality Dialog

Within an online asynchronous discussion structure, the learner may reflect on comments from others before responding or moving on to the next item. This structure allows students time to articulate responses with much more depth and forethought than in a traditional face-to-face discussion situation where the participant must analyze the comment of another on the spot and formulate a response or otherwise lose the chance to contribute to the discussion.

Level Playing Field

In the online environment, learners have a certain measure of anonymity. Discriminating factors such as age, dress, physical appearance, disabilities, race and gender are largely absent. Instead, the focus of attention is clearly on the content of the discussion and the individual's ability to respond and contribute thoughtfully and intelligently to the material at hand.

Access to Resources

It is easy to include distinguished guest experts or students from other institutions in an online class. Further, today's students have access to resources and materials that may be physically located anywhere in the world. An instructor can compile a resource section online...
with links to scholarly articles, institutions, and other materials relevant to the course topic for
students to access for research, extension, or in depth analysis of course content material.

**Weaknesses of Online Learning**

*Equity and Accessibility to Technology*

Lack of access whether it be for economical or logistics reasons will exclude otherwise
eligible students from the course.

*Computer Literacy*

Both students and facilitators must possess a minimum level of computer knowledge in order to
function successfully in an online environment.

*Limitations of Technology*

User friendly and reliable technology is critical to a successful online program. However, even
the most sophisticated technology is not 100% reliable.

*The Students*

While an online method of education can be a highly effective alternative medium of education
for the mature, self-disciplined student, it is an inappropriate learning environment for more
dependent learners

*Lack of Essential Online Qualities*
Successful on-ground instruction does not always translate to successful online instruction. If facilitators are not properly trained in online delivery and methodologies, the success of the online program will be compromised.

**Levels of Synergy**

Online learning has its most promising potential in the high synergy represented by active dialog among the participants, one of the most important sources of learning in a Virtual Classroom. However, in larger classes (20 or more students), the synergy level starts to shift on the learning continuum until it eventually becomes independent study to accommodate the large class. At this point, dialog is limited as well as interaction among participants and the facilitator. The medium is not being used to its greatest potential.

**Review of Literature**

The internet has become a device for learning. Classes can be taken online instead of face to face. This can have varied effects on the students and teachers participating in the class. Many studies have been conducted pertaining to the use of online environments as classrooms.

In the article “Teaching College Courses: Online Versus Face-to-Face, the researcher studies the differences that a faculty member would experience between teaching a face to face course, and an online course. By utilizing interviews with faulty teaching distance learning courses, and studying the reliance that these courses have on text based communication, the researcher was able to draw conclusions about the influence of online classes on the ability to learn. By including the advantages of online learning the researcher drew conclusions about the
changing faculty-student relationship that is experienced in college (Smith, Ferguson & Caris, 2001).

Another such study, “Comparative Analysis of Learner Satisfaction and Learning Outcomes in Online and Face-to-Face Learning Environments,” probe to seek answers for the satisfaction and outcomes between the two types of courses. This study compared the undergraduate courses online, to the same course taught in the face-to-face fashion. The comparisons were based on student ratings of the instructor, the course quality, and an assessment of the course interaction, structure, and support. The outcomes measured were the course grades and a student self-assessment. The results of this study showed that students in a face-to-face course had more positive perceptions of the instructor and the overall course quality (Johnson, Aragon & Shaik, 2000).

In 2010, a study was published titled Learning Style and Effectiveness of Online and Face-to-Face Instruction. In this study two sections of the exact same course were studied. One was online; the other was a face-to-face course. The gender, age, learning style, and preferences were studied. The same instructor was used to teach both sections. The results were tested based on final grades, test grades, course effectiveness, and effectiveness of tasks. The study showed that there were no major differences in test scores, assignment scores, participation grades, or final scores. There were no significant differences in the styles and learning preferences of the students in the two sections either. In this study, it was concluded that the learning activities were equally effective for both online, and face-to-face courses (Neuhauser, 2002).

In a 2004 study, the variation between online and face-to-face classes was studied for specifically a pharmacology course. This study evaluated all aspects of a course, which included
student learning to effectiveness of the instructor and course. A sample of students was chosen to participate in the online course. A different sample was chosen to participate in the face-to-face course. The same content was provided in each course, which included the exact same examinations. The students taking each course were among the same level. They had no prior experience with the content and were generally around the same age. The results of the study revealed that students thought positively of the online courses. There were no significant differences in the scores from the face-to-face class to the online class (Bata-Jones, 2004).

One last study to look at, “A Comparison of Student Evaluations of Teaching Between Online and Face-to-Face courses,” was conducted in 2007. This study was conducted pertaining to the biased evaluations between online courses and face-to-face courses. The analysis was based on open ended questions that were provided by students in a variety of courses, taught by a variety of instructors. The study identified no significant difference in the appraisal test segments, which concluded that no biased evaluation was present (Kelly, Ponton & Rovai, 2007).

Research Questions-Hypotheses

The advances in technology are seen every day allowing us to do things previously thought to be impossible. The education system has transformed dramatically along with society in this technological age. In recent years the online classroom has become an integral aspect of most schools and university. Morehead State University is among these educational institutions that embrace these online courses. These online courses open up many doors of opportunity for students who cannot commit to the traditional college experience and allows them to further their education from the comfort of their own home. The problem with many of these online courses
is that students are left to their own devices to teach themselves the material. This research project is going to be preforming a comparative analysis of student learner satisfaction and preference between online and face-to-face teaching methods. The questions that study is looking to answer are the following

1. What are the reason students take online courses in the Applied Engineering and Technology Department at Morehead State University?

