Striving for Quality Control in Distance Education

by
Amy S. C. Leh and Andrianna Jobin

Abstract: *From 1995 to 1998, the use of Internet-based courses grew from 22% of institutions to 60%. It is estimated that by the year 2006 enrollment in distance education learning programs will increase by 1.5 million students. In light of this rapid growth, many educators wonder whether the learning in these new courses is of the same value as in traditional courses. The authors of this article share their thoughts on this topic by first talking about distance education and online instruction, including its benefits and drawbacks, and then discussing the quality of product, learning, and technology. Lastly, they illustrate how to control the quality of online instruction.*

Introduction

Technology is drastically transforming education, especially distance learning in higher education. "In just three years—from 1995 to 1998—the use of Internet-based courses grew from 22[%] of institutions to 60[%] . . . more than 1.6 million students were enrolled in distance education courses in 1997-98." (American Federation of Teachers, [AFT], 2001, Introduction section, para. 2) It is estimated that in 2002 about 85% of two- and four-year colleges would offer distance education programs and that by the year 2006 enrollment in distance education learning programs would increase by 1.5 million students (Lane, 2001). These numbers clearly reveal an educational paradigm shift.

During the past few years, terms such as online courses, completely online courses, Web-based courses, Web supplement courses, Web enhancement courses, and hybrid courses have frequently appeared in professional literature and discourse. The number of presentations concerning Web-based courses in conventions sponsored by professional associations has also been dramatically increasing. Questions such as "How many online (Web-based) courses does your program offer?" or "How often do I have to come to campus for my course work?" have been asked much more frequently than ever before, and answers to such questions have become factors for learners in selecting their institutions and for institutions in attracting their students.

Educators have varied opinions toward these changes. Some educators highly regard such courses because they think the courses offer opportunities to people who otherwise could not receive education. Some view them as an alternative that provides learners with more options for learning. Some even expect virtual classrooms to be the future of education. Meanwhile, other professionals doubt the value of such education and strongly question its quality. In the midst of these changes, we should ask ourselves, what is the mission of education and how can we serve a greater number of learners in a variety of ways without lowering the quality of education? As educators, have we taken advantage of current advanced technology or have we been driven by technology rather than our educational missions?

In this article, we first talk about distance education and online instruction, including its benefits and drawbacks. We then discuss quality of distance learning, within the rubrics of

quality of product, learning, and technology. Lastly, we illustrate how quality of distance education can be controlled. We hope that this article will stimulate educators to reconsider the effective practices within distance education.

Distance Education and Online Instruction

Distance education is not new. During the 70s, Moore (1972) defined it as "the family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors . . . so that communication between the learner and the teacher must be facilitated by print, electronic, mechanical or other devices" (p. 76). In general, distance education refers to instruction that takes place when a teacher and student(s) are separated by physical distance, and technology such as voice, video, data, and print is used to bridge the instructional gap. Although the concept of distance education remains the same, technology developed during the past few years makes distance education delivery appear very different. At present, online or Web-based instruction plays an important role in distance education.

Benefits

Why does online instruction attract many learners? Online instruction provides learners with appealing benefits. One such benefit is convenience. Students can study at a flexible time (time-shifted communication) and from different places (place-shifted communication). Sometimes, start and finish dates can be flexible. Other conveniences are the abilities to get more help outside of class hours, organize projects, search for specific information, and access the course outside of class. Distance learners also may be freer to learn actively, work at their own pace, and review materials more frequently. Sherry and Moorse (1995) note that there are numerous advantages for using telecommunications in education: It promotes collaboration and cooperative learning, improves communication skills, enhances multicultural education, increases motivation, saves trees, increases access to experts, eliminates phone tag, provides current information, reduces isolation, increases self-esteem, supplies faster communication, and aids in administrative tasks.

