A PROACTIVE APPROACH TO VIRTUAL EDUCATION: INCORPORATING STUDENT PERCEPTIONS

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ABSTRACT

As virtual education degree programs proliferate across the world, facilitated by advances in computers and communications technology, traditional universities face a challenge in keeping up with these changes or being left behind. From the students' perspective, the challenge is deciding on the quality of a virtual education degree program, due to lack of accreditation for such programs. As these programs require tremendous investments to create the required infrastructure, it is imperative that educational institutions understand student needs before implementing such programs. Previous studies have examined student perceptions based on online courses that were completed by them. This study is unique as we present a proactive approach to examining student perceptions towards virtual education degree programs.

KEYWORDS: Virtual education, student perceptions, virtual education degree programs, Internet, World Wide Web.

INTRODUCTION

The merging of computers and communications technology has revolutionized the delivery of education to students worldwide. More and more students now have access to educational courses and programs due to the explosive growth in Internet usage. As this technology advances and spreads to a greater number of households across the world, universities face the tough choice of incorporating the technology in their classrooms and offering online courses, or being left out of this market. In the March 10, 1997 issue of Fortune magazine, Peter Drucker predicted that "universities won't survive" 30 years from now. The market for corporate e-learning is projected to reach $11.4 billion by the year 2003 (Schneider, 2000). Already there are several schools that have begun offering courses over the Internet. For example, the University of Phoenix is the largest private university delivering on-line degree courses to 56,000 students. The traditional institutions of higher education are also moving towards virtual instruction. Penn State (World Campus), the University of Minnesota, UCLA (Home Education Network), Lansing Community College, and Florida's Gulf Coast University are other examples of institutions delivering instruction electronically (Gladieux & Swail, 1999). Illinois Virtual Campus (www.ivc.illinois.edu) and Indiana College Network (www.icn.org) are similar examples where several schools in these states have come together to offer courses over the web. California has developed its own California Virtual University, which offers about 700 courses online, but no degrees. Virtual education has become a billion dollar industry that will continue to grow in the future.

Higher education institutions are also forming partnerships with the private sector to support their move towards virtual classrooms. Western Governors University (WGU), which was formed by the governors of 17 states in partnership with Microsoft, Sun Systems, IBM, and AT&T, started as the nation's first exclusively virtual university in 1998 (Blumenstyke, 1998). WGU offers three degree

programs and certificate programs. Cardean University, an online "academy" established by UNext, an Internet education company includes as partners Columbia University, the University of Chicago, Stanford University, and the London school of Economics and Political Science.

As virtual education (VE) degree programs continue to proliferate worldwide, students will have several choices for online degree programs. This will make the task of decision-making a challenge for the students. Lack of accreditation for these programs further complicates the issue as quality can be suspect. As pointed out by Carnevale (2000) "assessing the quality of online programs remains a challenge." On the other hand, traditional educational institutions need to ensure that they are not left behind in offering VE degree programs. These institutions have the advantage of asking their students if they would like to enroll for VE degree programs. Not only should there be a willingness, but students can help institutions in determining what should be offered and how. In this paper we attempt to explore student perceptions about virtual education degree programs and factors that explain their willingness to enroll in such programs. It is important to note that we are determining student perceptions about a "degree program," and not just a few courses offered via virtual education.

> **In this paper, virtual education (VE) is defined as the process of knowledge or skill transfer that takes place using the World Wide Web (WWW) as the distribution channel. In a VE environment there are no traditional classrooms. Students are not required to come to the classroom. All instruction and interaction takes place over the WWW.**

The study seeks to explore the following research question: "Are students willing to enroll in a virtual education degree program?" What are some of the factors that help explain students' perceptions? Most of the studies so far have determined student opinions about a particular course they had taken to evaluate the course; this study takes a proactive approach and seeks to determine student opinions before a university spends millions of dollars to create the necessary infrastructure for VE. The students being the customers, it is important to consider what they feel or perceive about the value of this "product." We believe it is critical to identify issues and student perceptions before actually implementing or developing virtual degree programs. These perceptions can help the administrators and faculty members use technology and develop programs that address these issues so that students are more willing to enroll for such programs. At this time, further lack of universally accepted accreditation systems for VE degree programs necessitates that universities make an effort to reach out to their students to find out what they need.

The paper is organized as follows. In the next section we discuss the existing literature on student perceptions of VE. In Section 3, we discuss the methodology used for the study. Section 4 presents the results and discussion. We conclude the paper by discussing implications for the future for universities that plan to start VE degree programs and future research directions.

