2009

Online Degree Programs And The Development Of The Virtual University

James E. Novitzki
Carey Business School, j_Novitzki@jhu.edu

Online degree programs and the development of the virtual university

James E. Novitzki
Carey Business School
Johns Hopkins University
j_Novitzki@jhu.edu

Abstract:

Over the last 20 years properly developed, managed, and administered online distance learning courses and programs have slowly established their credibility and their ability to deliver learning at comparable levels to traditional face to face courses to both the academic and business communities. As the number of students seeking this form of education has risen, most universities and colleges have started offering these programs, and many start up for profit schools have been created that also offer these degrees. The number of students enrolling in these programs is growing more rapidly than the traditional programs, and several authors feel that given the environmental changes, technological changes, and expectation changes of incoming students, universities need to take a holistic approach and integrate these programs into all of the systems at the university. One method suggested to achieve this integration is the virtual university.
This paper looks at the state of online distance learning programs, where they have come from, and their current capabilities. It then reports on a study which indicates, that little has actually been accomplished in integrating these programs across the university, and that there seems to be a disconnect between administration views and those of the faculty.

Keywords: online degrees, distance education, virtual university, online teaching effectiveness

I. INTRODUCTION

For more than 20 years online degree programs have proliferated across the academic plain. Currently it is rare to find a university or college that does not have at least some online programs or courses, and there are more than a hundred schools that have been established that offer nothing but online degrees. There was initially great skepticism about the viability and credibility of such programs. Continued high growth in these programs has led some researchers to predict the need for colleges and universities to make major revisions to their basic operations to provide online programs as an integral part of their degree programs to accommodate students of the future.

This paper looks at the major issues that have led to the growth of these programs, their acceptance by the academic community, and the response of schools to these programs and movement toward a virtual university model.

II. BACKGROUND

The debate on the efficacy of distance education courses and programs in their various forms has been going on for more than 100 years [IHEP, 1999; Matthews, 1999]. There has been rapid growth and proliferation of online programs at colleges and universities around the world since the 1990's. New technology has not been the only reason for this growth although it is a major contributor. Web based asynchronous online learning has been an area of rapid growth as it truly liberates the student from being tied to a particular

place at a particular time while still allowing them to complete their education.

The University of Phoenix now has students numbering in excess of 160.000, and other for profit schools are also seeing large increases in enrollments. The number of schools which offer only online courses continues to increase every year. Traditional colleges and universities are also becoming increasingly involved in these programs. Phillips-Vicky [1998] reported that in 1997 180 accredited graduate schools and more than 150 undergraduate colleges and universities were supporting distance learning programs, and most schools were expected to have some form of distance learning programs available in the next few years. The Director of the Distance Education and Training Council felt that by 2001, most universities would be involved in online teaching and distance learning [Olsen, 1999]. Western Governors University and University of Maryland University College online program offerings are two examples of how traditional schools have become more involved in offering online courses and degrees. Even highly ranked schools such as Johns Hopkins University now offer fully online distance education degree programs.

III. Online Degree Issues

There are several issues which have concerned academics about these programs, and it is important to understand the status of these issues in order to determine what response, if any, colleges and universities should make in dealing with them.

Early online courses were more similar to correspondence courses than a class room experience. Typically they had readings, some notes by the professor, and ended with some sort of test or paper. Advances in the technology and software have made loading materials easier, but it has been noted by several researchers, there is still much work to be done to make course material appropriate for an online environment. Garrison and Shale [1987] outlined three criteria which have become the basis for most new online distance education programs. First, the communication between the student and instructor must take place asynchronously. Since most material used in a traditional class assumes synchronous communication, there must be significant change and/or additions to make sure that the material meets the needs of the asynchronous student. Second, there must be two-way communication between the student and the instructor. Online courses are not correspondence courses there must be venues for communication between the student and the instructor and other students as well. Third, the technology mediates and provides new venues for communication. These must be seriously considered and used as the course material demands. Conn [2004] outlined a methodology for implementing pedagogical flow into online IS courses, which discussed the development of these elements into asynchronous online courses.