Drawbacks

Along with the benefits of online instruction, there are some drawbacks. Significant challenges for both students and faculty stem from reduced class interaction and lack of nonverbal clues. In addition to this, faculty face the predicament of distance assessment and the time and learning involved in adapting materials to the media. Due to these limitations, program administrators are confronted with additional training needs and a high drop out rate.

First, it is difficult to assess students at a distance. Distance education is better suited for some subjects than others because it is easier to assess the success of instruction in those subjects. Distance education is valuable for competency-based subjects such as languages and job skills for which the motivation to learn is intrinsic and improvement can be easily tested. However, it is difficult to assess the quality of learning at a distance in intellectual disciplines such as psychology. How can an instructor know whether students got the idea or are intellectually stimulated?

In addition, a persistent problem of distance education assessment is how to ensure that candidates are in fact the authors of their work. New concerns such as virtual impersonation exacerbate existing ones such as cheating and plagiarism. This does not concern some instructors who feel that students are ultimately responsible for their own learning. Nevertheless, this does not absolve the instructor of responsibility for ensuring the quality of credits and grades. Features such as logins, timers, question randomizers, and blocking multitasking are effective only in a supervised lab environment.

Second, the lack of nonverbal communication is a disadvantage to students who are not linguistically oriented, especially in courses relying heavily on discussion boards and assigned reading. Unfortunately, many distance education courses are text-based and do not fully use the potential of multimedia to enhance learning. Rosenberg (2001) notes that instructors often cannot or do not use simulation techniques, such as experiments, role-plays, and guided practice. Many of them still use formats such as the lecture model that are less effective at a distance (Gold, 2001, Quality, para. 1). Moreover, the lack of communicative social cues such as facial expressions and gestures may cause misunderstanding, frustration, or even communication breakdown.

Third, the most criticized drawback of distance education is its impersonality and limitations for learning. A recent survey by vault.com found "37[%] of HR [Human Resources] officials reluctant to accept online graduate degrees." (Elearning, 2001, para. 16) Many prestigious universities are reluctant to offer distance degrees out of fear that they will devalue their traditional degrees. Professionals think that distance education is too limited to facilitate learning and note, "You can do business skills training online but you cannot really engage learners" (Cambridge e-MBA, 2001, para. 3).

Some programs have taken an all-or-nothing approach to going online. Gradually, educators are looking for middle ground. For instance, for nearly 800 years Cambridge has maintained a rule requiring all students to reside in the town of Cambridge, England (Cambridge e-MBA, 2001). Last year the university ended this 800-year-old tradition to begin the university's first Internet-enabled program, a global MBA. Although the rule was revoked, Cambridge still hesitates to offer a purely online program. They therefore require a residency of two to four weeks preceding each four-month learning module:

> The idea is to offer the same MBA, with the same admissions criteria and the same learning outcomes as on campus but to deliver some of it online. Sixty-five percent of the program will still take place face-to-face. . . . You can do business skills training online but you cannot really engage learners. You can't get the spirit going without residential periods. (Cambridge e-MBA, 2001, para. 1-3)

Cambridge is not alone; the American Federation of Teachers (2001) reported that one-third of courses include a requirement to come to the campus or meet with the instructor at least once.

Fourth, the time and training involved in adapting materials to the media are demanding. Distance delivery of multimedia content enables teachers to reinforce their messages in different ways and appeal to different learning styles. This great potential is contingent on the instructors' abilities to add multimedia or to access multimedia specialists. Although the performance of faculty is the overwhelming arbiter of distance education quality (Husmann & Miller, 2001, Discussion section, para. 3), little attention is paid to faculty training and satisfaction. Care and Scanlan (2001) introduce findings that under-prepared instructors bear the burden of providing quality in distance courses:

> All faculty participants agreed that designing distance courses was time consuming and impacted upon their ability to fulfill other scholarly responsibilities . . . . Most faculty reported that designing courses for distance delivery was carried out in addition to their regular teaching assignments. A related issue which affected faculty receptiveness to take on course conversion to distance delivery was the belief that this activity was not fully recognized or seen as a priority for promotion and tenure purposes. (Findings section, para. 2)

