THE DESIGN AND DELIVERY OF EFFECTIVE WEB-BASED INSTRUCTION:
AN ANALYSIS OF FACULTY CONCERNS

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ABSTRACT

This paper examines how online teaching and learning affects how faculty in higher education teach, and the way students learn. The paper contains findings from an online survey of faculty at a regional university. The responses presented from the study highlight concerns about online teaching expressed by the faculty.

INTRODUCTION

A new approach to higher education is sweeping across the nation. Faculty and students are embracing online learning in large and rapidly increasing numbers. Online learning is a computer mediated approach to teaching and learning. It can involve text placed in a Web site, email, chat rooms, bulletin boards, streaming video, etc. Some of these aspects are asynchronous while others (e.g., chat rooms) are synchronous. A faculty member and student who have access to a computer, with a modem and a connection to the Internet, have the basic technology needed to interact in this relatively new educational environment.

Online learning is capable of creating an interactive environment where the teacher and student may never have face to face contact. In fact they may be in different states or even different countries. In an asynchronous environment, students can choose what time of day or which days they choose to access their class Web site and post material or respond to bulletin board discussions.

PURPOSE OF THE STUDY

The purpose of this study is to consider how online teaching and learning is affecting how faculty in higher education, particularly in the areas of management and marketing, teach and the way students learn.

The study presents findings from an online survey of faculty at West Texas A&M University (WTAMU). The faculty responses included in this paper represent 110 completed questionnaires. The responding faculty provided responses to fourteen agree/disagree statements.

WEST TEXAS A&M UNIVERSITY AND WT ONLINE

West Texas A&M University is a regional university located in the Texas Panhandle. Because of the low population density of the Texas Panhandle region, WTAMU has become a pioneer school in Internet instruction for the Texas A&M System. (Terry, Owens, and Macy, 2001)

WTOnline's development is strongly supported by courses delivered in the Pickens College of Business. "WTOnline, the university's Internet-based course curriculum, started in the summer of 1997 with an enrollment of..."
24 students in one graduate level marketing course. This graduate level course in marketing initiated the College of Business's Internet-based option in the MBA program." (Terry, Owens, and Macy, 2001)

The rapid growth in online course delivery, and the leadership role of the Pickens College of Business, is reflected in comments made recently by Flavius Killebrew, Provost and Vice President for academic affairs. Killebrew reported that, "Fall 2002 enrollment in WTOnline totals 4,056. This represents 2,531 actual students taking online classes. The students are taking a total of 10,897 online credit hours this semester." (Werpney, 2002).

WTAMU has labeled their WTOnline courses as being equivalent of those taught in a traditional classroom. The literature and experience of these authors reflects that reputation of a program and institution is a real concern of prospective distance learning students. When a traditional regional university elects to add online courses to their inventory of educational options for students, that university is offering educational options backed by regional accreditation and professional accreditation.

Students are being attracted to online courses in increasingly larger numbers (Boehle, Dobbs, and Stamps, 2000; Christensen, Anakwe, and Kessler, 2001). WTAMU is one example of a university committed to meeting this growing demand by students. A review of literature related to distance learning indicates that in addition to academic area expertise, faculty who teach online courses will need support from the university in a variety of areas, including but not limited to, additional technology skills and technical support. Findings from a review of distance learning-related literature reflect that there are a variety of issues facing faculty who are working with online teaching. These issues have a direct impact on the faculty member's ability to be effective in designing and delivering Web-based instruction. These issues are highlighted in the following section of this paper.

**IMPACT OF ONLINE INSTRUCTION ON TEACHING AND LEARNING**

This new format for teaching and learning is having a strong impact on the way faculty teach and the way students learn. As indicated earlier, students are showing a strong preference for access to online courses. Meeting the preference of students to take courses taught in an online environment requires faculty to adopt roles and techniques different from those used by a faculty member delivering a traditional lecture in a face to face classroom (Bothun, 1998).

Teaching in the online environment is also requiring faculty to have certain basic technical skills and a technical support infrastructure that may not be as critical in a traditional classroom. In the traditional classroom, if the Web site is down, there is still the possibility of face to face interaction and even substitute technology such as showing PowerPoint™ slides through a data projector or using transparencies with an overhead projector. In an online environment, if access to the Internet and or email is not available, interaction with the class Web site, the faculty member, or other students ceases.