The capability of course delivery systems for online programs has gone through several iterations. Course limitations now stem more from the design of the course than a limitation imposed by the delivery program employed (Novitzki, 2000). In a traditional course, the instructor can respond to the students' needs and questions. In an online course, these needs must be identified in advance, and then suitable answers provided. The rationale for assignments, which would be part of class, must be clearly articulated especially for the adult learner. How the assignment fits into the expected learning objectives, and what the student should learn from the assignment, must be clearly stated, since there will be no other time to explain the logic and goals of the assignments. Since students will not be present, more detailed examples and supporting material must also be provided than for a regular class. This is consistent with research done by Abernathy [1998] and comments that Skinner made over 30 years ago. He stated that textbooks, lecture outlines, film scripts, etc. are of little help in preparing course material

for asynchronous learning [Skinner, 1968, p. 48]. Forty years later Salami [2007] noted that the design of the course is the most critical element in the process, and the best traditional course simply copied on to power point slides and instructor notes will not create an effective online learning experience.

Academics have been concerned about these programs and have questioned the effectiveness, the amount of learning being accomplished, and the validity of degrees offered in these new formats. This has been especially true of online degrees being offered by new for profit institutions which vary greatly in quality and accreditation.

Research in this area initially produced results that were highly contradictory. Even as late as 1997 Middleton [1997] discussed literature that indicated online education was at best only 80% as effective as traditional classroom instruction. Simonson [1997] and Foley [1998] presented findings that the online courses they studied were just as effective as classroom education. The article, *Curriculum and Productivity Software for Education [1998]* reviewed several studies that showed a wide variation in outcomes when traditional and online courses were compared. Motamedi [2001]; Clark, [1999], and Frederickson [1999] all reported on studies that also could make no consistent claim about the effectiveness of online distance education courses.

Beginning in 2002 there was a distinct shift in the findings that were reported. Priluck [2004], Beattie et al, [2002], and Oblender [2002] all discussed findings which indicated that the online courses and programs that they reviewed can and do provide a comparable learning experience to the traditional classroom setting. Ury [2005] reported on a longitudinal study that analyzed course results in various online course settings. He reported that there was comparable student performance in traditional and online courses. Bryant et al (2005) also reports on consistent findings indicating comparable student performance when online and traditional programs are compared. McFarland and Hamilton [2006], in a study on student performance and satisfaction in online courses, also reported no significant difference in student performance between traditional and online courses. Dykman and Davis (2008) report that high quality can be achieved in these programs and that the methods to achieve this are known and eminently doable.

Another area that academics have consistently faulted online programs is the lack of student interaction, which is considered by many to be the hallmark of the college learning experience. Today's asynchronous online courses, while not attempting to exactly mirror the classroom, are much more robust in delivery media, requirements, and expectations for student interaction. When the first online programs were developed, there was little capability for two-way communication between the instructor and students or between students. Online courses can now allow students to freely interact with each other as well as the instructor. Most well designed courses take full advantage of this ability by requiring group projects and assignments, and a variety of requirements that provide a rich learning experience. Research findings at the University of Chicago, Northern Virginia Community College, and New York University's School of Continuing Studies, indicate that in their online programs 51% of the students reported increased communication with the instructor, and 40% of the students reported the quality of the interaction improved compared to traditional courses [Mayadas, 1997]. Hay et al [2004] reports an extensive study which looked at the interaction aspect of online distance education courses. The results indicated that in general online courses and programs scored higher in terms of overall performance than traditional ones. More importantly, the research showed that online students scored significantly higher than traditional students on all measures of student-student interaction. This is a distinct contrast to research from the early 1990's and before which often indicated that online students felt isolated and did not feel as if they were part of a class.