In a multidisciplinary survey (AFT, 2001), faculty members concurred that they spend more time preparing courses, communicating with students, and grading assignments. "Faculty members teaching Web based courses, for example, must prepare, in advance, highly structured written materials and graphics covering every detail of the course. Some estimates range anywhere from 66[%] to 500[%] longer" (The Standards section, item 2). How can we expect faculty members to deliver such courses of quality if they are not well trained and rewarded for their efforts and innovations?

These drawbacks inherent in current distance education courses contribute to a high dropout rate -- estimated at 32% by the Institute for Higher Education Policy (IHEP, 1999). Comparing this to the 4% dropout rate for traditional courses, the IHEP dismissed the optimism about distance education as based blindly on a lack of large-scale or scientific research. Given the statistics, they concluded distance education is currently unsuitable for many students.

Nonetheless, the alarming dropout rate does not negate the many advantages of distance education and the opportunities it creates for many students who would not otherwise have access to or be able to attend a traditional class. Nor does the dropout rate reflect student performance. In a survey of 200 teachers practicing distance education in higher education, "respondents rated the performance of distance education students about the same (54[%]) or better (27[%]) than their classroom-based students. At the same time, a substantial proportion (over 42[%]) reported higher dropout rates in their distance education courses." (AFT, 2001, The Standards section, item 4)

The IHEP report admitted that reasons for the dropout rate were not evident, despite the high numbers. In exploring these reasons, distance education programs can improve their quality through restructuring and advances in telecommunications. Respondents to the AFT study were also asked to speculate on reasons, causes, or solution for the higher dropout rate. The responses recommended "self-paced courses" and flexible deadlines, a "mechanism to promote regular work and interaction", clear expectations and expected competencies published in a syllabus before the class, online community building, and reviews sheets for evaluating one's peers and oneself. Many also discussed the attributes of successful distance learners, including self-

motivation, the ability to work independently, technical competency, and readiness for academic coursework. (AFT, 2001, Appendix section, item 7B) It seems that institutions which attend to the problem can improve their dropout rate. For example, U.C.L.A. now "boasts an online-course-completion rate of 87[%]" for the 1,300 students who take online courses each semester, up from a 50% dropout rate at inception several years ago. (Carr, 2000, para. 16)

Quality Control

Distance education carries benefits and drawbacks, just as traditional instruction does. Nevertheless, professionals, especially educators in higher education, are much more concerned about quality of the former than the latter. Why?

The main reason is the inferiority of distant communication as compared to face-to-face communication. In a traditional classroom, instructors and students can afford to take a more individual approach to quality; instructors can see when students are struggling, exchange nonverbal feedback, and have more latitude for improvisation. As to assessment, instructors can always ensure that students perform tasks by themselves. Although in a traditional classroom a student might turn in a paper or project conducted by others, oral presentations, defenses, etc. can help to reveal student abilities instantly. In contrast, such communication is limited in the distance-learning environment.

The second reason that educators are more concerned about the quality of distance education is that distance learners have additional characteristics and needs. Compared with the students in traditional classrooms, distance education students tend to be older, have more professional experience, and often have families and careers to juggle. Many of them are not merely interested in obtaining a degree, but in gaining the competence and knowledge necessary to rise within their professions. Therefore, instructors need to monitor quality from not only an academic standpoint, but also a professional one. Because the learners have many responsibilities —careers, families, and studying—their academic performance sometimes might be influenced by those obligations. Instructors need to maintain high standards while being understanding about student challenges.

