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# "On-campus" vs. "On-line": Student Perceptions & Performance

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## Abstract

Last Fall, my university began an initiative to offer courses online in what many call a "distance learning" environment. Being an early adopter of the Internet and WWW in my traditional on-campus courses, I jumped at the chance to offer a course in an on-line environment. This paper will briefly explore the differences between on-campus and on-line education, discuss my approach for implementing the course (including a comparison/contrast of student perceptions and performance in both on-campus and on-line sections of the same course), and conclude with some implications for educators endeavoring to teach in a distance learning environment.

## Introduction

Last Fall, when asked to be one of 12 faculty to undertake a pilot program to develop a distance learning course, I eagerly accepted the challenge. As an early adopter of the Internet and WWW in my traditional on-campus classes, it seemed to be a natural extension of what I was already doing regarding pedagogical approaches. Much of my course material was already on-line and accessible through my course home page. What I was unsure of was how to duplicate the "classroom environment" and how students would respond to the lack of face-to-face, personal contact typical of an on-campus course.

## The Traditional Approach

The student receives a paper syllabus from the instructor on the first day along with any necessary information regarding course policies, deadlines, supplementary readings, and other such material. Lecture notes created by the instructor (either by hand or using a tool like Microsoft PowerPoint™) are made available and distributed to the students in the form of an outline and/or handouts. Exams, usually given several times each term, are updated and then duplicated on paper prior to class.

Student projects or programs are turned in either on paper or on floppy disks, which then have to be scanned for viruses. Grades, logged into a paper grade book or entered in a spreadsheet, are then used to create a printout of current grades that is periodically posted on the instructor's door. If this sounds familiar, you are not alone. Many faculty are still conducting their classes in this tried and true, albeit low-tech approach.

## The New Electronic Paradigm

The Internet and the World Wide Web have revolutionized the way we teach (Bender, 1995; Chimi and Gordon, 1997; Granger & Lippert, 1995; Adams, 1998), making it possible to move much, if not all, of what we used to do on paper into the realm of electronic media. The electronic classroom still revolves around the primary classroom document, the syllabus. This document, however, is no longer a paper contract, but frequently a living, dynamic electronic web page with multiple parts and pieces all linked together using hyperlinks (Purao, 1997; Falcigno, 1995). By using an on-line syllabus, the instructor can also link his or her syllabus to other external sites on the web and even include sound and full motion video! Any changes to the syllabus regarding dates of assignments and exams are immediately posted and broadcast to the students. An applet allows me to display a scrolling message of my choosing at the bottom of the page. Exams are taken on-line and corrected automatically by the computer, ensuring accuracy and timeliness. Programs such as Course Test Manager™ developed by Course Technologies enable an instructor customize tests according to need. Students come to class, log in to the test manager, and enter the exam password provided to them. They then complete the exam in the allotted time. Once they are finished with the exam, the program grades the objective questions automatically and saves the grades in a log file. Students may be allowed to see their score immediately upon completion of the exam and/or also view their exam answers on-line. By providing them with the ability to check their answers to the questions on their own time, valuable class time is saved for other instructional purposes. Office hours can be used to clarify any answers that students may not understand. These

programs make the instructor more productive and he or she can now spend additional time preparing.

Communication among students is an important part of the learning process. Since we are moving away from a mini-computer based e-mail server to a fully integrated client/server solution, it becomes increasingly necessary for students and the instructor to be able to communicate with one another at any given time (Zack, 1995). To facilitate such communication a class discussion group can be used whereby students can communicate with each other and with the instructor. The use of software packages such as WebBoard™ by O'Reilly Software allow users to have real-time video and audio conversations using their PC and the Internet. Such video-conferencing and audio-conferencing are useful when students are in physically different locations, such as with distance learning. This allows group interaction and communication, despite geographical isolation (Hall, 1997; McCormack, 1998; Motiwalla & Duggal, 1998). Discussion groups enable students to post messages and

ask questions at any time. They log into the program at their convenience using the Internet to read postings from the instructor or other students.

### Comparing on-campus and on-line

The impact of student perception and performance regarding distance learning was explored using a survey given to both the on-campus and on-line sections of the course. In order to determine whether the delivery method was the primary factor in student performance and satisfaction with the course, both sections used the same textbook, the same exams and programs, and required the same deliverables from each student. Office hours, available to on-campus students, were duplicated on-line in a virtual sense using e-mail, and electronic discussion forum, and telephone access. Results of student performance are shown in the table.

#### Comparison of on-campus vs. on-line course

Variable	On-Campus (n = 24)	On-Line (n = 13)	Significant?
Age (mean age)	28	26	No
Gender (% male)	71.4	66.7	No
Previous MIS Courses	3	2	No
# Years Work Experience	0-2	0-2	No
Text explains concepts well	78%	81%	No
Instructor available to clarify problems	96%	93%	No
# of programs sufficient to learn concepts	87%	92%	No
Real-time interaction with peers is necessary and important	41%	23%	<b>Yes</b>
Upon completion, have good grasp of Visual Basic	81%	83%	No
Recommend course to peers	88%	92%	No
Recommend instructor to peers	95%	97%	No
Plan to take another DL course	N/A	94%	No
Course required more time than on-campus course	N/A	55%	No
Exam grade (mean)	77	82	No
Final course grade (mean)	83	79	No

### Results

Student perceptions of electronic learning suggest that it worked well for this particular programming course. With respect to academic performance, students in the on-line section performed better on the final exam by 5

points than their counterparts in the on-campus section, however they were outperformed by their on-campus peers in overall grade by four points. Such differences do not appear to be significant, however further research with a larger sample size would help to validate these results. One significant finding was the students

perception of importance of interaction among their peers. Those taking the on-line section were half as likely to feel that interaction in real-time was important and necessary. This may be a direct results of why they took an on-line course; they may be more comfortable working on their own without much interaction from their peers. This brings up an interesting point. Distance learning, however, may not be suitable for all courses. Since programming is a topic which requires a great deal of time in front of a PC and comparatively little time in person-to-person interaction, it worked quite well. Courses which involve a lot of interpersonal communication and information sharing would probably be difficult to duplicate in an on-line setting. Threaded discussion groups are one way to accomplish this, however the true dialectic among students is lost. Thus, faculty need to explore their course topic for suitability; distance learning can be a wonderful addition or a poor alternative to the traditional classroom environment.

### **Implications for educators**

Many universities are beginning to look at distance learning as an alternative means of content delivery and to reach non-traditional populations toward (Bialaszewski, et. al., 1998; Fischer & O'Leary, 1998; Papp, 1998). The creation of a distance learning course has many rewards. Students generally like using a technology that they will employ in the working world, one which facilitates their learning and allows them to learn on their own time in their own way. Instructors can devote additional time to preparing and planning the course while spending less time with the logistics. In fact, it often enables the instructor to devote more time to the classroom and to help students on an individual basis. The need to begin moving toward such a paradigm becomes clearer every day as the Internet moves further and further into the mainstream. Distance learning will probably never replace the traditional on-campus class, however it does provide alternative pedagogical approaches to learning and can make classes more fun and applicable and teaching more rewarding and productive.

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