Simmons and Korrapati (2007) performed a study which looked at student expectations for quality in student support services in a graduate level distance based program. They discovered that the expectation for these services is quite high, and the failure of the university to provide adequate resources to this area can affect student perception and response to the entire academic program. Student prior experience with computers has been considered a major determining factor for acceptance by students of online technologies, has also been noted to raise their expectations of what support should be provided for online course and programs. In fact given the fidelity and ease of operation of many commercial software business and gaming environments, it is likely that students may become irritated by the lack of sophistication and ease of manipulation available in their academic online experiences.

There is also research showing, that at the human resource (HR) department in organizations, acceptance of online programs is no longer an issue. Several studies have shown HR personnel tend to have a positive view of online program graduates. Tuchtenhagen (2002) and Chaney (2002) reported on two different studies which indicated that HR representatives would all be willing to interview and hire applicants with online degrees. The studies also showed that while HR professionals might give a preference to a regionally accredited or professionally accredited program, they would not discount a program just because it was not accredited by one of these agencies. Schweitzer [2004] also indicates that online programs and online training are generally widely accepted in business.

Drago and Peltier (2005) reported on two studies comparing the education received by MBA students. In both cases online distance education students perceived the quality and effectiveness of their education to be similar to or higher than that obtained in traditional programs. A study by Borestorff and Lowe (2007) indicated that in students involved in current online programs 88% had a positive experience and would take more courses. This result is consistent with results obtained by Novitzki (2003) which found that almost 80% of the students had a positive experience and would take more on line courses.

IV. UNRESOLVED ISSUES

The literature since 2005 is starting to show with some consistency that well designed online programs can provide a comparable level of education to that of traditional programs. Student interactions are as good as or sometimes better than in traditional face to face programs, and that these degrees are accepted by the organizations who hire their graduates. There are, however, several issues that have not been fully addressed and are still concerns.

There continues to be a wide variation in learning achieved in some of these courses, which has been identified as being largely dependent on the quality of the course design and the effort which was taken to develop a sound online program. Research has shown that failures in course design have far greater impact in an online environment than in the traditional course.

Clauson [1999] discussed two potential side effects of online courses. Online courses can relate course material more closely to the work experience as assignments often require students to work on some problems related to the student's experience. The second is the ability to discuss issues with fellow workers. These can actually broaden discussions of class issues well beyond the class. These areas, however, have only recently been incorporated into online courses and programs on a regular basis.

Some researchers have postulated that differences in student learning skills often mitigate against online education, a recent study by Zapalska and Brozik (2007) looked at this issue and identified that auditory learners did not take the on line courses, because in general no effort had been made to develop technology to support this learning. Courses that do not follow or support the Americans with Disabilities Act fail to provide needed support for learners with other disabilities as well. These are also problems for traditional classes in which no accommodation is made or provided, but in these cases they can usually be solved through direct contact between the student and the instructor.

Kulchisky (2008) looked at the issues of high touch versus high tech and the need for more personal relationships with students. The findings indicate the students who are risk adverse prefer the traditional to the online. This could also be applied to the student who chooses the small liberal arts college as opposed to the state school where the "student gets lost in the shuffle".

V. CURRENT STUDY

Research since the early 2000's has shown the ability of online courses and programs to potentially offer comparable learning to that achieved in traditional programs. There is evidence that these programs are generally accepted by the business community. The technology has become the great leveler. Everyone now has potentially access to the same education regardless of their location and work schedule. Although the issues have not all been resolved, it is obvious that online education is not a fad that will be going away in the near future. The drivers and reasons for its adoption are too compelling for them to go away. Also as students get more accustomed to taking courses in this format, it is probable that their expectations of what else is or should be provided by the university will change as well. Several researchers have proposed the need for a paradyn shift in universities to rethink and model their curricula to more broadly include online education. Is it time for academics to consider the virtual model for the university?

In June of 2003 at the AACSB Distance Education Conference, the keynote speaker, Dr. Howard Frank, Dean of the Smith School of Business at the University of Maryland,

stated that the question is not if schools will offer online courses, but rather how these courses must be incorporated into their programs. Research was presented that indicated that in the future students, especially part time students, will be more and more unwilling to travel every week to sit in a class. Schools must develop an educationally sound and effective way to meet these expectations in their programs. Bremer and Lopez-Franco (2006) reported on ten years experience of graduate online education at ITESM and how it has changed and continues to change the face of the school.