The third reason is that distance education has something to prove—its effectiveness. Higher education needs to prove that course credits obtained at a distance are as valuable as the ones obtained in traditional formats. Degree-granting institutions must be especially sensitive to the need for consistent quality because learners will not purchase an education that they do not perceive to be legitimate. A major factor in recruiting students is accreditation. Charlotte Thomas, editor for Peterson's, (as quoted in Kathawala & Abdou, 2001) said, "Accreditation is the number 1 verification of the quality of a higher-education distance education provider" (para. 3).

Quality control concerns institutions of higher education: quality of educational product, quality of learning, and quality of technology. The quality of the educational product is an objective matter that can be standardized and put into numbers, and the quality of learning is dependent upon learners' involvement. Both rest on the foundation of technology in distance education.

Quality of Product

Objective measures of quality are important in the accreditation process, which requires standards for credits and grades. Two main indicators are academic standards and faculty qualifications. As mentioned earlier, many distance education learners are reentry and working students. They tend to be less interested in theory than practical skills, but opt for degrees that carry good reputations. In choosing a program, they look for academic reputation; but, in their courses, they look for practicality. By catering to less academic motives, could institutions maintain their academic standards? Do or would some of them lower their standards? Additionally, would the qualifications of instructors in distance education change? In some fields, academically qualified faculty members avoid teaching via distance. Would more technologically proficient but less academically qualified instructors be hired to teach distance education? Would more professionally qualified instructors (practitioners) be hired instead of academically qualified ones? How would these issues influence the quality of education?

Quality of Learning

The quest to measure product quality leads to an overemphasis on instructional materials. Sound pedagogy may transform quality materials to quality learning. Do we have sound pedagogy for distance education? Berge and Collins (1995) note that new media enable but do not supply new models of education; the overriding question is not controlling the technology or the performance, but the "perennial problem . . . of instructional content and design" (p. 4).

There are three distinct aspects of instructional design: the formats available, the messengers, and the pedagogical approach. Formats are lectures, text documents, slide shows, graphics, and charts. The messenger, or the medium of delivery, can be a person, book, radio, TV, computer, personal digital assistant (PDA), etc. The media in distance education have rapidly advanced during the past years; however, our pedagogies do not seem to catch up with the technological innovations. Heretofore, distance education curricula have been driven more by the technology than by pedagogy; that is, educators have focused more on the educational materials and formats made possible by the technology than on student learning. Let us look at student self-direction in distance education models.

The earliest model, the correspondence model, used mailed documents and radio. This model was famously limited in interaction and student choice of direction. Given the huge time delay in two-way communication, it was not feasible to communicate sufficiently to have a give-and-take relationship between student and teacher. Yet, even after TV and audio/video conferencing made two-way communication possible, neither of the ensuing models involved many student choices. The multimedia approach primarily exploited the audio-visual features of multimedia for enriching course content. Although the student chose the time, place, and pace, uniform material was chosen by the teacher and administration. The most promising approach, telelearning, used the conferencing features to expand opportunities for communication, but it generally simulated a teacher-directed classroom rather than encouraging student independence and autonomy (Berge & Collins, 1995). Unilateral models hinder students from taking initiative in their learning. A pedagogy that involves the participation of students will improve the quality of learning and the quality of feedback to course designers.

Quality of Technology

Technology affects quality in four main areas: hardware, software, Internet access, and training. Some distance programs expect students to provide their own equipment, and course designers consider students' equipment, especially unsophisticated equipment, when they develop distance education courses. This consideration could consequently limit a course in taking advantage of telecommunications. Some programs fail to set realistic minimums for required technologies. This could make a frustrating experience for the learner accessing a course designed for better technology. Moreover, both students and faculty are not adequately prepared for effectively using distance technologies. It is frustrating to a learner to be figuring out the course management software and other software instead of learning the material at hand. The lack of technical support for home-based users only compounds that frustration.

How to Control Quality?

There are four main areas in which to control quality: prerequisites, instructional design, support systems, and program design.