Faculty who make a commitment to teach courses offered online are obviously making a commitment to learn and use effectively the technology needed to design and deliver courses in the online environment. WTAMU, along with universities across the nation, has created a center to provide faculty with support in learning to use instructional technology and to develop Web-based courses using this new technology. The growing importance of information technology in our work lives has been emphasized for several years (Kacmar, Wright and McMahan, 1997). The rapid growth of online course delivery makes the continuous development of Web technology skills a necessity for today's faculty.

Along with the need for current Web technology skills, faculty need the ability to design and deliver their course on the Web in an interactive format. There is a difference between teaching using the Web as a tool for delivering interactive education and simply providing Web-assisted courses. The importance of this issue has been stressed repeatedly in the literature (Christensen, Anakwe, and Kessler, 2001; Ferguson and Wijekumar, 2000; Deming, 2000; Peek, 2000; and Blotzer, 2000).

Another issue facing faculty today is the need to have familiarity with the location of current Web-based information and to use the rich resources in the form of supplementary materials currently available online. Faculty
have a unique opportunity to link students directly to numerous and relevant supplementary sources available on the Web.

Continuous improvement, a concept linked to Total Quality Management programs used in much of industry, is critical in online courses. Information placed on the Web cannot be out of date and still be considered relevant by today's students. Something placed in a Web-based six months ago may look out of date to a student taking that same course today.

Teaching in the online environment also requires faculty to have training in how to design and deliver interactive instruction using this new format. The faculty member is still the academic expert but now is also expected to develop teaching skills specifically for the online format as well as developing skills in designing and delivering effective instructional content using computer technology (O'Malley and McCraw, 1999; Blotzer, 2000; Deming, 2000; Christensen, Anakwe, and Kessler, 2001).

Learning online may well require different approaches to evaluation. Using traditional multiple choice/true-false exams may not be the best way to evaluate learning in an online class. At least one study has shown that using a number of short cases and a high level of interaction was a more valid way of evaluating online student learning (Ferguson and Wijekumar, 2000).

Teaching online demands a significant investment of time on the part of the faculty. Teaching online requires that material be posted to a Web site in a particular format in advance of the time students will access the material. There can be no more "winging it" where a faculty member walks into a classroom and "just talks" for an hour or so. Good instructional design in an online course, like good instructional design in a traditional course, requires intentional fit of material to specific objectives.

Faculty who are designing and delivering online courses also need knowledge of the student market (Ferguson and Wijekumar, 2000). Both nontraditional and traditional age students are expressing a strong preference for online classes. Both can learn effectively in the online environment but the same course design and delivery work may not work as well for each group. It has been commonly accepted that the design and delivery of graduate courses would be different from that of undergraduate courses. As faculty gain more experience with the delivery of online courses, it may well be that different groups require different types of support and interaction.

A study conducted at WTAMU provides insight into some of the faculty views regarding teaching and learning online. Approximately 50-percent of the 200 faculty contacted replied. Open-ended questions to which faculty responded included:

- What do you believe are the WTOnline teaching program's principal strengths?
- What do you believe are the WTOnline teaching program's principal weaknesses?
- What are your specific suggestions for improving the WTOnline program?
- Are there specific courses or degree programs that you believe should be added to the WTOnline program?

The concerns identified by faculty through this survey tended to focus on the following issues:

- Training/Updates to training
- Support
- Class Size
- Legitimacy of Online Learning
- Applicability of Course to Web Format

These faculty concerns are discussed in the following section of this paper.
FACULTY CONCERNS

Information provided in distance learning-related literature has addressed faculty needs in order to provide quality teaching and learning experiences in an online format. The information provided in the WTAMU survey regarding faculty concerns has been reviewed and evaluated. Based on these findings, conclusions and recommendations have been drawn. These are discussed in the following section of this paper.

Although the scope of this study was university-wide, its findings are relevant for business, and specifically marketing, programs. We were not able to conclude from this study if faculty from other disciplines differ from those in the business school.