Cunha and Putnik (2007) indicate that in spite of the student response to online programs as described above, most universities are not ready to fully embrace the incorporation of these models across the entire institution. Cunha and Putnik developed a model that suggests that the move to a virtual structure similar to that used by organizations in business is one of the only ways that universities will be able to survive in the coming years. They base much of their analysis on ideas developed previously by Davidow and Malone (1992), Byrne (1993), Farrell (1999), and de Wolf(2001) who describe the changes in the business market place that have forced businesses to consider every aspect of how they do business. This led businesses to move to virtual organizations to deal with the new and rapidly changing environment in which they are being forced to compete. Cunha and Putnik suggest that this same environment is starting to develop in the academic world and academic institutions need to consider and develop this type of structure as well, if they are going to effectively meet the challenges in the coming years.

Dytkman and Davis (2008) expand on these ideas and identify several specific issues that are driving the move toward virtual organizations. They note that since technology has been the key component that has revolutionized commerce and other areas of modern life, given the growth of online programs, it is poised to make significant changes in operation and management of educational institutions as well.

Another driving force for change is the continued increased experience and familiarity of students with the capabilities of computer technology to make transparent most business operations that formerly required their presence in dealing with companies, the government, and each other. Texting, twitter, blogs, face book etc, allow students to contact and pass information to whomever they want, whenever they want. Google and other search engines allow them to get information whenever they want it. New data bases provide students with tera-bytes of information. They use the Internet as a tool when they want, and how they want. New computer games with virtual reality and massively competitive themes require players to work with and team with other players to achieve game goals. Games such as the World of Warcraft, allow ad hoc groupings of players from around the world to meet and work as a team to accomplish tasks and then breakup to form other groups with other players frequently, and seamlessly. This familiarity of students working in synchronous and asynchronous environments will lead to expectations that their educational experience should not be less flexible (Taylor and Todd, 2005). This experience will make them critical of systems that do not match what they have experienced previously. Given the fidelity and ease of operation of these commercial software environments, it is likely that students may become irritated by the comparative difficulties that are encountered in completing registration, advising, course selection, and graduation in the academic online environment.

The question remains, given the issues noted, has the view of the faculty and administration changed significantly in their view of the promise and viability and effectiveness of online education? While there is a sense that academics should be moving in this direction, what are the realities?

A survey was taken of several schools to determine their level of support and

involvement in online programs and expectations for the future to incorporate these ideas in their educational portfolio. Interviews were conducted in person or via telephone from a random sample of schools in the mid Atlantic area. Sample size was 25. The focus was make an initial identification of key issues and concerns so that a more detailed instrument can be developed for use later in a larger study. Large, small, and for profit schools were considered.

Questions asked included:

a. information on the presence of online courses
b. degrees offered at the school
c. ability to take courses in multiple formats
d. who grants the degrees
e. online support available for the online degree programs
f. faculty use in these programs
g. level of incorporation of online programs and courses into traditional course and program offerings.

VI. RESULTS

Results of the survey questions are summarized below.

1. Almost all schools surveyed offered online programs.
2. Most of the online programs were stand alone entities clearly distinct and separate from the brick and mortar divisions of the university. This was especially true when looking at the large traditional research universities as opposed to smaller liberal arts colleges or start up for profit universities such as University of Phoenix.
3. Most had little or no interaction between online programs and traditional programs.
4. At most schools, it was not possible to shift back and forth between the two types of programs, or in many cases for faculty to shift between these programs.
5. Many schools have online distance education course options as part of their traditional education programs, but in general they were not an option to be completed solely through the use of online courses.
6. A few schools, even with on line programs, still required some sort of residency or in person meetings, even for their 'online degree programs'.
7. In many cases, there was a difference in what was printed on the diploma for those completing on line degree programs and those completing the traditional program. This came across in many ways, some more subtle than others. For example at one school students completing the online degree program received B. A. or M.A. in Cross Discipline Studies as opposed to a B.A. or M.A. in English, Math, etc. Other school's diplomas were from a slightly different entity than the traditional school's diploma. For example XXX Extension Programs, XXX School of Continuing Studies, XXX University College, or other such distinguishing features. One school even clearly stated on the diploma stated Distance Education B.A. degree in ___.
8. Full time faculty were generally not encouraged to participate heavily in online courses or programs. At several schools these courses could not be considered part of normal load.