RESEARCH FOUNDATION

Several studies have examined student perceptions in an attempt to evaluate the effectiveness of web-based technologies. King, Harner & Brown (2000) measured student perceptions regarding "the effect of technology and student self-regulatory skills in two distance education courses." They found that

those students with higher "study skills" and "goal setting" factor scores were likely to register for future distance education courses. In another study, Gifford (1998) examined the perceptions of graduate students who took a course in research on curriculum and instruction taught entirely via the web. Students felt that self-discipline and self-motivation were needed to complete a course on the Internet and more time was spent on a web-based course compared to a traditional class. Usip and Bee (1998) determined undergraduate student perceptions about web based distance learning after they had taken a statistics course at Youngstown State University, in which web based instruction was integrated into the traditional environment. Students who had used technology before found integrating the web was useful in obtaining information and improving their performance in class. The nonusers did not feel that using Web instruction would improve their performance. Studies (Phipps and Merisotis, 1999; Owston, 1997) indicate that while there is no doubt that web based technologies have the potential of enhancing student learning, there is no empirical data to prove that students learn better in virtual environments compared to traditional classrooms. Most of these benefits are based on assumptions or perceived benefits, as research has not proved that students learn better in virtual environments, compared to the traditional environments. Carr (2000) points out that although there is a lack of empirical data, anecdotal evidence indicates that the retention rate is generally lower for distance-education programs, compared to the traditional programs.

Phipps and Merisotis (1999), in a review of the current research on distant education, contend that most of the research so far has focused on studying the effectiveness of individual courses rather than a complete degree program. They further note that research has not taken into consideration individual student characteristics such as gender, age, student experience, or motivation. These characteristics may impact students' willingness to enroll in a virtual degree program. In our study we explore student perceptions on virtual degree programs rather than a single course.

THE STUDY
This study was conducted in a rural mid-western university with approximately 10,000 students. The university has four colleges: education, business, art and communication, and letters and sciences. The majority of students enrolled in the university come from neighboring counties and cities within a 250-mile radius. The study was conducted in two phases. Phase I was a pilot study conducted to derive a list of questions that could be administered to students for the final survey. Fifty-nine undergraduate students in the business school (30 male and 29 female) were asked to respond to the following open-ended questions.

Virtual education has been defined as the process of knowledge or skill transfer that takes place using the World Wide Web as the distribution channel.
- What would the impact of virtual education be on the future of the education system?
- In your opinion, what are the pros and cons of this approach?
- If given a choice, would you be willing to enroll for a virtual education based program? Give reasons for your answer.

In phase II of the study, the common themes identified in phase I were structured in the form of a statement on a 5-point Likert scale. Respondents were asked to provide their responses ranging from

strongly disagree (1) to strongly agree (5). Demographic questions were added to the 15-item survey from the previous phase. The final survey was administered to 431 students across campus from the four colleges. The sample was not randomly selected. Instructors from the four colleges were selected by the authors on the basis of acquaintance. The authors requested to distribute the survey in class, and student participation was voluntary.

RESULTS AND DISCUSSION

Of the 431 respondents, 219 (50.8%) were male and 208 (48.3%) were female. Four respondents (.9%) did not provide a response for the gender question. Approximately 9.3% (N=40) of the respondents were graduate students and 89.5% (N=386) were undergraduate students. Five respondents (1.2%) did not answer the question about their graduate/undergraduate status. 40 students were part-time and 385 students were full-time. Six students did not provide a response to this question.

When asked if they would be willing to register for a VE degree program, 158 respondents (38.07%) replied in the positive. The total respondents for this question were 415. Sixteen people did not respond to this question. More than half (61.9%) of the respondents were not willing to enroll in a VE degree program. This result indicates that although students seem to be interested in VE, they are not willing to enroll in VE degree programs at this point. The fact that a higher percentage of undergraduate students (39.57%) responded in the positive, compared to graduate students (23.07%), is interesting. This implies that universities with a predominantly undergraduate student body in similar settings should consider the option of providing VE degree programs, in addition to the traditional programs.

Of the 415 respondents that replied to the question of willingness to register for a virtual education degree program, 214 were males and 201 were females. 44.39% (N=95) of the male respondents and 31.34% (N=63) of the female respondents said they would be willing to enroll in a VE degree program. This is indeed surprising, because in the year 2000, women constituted half of the Internet's population (Thomas, 2000). A possible explanation for this can be the fact that women in general used email to keep in touch with family (Thomas, 2000), or to get information on health, religion and parenting issues (Thomas, 2000b). Further, in a recent study (Proost, Elen & Lowyek, 1997) it was found that when compared to men, women have a negative perception of computer-based technology and indicate a preference for traditional methods of learning. This fact is also reflected in the results of a study conducted by the American Association of University Women Educational Foundation (Information Week, April 2000), where it was found that women constitute less than 20% of the IT workforce.