Prerequisites

Before courses begin, students should be required to meet minimum technology requirements and complete training. This includes entry requirements for technical competency and training for distance-specific technologies. Entry requirements should include not only technical abilities, but also computer system requirements. Realistic minimums need to be set for hardware and Internet bandwidth. Equipment recommendations—such as specific models of sound cards, PC cameras, etc.—will facilitate troubleshooting and training. Choosing specific software programs will help instructors provide software-specific directions. Money not spent on standardizing computers or preparing users translates into time wasted. When the inadequate technology preparation affects student accomplishments and satisfaction, it will affect faculty and institutional reputations. Setting entry requirements also allows instructors to know what limits they have in using technologies. Prerequisites also help avoid "the tyranny of expertise syndrome" where "once one has mastered CMC, it is hard to remember how confusing it is for beginners" (Lewis, Whitaker, & Julian, 1995, p. 27).

The act of quality control via prerequisites may exacerbate the problem of the digital divide; technology requirements may exclude poorer students. In a 1999 report, the College Board (as cited in "Distance education", 1999, para. 5) wrote, "While education is the great equalizer, technology appears to be a new engine of inequality." "Those with limited computer experience will be handicapped in their ability to access knowledge and avail themselves of the ever increasing variety of learning experiences." Public institutions in particular should consider ways to provide technology and training for these students. If necessary, state laws regarding equal education opportunities should also account for access to technology.

Instructional Design

In evaluating students in online courses, instructors should distinguish the quality of instruction from the quantity of information (Rosenberg, 2001) and emphasize the former over the latter. One way to do this is to adopt a constructivist approach, which engages learners in the process of constructing knowledge rather than simply receiving it. This entails focusing more on the learning process than exact outcomes. Salmon (2000) suggests that instructors:

- Look at the process of learning rather than testing the content transmitted. . . .
- Accept diversity of outcomes rather than demanding uniform learning. . . .
- Consider whether knowledge is being created and disseminated rather than information merely communicated. (p.120)

Contexts in which students can apply learning include: virtual fieldtrips, interactive essays, supervised apprenticeships, and group projects. Using rubrics for evaluation and formative assessments can be beneficial.

Collaboration could lead to work of high quality because group members apply and feel pressure to contribute. Informing students that group members and apprentice supervisors will evaluate their performance may encourage students to seek feedback from their peers and supervisors along the way.

Accepting diverse rather than uniform outcomes requires rethinking assessment. Student contracts allow students to set their own goals in conjunction with instructor standards. They may also be valuable during accreditation. A constructivist approach may alleviate the problem of cheating by eliminating the need for fact-based assessments. Morgan and O'Reilly (2001) assembled case studies of a number of innovative alternatives for formative assessment. These include:

1. Online debates with peers
2. Volunteer internships with written reflection journal
3. Team projects providing real consultant services to a company
4. Weekly critiques followed by live discussions
5. Collaborative problem solving
6. Essays that include reflections on peer discussions
7. Researched debates via videoconferencing, and
8. Audio taped interviews.

In a case study by Tony Dunn of Charles Stuart University in Australia, he argues that the "audiotape medium has proven to be extremely reliable. It is virtually impossible to fake a tape. The realism of the task prevents any short cuts, and unprepared interviews show up clearly because they are too short or too confused" (C. Morgan, 1999, p.205). Incremental writing and writing based on experience are also controls against cheating and may demonstrate growth of knowledge. Students cannot have someone else write their papers unless that same person also participated in peer discussions. Another technique is to have students verbally record, not write, their assignments.

A constructivist approach allows learners to decide for themselves what they want to read to fulfill course requirements. An instructor may give students a range of high quality materials from which they choose to conduct discussions of interest to them via computer-mediated communication. For example, discussion boards can thread conversations according to topic and sender. Learners can select those messages that pertain to their own situations.