VII. DISCUSSION

There was wide variation in answers with the strongest support and operations generally provided by the new for profit, institutions specializing in online course and degree delivery. From all this it is obvious that although much effort has been spent to convince

the academic community on the validity and quality of online courses, there still seems to be a distinct break in efforts to bring the learning options of online programs and traditional programs together.

Obviously there is interest in online programs as 23 schools offered complete degrees online, and the other two offered a variety of courses online. The variety of ways that degrees are identified seems to be an indication that at the administrative level of schools at least there is a feeling that online degrees are not equal to traditional degrees. The failure of many schools to allow students to freely move between online and traditional courses also seems to indicate that there is still some feeling that the course outcomes are not equal, and students in these programs are not comparable.

Research has shown that if the program is designed properly there should be no measurable or apparent difference between the outcomes of courses, degrees, or graduates. The failure of many schools to allow full time faculty to be fully involved in these programs could result in online courses not having the faculty expertise to design and teach academically sound online courses.

Overall the sample seems to indicate that there is little effort to create the virtual university that has been mentioned as a key for university survival in the future. As the number of students who expect or want at least the option of taking some online courses continues to grow, it is obvious that there is the potential for serious problems as the administration and administrative systems are either not ready to or are not capable of making course selection and degree options seamless across the school. The student of the future will demand nothing less and schools that fail to move to respond to this may find themselves with fewer students who are ready to jump through specific requirements just because everyone did previously.

Drago et al (2005) highlighted many of the key issues of concern to academicians and provided a basic understanding of the issues, this paper suggests other issues are important as well and tries to tie the whole question to the key issue improving the education of students. In many ways the new technology allows academics to get back to the Socratic method of teaching which for more than a thousand years was held as the ideal way for a student to learn. Now the expert can be anywhere; he can interact or relate to one or many students at a time. Students are free to experiment with ideas because they are not tied to a classroom. With the wealth of new sources available and technological methodologies to choose from they can do ad hoc testing of topics supposed solutions, and see what works and does not work. Since students are not tied to a single location, it is easy to test topics in a wide range of cultural and socio economic area. Through the Internet students can research or collaborate with other students around the world.

VIII. Conclusions

Online education will not go away. The number of degrees offered online has increased by almost 300% just since 2001 [Subramaniam, 2005]. In the coming years it is likely that a large number of job applicants will have online programs as their primary means of education. The American Association for the Advancement of Science [2005] indicates that non-traditional pathways such as online education are a major tool used by women and minorities in the workforce to obtain needed skills. Also Bryant et al (2005) in their review of the literature on online programs noted that one of the new drivers contributing to the growth of these programs is the need for non-traditional age students who need to retool to keep their current jobs or retrain for new jobs. Merriman [2006] reports on numerous studies which indicate the number of students in fully online higher education

programs grew nearly 34 percent in 2004, and that the pace of growth is far in excess of higher education enrollment overall.

Online distance education is, however, not a panacea it does not work well for everyone, just as sitting in a 500 student lecture hall does not work for many students. The university must keep options open, and not become locked into the idea that only the traditional or only online methods are acceptable. This type of education is still unfamiliar to many academics, and we cannot afford to wait until administrators are fully familiar with them. This is a potentially major problem for educators to face as Herther [1997] cited comments by Peter Drucker and others that indicate that the traditional university campus as we know it may not exist 30 years from now. The capabilities and expectations of students will drive more and more programs to becoming online just in time programs that are delivered when and where the students wants or needs it, not in a particular term at a particular place that a university or college may decide to offer it.