2. What is the most challenging aspect of online courses in the Applied Engineering and Technology Department at Morehead State University?

3. Do students prefer to take face-to-face courses over online courses in the Applied Engineering and Technology Department at Morehead State University?

4. What recommendations do the students have to improve the challenging aspects of the online courses in the Applied Engineering and Technology Department at Morehead State University?

The hypothesis is that students find interaction between the professor and student to be the most challenging aspect of online courses and prefer to take face-to-face courses in the Applied Engineering Department at Morehead State University. The data for this research project will be collected by distributing a survey (which can be found on page 12) to students who are in the Applied Engineering and Technology Department at Morehead State University. The survey is designed to assess the reason students take online courses students at Morehead State University. Analyzing the answers will show the students preference of either online or face-to-face courses, the students opinion of what is the most challenging aspect of the online course and their recommendations on how to remedy the issues.
Online Courses Questionnaire for Undergraduate Students

Information

1. What is your major?

2. What semester of undergraduate school are you in?

3. Have you taken an online undergraduate course before?
   a. Yes
   b. No

4. If you answered yes to question 3 why did you take the online course?
   a. No face-to-face option was available
   b. Had the option to take face-to-face but chose online
   c. Do not live on/near campus
   d. N/A

5. If given the choice between taking an online or face-to-face course which would you prefer? Please explain your answer.
   a. Online
   b. Face-to-face

6. What is the most challenging aspect about taking an online course?
   a. Knowledge of technology
   b. Lack of interaction between professor and student
   c. Lack of instruction
   d. Learning/Understanding the material
   e. Other (please specify) __________________________

7. Based on your answer for number twelve, what is your recommendation to fix this problem?
   ____________________________________________
   ____________________________________________
   ____________________________________________
Findings

After analyzing the surveys it was quite clear that face to face courses are preferred over online courses. Of the 45 students that responded to the survey 33 of them preferred to take face-to-face courses and 12 students that said they would prefer to take online courses. Of those 12 students 9 of them do not live near campus and/or have full time jobs. Subtracting the students who do not live on campus from the total number of surveyed students 33 out of 36 students who live on/near campus prefer to take face-to-face classes. Figure 2 shows the preference of either online or face-to-face. As you can see the data clearly shows that students prefer face-to-face over online.

![Pie Chart of Student Preference of Online or Face-to-Face](image)

Figure 2: Pie Chart Representation of Student Preference.

Why did the student choose to take these online classes even though they clearly prefer to take face-to-face? The students were asked why they took an online and they were given these
choices; No face-to-face option was available, had the option to take face-to-face but chose online, Do not live on/near campus or not applicable. The results of the surveys are as follows.

No face-to-face option was available was 34, had the option to take face-to-face but chose online was 1, do not live on/near campus was 12 and not applicable was 1. Figure 3 shows the breakdown of why students chose to take the online course.

![Chart of Frequency vs Reason for Taking Online Course](image)

**Figure 3: Bar Chart of Reason for Taking Online Course.**

So from the first two figures it is clear that students prefer to take face-to-face over online and the reason for this is because there is no face-to-face option that was available to take. So for the students who would rather take face-to-face what issues did they have that causes the dislike to the online courses. The students were asked what the most challenging aspect of the online course was and they had a choice of the following; Knowledge of technology, lack of interaction between professor and student, lack of instruction, learning/understanding the material or other.
The results of this question are as follows; knowledge of technology was 0, lack of interaction was 15, lack of instruction was 10, understanding/learning the material was 12 and other was 6. Figure 4 is a Pareto Chart of the issues that students have with taking online course in the Applied Engineering and Technology Department at Morehead State University.

![Pareto Chart of Most Challenging Aspect](chart.png)

In response to asking what the issues with online courses are, the students were also asked to give recommendations of how to resolve the issue they claimed was the most significant. The students that listed lack of interaction, understanding/learning the material and lack of instruction, the most common recommendations were to make the course a hybrid or have the instructor provide example videos showing how to solve problems that pertain to what is being taught.
Recommendations

From these recommendations of the students it would be quite simple to make just a few minor changes to how the online courses operate and these few changes would significantly change the negative attitudes towards online courses in the Applied Engineering and Technology Department at Morehead State University. Making online courses into hybrid courses could be as easy as the instructor asking the students at the beginning of the course how many students would be interested in meeting bimonthly or monthly to discuss questions the students have. The face-to-face meeting would be strictly voluntary to the students who would find it helpful. This would give the students time to converse with the professor and ask questions regarding the material and the professor could demonstrate how solve equations. It would also give the students the opportunity to communicate with one another and establish relationships. If this is not possible then posting example/instructional videos showing step by step how to solve problems that require the use of equations. A very common response given by the students when asked to explain their choice of online or face-to-face was that in many of the online courses the assignments are to just read chapters and answer questions about the material in that chapter with any direction to instruction especially when it comes to solving equations. By posting example videos that show the students the proper procedures to solve the various types of equations. With these recommendations put into place there would be a drastic change in attitude towards the online courses and in the student’s eyes, get more out of the online courses.

Conclusions

Now that the survey results have been analyzed it is fair to conclude that the majority of the students enrolled in the Applied Engineering and Technology Department (AET) prefer the
traditional face-to-face classroom setting as opposed to online learning approach. However, a large portion of the students suggested it be beneficial to the program to provide interactive tutorial videos in the online classes or implement a hybrid section to the course altogether. The major problem that is revealed in this study is that the students that cannot attend the face-to-face session are obviously fonder of e-Learning whereas the students that live on or near campus feel like they have not only moved here for no reason but are also being neglected what they consider an ideal learning experience.
Bibliography


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