For an online program to succeed, the faculty must be both competent and confident in the technologies used. This begins with the university being committed to training the faculty in the minimum amount of computer skills necessary for authoring and designing an online course, as well as providing more advanced training as the professor develops his skills. The faculty interviewed in this study often expressed concerns about not knowing where to begin or how to convert their brick-and-mortar courses to a two-dimensional web format. Computer skills varied considerably among respondents, and to expect them to become proficient web programmers would be an unreasonable demand. Thus, the university must develop training programs that will arm faculty with only the basics, leaving advanced programming matters to IT staff.

Faculty comments included:

Amount of time required to prepare the course. The time spent by instructor with technical details. Training was too brief. Quality of courses seems to vary widely. I have not yet taught an online course, but it would seem some of the technical assistance is not forthcoming in a timely fashion... Not enough training time. It is time-consuming (initially).

Ongoing support is another issue that recurred. This includes having full-time staff who can answer questions, assist in course development problems, and perform the necessary programming for online exams, audio/video streaming, and other course enhancements. For faculty who are not well versed in web programming techniques, having staff support demonstrates university commitment to the online program, and reduces the need for faculty to become programmers.

Comments included:

The computers provided to the faculty, in general, are extremely outdated. Slow bandwidth, poor computer support services. Unexpected technological problems.

A third issue that warrants attention is online class size. While the temptation may be great to allow course enrollments to swell (since there are no physical limitations such as classrooms), faculty who have taught online insisted on keeping class sizes low, preferably not more than 30 or 40 (and less for graduate courses). Faculty felt that they would have to compromise quality in order to keep up with large numbers of students; daily email activity is difficult to attend to when enrollments increase, and any regular semblance of faculty/student contact is likely to be minimal.

Faculty comments in this area were common and to the point:

The unlimited enrollment. Instruction will naturally be watered down in order to teach larger sized courses. Too many students are allowed to enroll in one course. Inability to cap enrollment.

A fourth concern centered on the legitimacy of online learning in general. This concern tended to come from those with low computer skills, as well as those reaching their retirement years. In addition, several faculty
expressed a lack of faith in anything related to computers, and therefore had major doubts that any learning could occur outside the traditional classroom.

Faculty remarks included:

*It conveys information; I am not sure it has all that much to do with education.*

'Discussions' are inadequate. The chat rooms are OK but they do not come close to the richness possible in a face-to-face class discussion.

*Limits interpersonal communication with students.*

Other concerns came from those who teach courses that may not lend themselves well to a web format, such as lab-based courses, the performing arts, and courses with a major quantitative component. While some courses may truly be difficult, if not impossible, to teach online, some of this reluctance may signify an inability to envision how a course could be adapted to the online format.

Comments included:

*How can SES101 (a physical education course) be taught online? Aren’t there some physical aspects of this course?*

*How does a student do chemistry 101 labs online? Do a dry lab? If so, this lab experience is NOT good enough.*

**CONCLUSIONS AND RECOMMENDATIONS**

In general, faculty comments were more negative than positive about online learning. Those faculty with online experience were quite satisfied with the format, but were still concerned about ongoing training and class size. Those with little or no online experience, though, were the most vocal in criticizing the method.

In order for an online program to be successful, the faculty must be convinced first of the validity of the platform, and then assured that they will not be left to fend for themselves along the way. An online program needs a major commitment from the university, in terms of staff, computer resources, training, and a willingness to add more course sections as enrollments increase.

Specifically for business and marketing courses, training and support are needed to ensure that the quantitative courses are converted smoothly to the online format. In some cases, a high degree of interactivity is needed for courses (like statistics, market research, and accounting) so that students may engage in numerical exercises and sensitivity analyses. In qualitative courses, like much of the marketing curriculum, a wide range of both educational and entertaining materials are needed in order to exploit the capabilities of the web, as well as bring the subject to life.

Perhaps the greatest implication is that the university must assist some faculty who cannot envision how their course can be delivered via a computer. This is a frequent hurdle for faculty joining the online movement, and a common complaint from those who feel like they are being coerced into learning a new way to deliver old material.

**REFERENCES**


Bothun, Gregory D. (1998). "Distance Education: Effective Learning or Content-Free Credits?" *CAUSE/EFFECT.* 21, #2, 28-31, 36-37.