The results of this pilot study provide sufficient justification to proceed with a major study to look at this issue. The areas of concern will be reviewed and key issues identified. Their relationship to topics found in other research will be analyzed. One area that needs to be considered in any full survey is the expected audience that the school focuses on. A school that focuses entirely on traditional students in a residential environment might be less motivated to move toward the virtual model. However given the projected changes in student attitudes that have been postulated of “millennials” when they arrive on colleges, it may affect these schools as well.

It is certainly an area that demands more research and investigation. All of these issues need further investigation. No one wants our current schools to become irrelevant in the eyes of the student of the future.

REFERENCES

Abernathy, D. J. (1998). The WWW of distance learning: Who does what and where? Training and Development, 52(9), 29-32.

American Association for the Advancement of Science, 2005. Preparing Women and minorities for the IT workforce: The role of nontraditional educational pathways. At http://www.aaas.org/publications/books/reports/ITW/, accessed 30 January 2006.

Beattie, J., Spooner, F., and Jordan, L. (2002) *Evaluating instruction in distance education classes.* Teacher Education and Special Education, 25, 2. 124-132.

Borstorff, P. and Lowee, S., (Nov 2007). *Student perceptions and opinions toward E-learning in the college environment.* Academy of Educational Leadership Journal, 11 (2), p 13-29.

Bremer, M. and Lopez-Franco, R. (Nov 2006). Sustainable development:

ten years of experience at ITYESM's graduate level. Journal of Cleaner Production, 14 (11), p 952-957.

Bryant, B., Kahle, J., and Schafer, B. (Aug 2005). *Distance Education: a review of the contemporary literature.* Issues in Accounting Education , 20 (3), p 255-270.

Byrne, J. (February 8, 1993). The virtual corporation: the company of the future will be the ultimate in adaptability. *Business Week, pp 98-103.*

Chaney, E. (Aug 2002). Pharmaceutical employers' perceptions of employees or applicants with E-degrees or on-line course work. Dissertation Indiana State University, 100pp.

Clark, E. (September, 1 1999). Distance Education: Making the grade? *Network, 50* (9), 7.

Clauson, J. Jan 1999. On-line quality courses offer many side benefits. Quality Progress, 32, 1, p83-89.

Conn, S. (Aug 2004). Implementing a strategic, sequential, and iterative pedagogical flow to online IS distance education learning. Proceedings of the tenth Americas Conference on Information Systems, New York: p 2879-2887.

Cunha, M., and Putnik, G. (May 2007). *A changed economy with unchanged universities?* International Journal of Distance Education Technologies, 5 (4). P 5-24.

Davidow, W., and Malone, M. (1992). *The virtual corporation: Structuring and revitalizing the corporation in the 21st century.* New York: Harper Colins Publisher.

Drago, W., Peltier, J., Hay, A., and Hodgkinson, M. (July 2005). Dispelling the myths of online education: Learning via the information highway. *Management Research News,* 28 (7). P 1-17.

Dykman, C, and Davis, (Spring, 2008) Online Education Forum- Part One- the shift toward online education. Journal of Information Systems Education, 19 (1), p 11-16.

Dykman, C. and Davis, C.(Fall 2008). Online Education Forum- Part Three a quality online educational experience. Journal of Information Systems Education, 19 (3), p281-290.

Farrell, G. (Ed.). (1999). *The development of virtual education: a global perspective.* Vancouver: The commonwealth of Learning.

Foley, J. (May, 1998). Distance education for American universities and the world. *American Journal of Agricultural Economics, 80* (5), 973-979.

Frederickson, S. (August, 1999). Web-based instruction: A comparison of ten programs. *Paper presented at the 15th Annual Conference on distance Teaching and Learning.* Madison, Wisconsin.