Flexibility of Virtual Education

Approximately 92% percent of the respondents agree that VE degree programs increase flexibility for students to take classes at anytime, approximately 93% percent of the respondents agree that VE degree programs increase flexibility for students to take classes from anywhere. This result is consistent with other studies (Daugherty & Funke, 1998), where it was found that the flexibility of VE is what makes it appealing for students. This result is interesting, since the majority of the respondents (89.5%, n=426) of this study are full-time undergraduate students. Most of the courses that are offered by

universities and institutions worldwide are predominantly designed for part-time graduate students, who view flexibility as a major issue.

Student-Teacher and Student-Student Interaction
Approximately two thirds (67.5%) of the respondents strongly disagreed/disagreed with the statement that VE increases interaction among students and more than half (58.9%) of the respondents strongly disagreed/disagreed with the statement that VE increases one-on-one student teacher interaction. In both of these cases, the percent of respondents that agreed with these statements is less than 15. This result indicates that student-teacher and student-student interaction are important criterion for respondents, and they perceive that VE does not provide these interactions. A possible explanation of this is the greater need for dependence in the case of
undergraduate students, a majority of the respondents of this study. These students normally look up to their instructors and peers for guidance and support. Undergraduate students need to be advised constantly and may not be able to deal with the independent nature of work that VE degree programs demand. Lack of interaction or limited interaction on an infrequent basis in a VE degree program, as perceived by respondents, possibly explains why 61.9% respondents were not willing to register for such programs.

Quality of Education
Surprisingly, only 31.3% of respondents strongly agree/agree with the statement that VE increases the quality of education by allowing students to learn at their own pace. Learning at their own pace is an important criteria for students that work full-time, as they need to allocate their time for getting an education in addition to performing their job and managing their family. On the other hand, undergraduate students join a university with the assumption that the pace for their education is set by others, such as faculty and counselors. Lack of such support disrupts their pace of learning and hence is a possible explanation why the respondents of this study feel this way.

Only 35.5% of the respondents perceive that VE increases the quality of education by providing access to more knowledge on the web. Availability of more knowledge by itself may not necessarily be appealing for students, as they need to make an effort to search for relevant knowledge. Undergraduate students prefer to be provided with direction in their education. If asked to read a chapter from a book before coming to class, they can easily perform such a task. However, searching for relevant materials that need to be structured and organized before class may seem like a daunting task, and therefore may not be preferred.

The Learning Process in the VE Classroom
When asked if VE will increase understanding of concepts and issues as there will be no need to take notes, only 17% of the respondents strongly agree/agree. More than half (52.4%) of the respondents strongly disagreed/disagreed with this statement. This is a surprising result, because availability of class notes on the Internet before the lecture reduces the amount of time spent taking notes, which allows students to focus on the lecture. It is evident from the respondents' perception that reduction in time needed to take notes does not necessarily mean that students will understand better. Other factors, such

as an instructor's ability to explain class materials clearly and effectively, may be more important for understanding concepts and issues.

It is interesting to note here that 57.1% of the respondents perceive that VE increases on-going learning by providing availability to resources on the web. The fact that class notes and other resources are available on the web after the lecture reinforces the comfort level of students and is a possible explanation for this result.

Effectiveness of the VE Approach

Approximately two-thirds (65.6%) of the respondents strongly agree/agree that VE will be more effective for motivated and self-disciplined students. The ability to chalk out a course of education on their own and be motivated to follow it is a prerequisite for VE programs, as similar studies (King, Harner & Brown, 2000) have shown. This result should be interpreted with caution and in our opinion, the fact that the majority of the respondents of this study were undergraduate students explains their perception. Generally speaking, undergraduate students need structure, direction, and guidance in their education, which may not be adequately provided in a virtual degree program.

What is interesting here is that only 14.4% of the students perceive that students will learn more effectively using the WWW. This result reinforces some of the earlier results, as students perceive that face-to-face interaction is an important part of their education and VE using the web does not provide that interaction. Another explanation for this response can be the fact that there is a tremendous amount of information available on the web. Information overload, caused by excessive data that needs to be scanned before a student can find relevant information, may reduce the effectiveness of the web as a learning tool.

CONCLUSION

This paper presents student perceptions regarding VE degree programs. The study is unique because it is proactive, unlike other studies where student perceptions are based on courses that have already been delivered electronically. In this study we also focused on virtual education degree programs rather than individual courses that are offered on-line. Using proactive student perceptions can help alleviate student concerns about VE degree programs and make them feel more comfortable in deciding if these programs are suited for them. The key findings of this study are as follows.

- There is an interest, although limited, in VE degree programs. Students perceive flexibility to take classes anytime and anywhere as a key reason to register for VE degree programs.
- There is strong evidence that students perceive interaction, student-to-student and student-to-instructor, to suffer as a result of VE.
- Students are concerned about the quality of VE degree programs.
- Students perceive that VE degree programs place a heavy demand on students to be self-motivated and disciplined, and are effective for such students. They believe that for other students, VE degree programs may not be as effective.

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