In addition to using a constructivist approach, fostering personal interaction is important for distance education. The American Federation of Teachers (2001) strongly urges distance education programs to include in-person communication because "the simultaneous visual and verbal interaction of individuals in the same place working together toward a common educational goal" and "the resources of the campus—from classrooms, laboratories and libraries to social and performance spaces" (Standard 5) are valuable for learners. Morgan and Thorpe (1993) further discuss benefits of residential components such as time to concentrate on a topic, engage in an in-depth approach to learning, and access experts and qualified tutors. Surely, not all distance courses can require a residential component. Nonetheless, it may be possible to incorporate fieldwork at approved sites or regional centers to which the students may commute periodically. Alternatives include a site visit, a class conference, or a weekend retreat.

Support Systems

Who is going to make all of these curricular innovations to support the quality of distance education and the quality of instruction? Instructors are on the front line. In a survey conducted by Husmann and Miller (2001), administrators rated most strongly the need to "provide additional support for faculty development of course materials" (Results section, para. 3). They note a need for reward systems that acknowledge and promote faculty participation in distance education. Offering special grants to faculty and assuring faculty recognition or compensation for innovative and creative efforts are crucial.

Similarly, the American Federation of Teachers (2001) points out that institutions must support faculty with training, higher compensation commensurate with work, and institutional rewards such as promotion. It also suggests that it is counterproductive to the development of the necessary skills to coerce faculty into teaching distance courses. Training and enticing existing faculty make more sense than hiring instructors based on their technical expertise. Furthermore, training existing faculty may actually improve student satisfaction. Gold (2001) studied a two-week training course for college teachers who were veterans in their fields but novices in online education. He found that "teachers exposed to the course significantly changed their attitudes toward online instruction[,] seeing it as more participatory, and interactive than face-to-face instruction" (Abstract, para. 4).

Although instructors of distance education are on the front line, they alone cannot make distance education successful. Collaboration and division of labor may improve quality by providing several areas of expertise. Media specialists and technology coordinators should be hired to train and assist instructors who are experts on the content.

> "[A] media specialist . . . can help with the technical aspects of embedding video, audio, and advanced graphics as well as the visual design of the course. After the course is developed and up and running, a person who manages the server and the related software is needed in addition to technical support personnel available to answer both student and

faculty questions. (Schweizer, 1999, p. 103)

Faculty in the survey conducted by Care and Scanlan (2001, Findings, para. 2) said that they would have liked to collaborate with more experienced distance education instructors to reduce the time and frustration of struggling alone through trial and error. Care and Scanlan suggest forming a team involving a content expert, a media specialist, an instructional designer, a faculty representative, an administrative director, and a student representative to collaborate on developing courses.

Program Design

As institutions improve the quality of their educational products, they should distinguish more between professional development (certificate) and academic programs (degree). Quality control of a professional certificate is different from that of an academic degree. If institutions wish to maintain a reputation for quality, they should reconsider the granting of degrees for essentially professional development or technical training. Building more transfer between technical and academic aspects might allow academic and professional requirements to be more clearly distinguished while minimizing the tension between them. One model is to allow professionals to enter the certificate program with the option of applying the work to a master's degree later. In this way, professional experience and technical training can be a scaffold for academic work. Lewis, Whitaker, and Julian (1995) suggest that we revise our concepts of academic standards for this new market by finding ways to account for prior learning and alternatives for faculty credentialing. The more instructors can reward knowledge and the sharing of it, the more learning will occur. One way to reward sharing knowledge is to grant credit for coursework demonstrating an area of expertise. Researching and writing about areas of professional interest can meet academic standards. Of course, program design must satisfy accreditation, but this is exactly the kind of planning that is essential in quality control and instrumental in improving the reputation of distance education.

Conclusion

Educators concerned with quality control in distance education face a variety of parties to simultaneously satisfy, collaborate with, and assess. Unraveling the complex issues detailed in this article requires the oldest of educational virtues—patience and perseverance. Distance education is such a new field that educators should prepare for some failures and learn from mistakes. Meanwhile, distance education has great potential to serve a larger number of learners in a variety of ways. As educators, we should carry out our mission and continue steering distance education toward or keeping it on the right direction until pedagogies and technology are shoulder to shoulder, and academic degrees carry their deserved value.