Garrison, D. and Shale, D. (1987). Mapping the boundaries of distance education: Problems in defining the field. *American Journal of Distance Education, 1,34-13.*

Gibson, S., and Colaric, S. (July/August 2008). Technology Acceptance in an academic context; Faculty acceptance of online education. *Journal of Education for Business, *( ), p 355-359.*

Hay, A., Hodgkinson, M., Peltier, J., and Drago, W. (June-July 2004). *Interaction and virtual learning.* Strategic Change, 13, 194-204.

Herther, N. (Sep/Oct. 1997). Education over the web: Distance learning and the information professional. *Online, 21* (5), 63-66.

Institute for Higher Education Policy (IHEP). (1999). What's the difference? *A review of contemporary research on the effectiveness of distance learning in higher education.* Washington, D.C.

Kulchitsky, J. (Feb 2008). *High-tech versus high-touch education: perceptions of risk in distance learning*. International journal of Educational Management, 22 (2), p 151-167.

Matthews, D. (September, 1999). The origins of distance education and its use in the United States. *Technological Horizons in Education Journal, 27* (2), 54-61.

Mayadas, A. F. (1997, October). On-line networks build time savings into employee education. *HR Magazine*, 42 (10), 31-35.

McCray, G. 2000, the hybrid course: Merging on-line instruction and the traditional classroom. *Information Technology and Management*, 1 (4), 307-327.

McFarland, D. and Hamilton, D. (Winter 2005-2006) Factors affecting student performance and satisfaction: Online versus traditional

course delivery. *The Journal of Computer Information Systems,* 46 (2), 25-32.

Merriman, K. (Jan. 2006). Employers warm up to online education. *HR Magazine,* 51 (1), 79-82.

Middleton, A. (Fall, 1997). How effective is distance education? *International Journal of Instructional Media, 24* (2), 133-138.

Motamedi, V. (Winter, 2001). A critical look at the use of videoconferencing in United States distance education. *Education, 122* (2), 384-394.

Novitzki, J.E. (February 2000). Asynchronous learning tools, which is the best? *Distance Learning Strategies and Solutions* Ed by Anil Agarrwal, pgs 42-64.

Olsen, F. (1999, August 6). Virtual institutions challenge accreditors to devise new ways of measuring quality. The Chronicle of Higher Education, 45, A-29.

Phillips-Vicky, A. (1998). Virtual classrooms, real education. Nation's-Business, 86(5), 41-45.

Priluck, R. (August, 2004). Web-assisted courses for business education: An examination of two sections of principles of marketing. *Journal of Marketing Education, 26* (2), 161-173.

Salimi, A. (Jan 2007), The promise and the challenges for distance education in accounting. *Strategic Finance,* 88 (7), 19-23.

Schweizer, H. (Dec, 2004). E-learning in business. *Journal of Management Education,*28 (6), 674-692.

Simmons, K. and Korrapati, R. (November, 2007). *Distance learner expectations for quality, technology-enabled, student support services.* Proceedings of the Academy of Information and Management Sciences, 11 (1). Jacksonville. P 45-47.

Simonson, M. (Fall, 1997). Distance education: Does anyone really want to learn at a distance? *Contemporary Education, 68* (2), 104-107.

Skinner, B. F. (1968). The technology of teaching. New York: Appleton-Century-Crofts.

Subramaniam, M. (2005). The emergence of IT degree programs: When

did it happen? Proceedings of the Special Interest Group of the Association for Computing Machinery on Information technology Education—SIGITE 2005 at http://www.acm.org, accessed 10 November 2005.

Taylor, S. and Todd, P. (1995). Assessing IT usage: the role of prior experience. *MIS Quarterly,* 19, p 561-570..

Tuchtenhagen, A. (2002). *New providers in higher education: Higher education for the workforce in the new economy.* Dissertation Hamlin University, 190pp.

Ury G. (2005) A longitudinal study comparing undergraduate student performance in traditional courses to the performance in online course delivery. *Information Systems Education Journal.3*. 21, p3-9.

Zapalska, A, and Brozik, D. (Jan , 2007). Learning styles and online education. *Campus Wide Computing systems,* 24 (1), p 6-16.