References

American Federation of Teachers: Higher Education Program and Policy Council. (2001, November). Distance education: Guidelines for good practice. *USDLA Journal, 15*(11). Retrieved April 7, 2002, from http://www.usdla.org/html/journal/ NOV01_Issue/. (Original work including Appendix published May 2000. Retrieved April 7, 2002, from http://www.aft.org/higher_ed/technology/.)

Berge, D., & Collins, M. (Eds.). (1995). Introduction: Computer-mediated communication and the online classroom in distance education. *Computer mediated communication and the online classroom: Vol. 3. distance learning*. (pp.1-12). New Jersey: Hampton Press.

Cambridge eMBA breaks 800 year-old tradition. (2001, February). *Virtual University Gazette*. Retrieved December 2, 2001, from http://www.geteducated.com/vug/ feb01/vug0201.htm

Care, D., & Scanlan, J. M. (2001). Planning and managing the development of courses for distance delivery: Results from a qualitative study. *Online Journal of Distance Learning Administration, 4*(2). State University of West Georgia, Distance Education Center. Retrieved December 2, 2001, from http://www.westga.edu/ ~distance/ojdla/summer42/care42.html.

Carr, S. (2000, February 11). As distance education comes of age, the challenge is keeping the students. *The Chronicle of Higher Education: Information Technology*. Retrieved March 28, 2002 from http://chronicle.com/free/v46/i23/23a00101.htm.

Distance education questioned in US. (1999, May 20). *Daily Bulletin of the University of Waterloo.* Retrieved April 7, 2002 from http://www.adm.uwaterloo.ca/bulletin/1999/may/20th.html.

Elearning – the other white meat? Industry wide promotion campaign takes shape. (2001, October). *Virtual University Gazette*. Retrieved December 2, 2001, from http://www.geteducated.com/vug/oct01/vug1001.htm

Gold, S. (2001). A constructivist approach to online training for online teachers. *Journal of Asynchronous Learning Networks, 5*(1). Retrieved December 27, 2001, from http://www.aln.org/alnweb/journal/Vol5_issue1/Gold/gold.htm

Husmann, D. E., & Miller, M. T. (2001). Improving distance education: Perceptions of program administrators. *Online Journal of Distance Learning Administration, 4*(3). Retrieved December 28, 2001, from http://www.westga.edu/~distance/ojdla/fall43/ husmann43.html.

Institute for Higher Education Policy. (1999). What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education. Retrieved April 7, 2002, from http://www.ihep.com/Pubs/PDF/ Difference.pdf.

Kathawala, Y., & Abdou, K. (2001). Strengths, weaknesses, opportunities, and threats for the on-line MBA programs: A literature review for its future. *USDLA Journal, 15*(9). Retrieved December 22, 2001, from http://www.usdla.org/ED_ magazine/illuminactive/SEP01_Issue/article03.html

Lane, K. (2001, September 17). Report examines shortfalls of distance education. *Community College Week, 14*. Retrieved December 2, 2001, from http://www.ccweek.com/index.html

Lewis, J., Whitaker, J., & Julian, J. (1995). Distance education for the 21st century: The future of national and international telecomputing networks in distance education. In Z. L. Berge & M. P. Collins (Eds.), *Computer mediated communication and the online classroom: Vol. 3. Distance learning* (pp. 13-30). New Jersey: Hampton Press.

Moore, M. (1972). Learner autonomy: The second dimension of independent learning. *Convergence, 5*(2), 76-88.

Morgan, A., & Thorpe, M. (1993). Residential schools in open and distance education: Quality time for quality learning. In T. Evans & D. Nation (Eds.), *Reforming open and distance education: Critical reflections from practice* (pp. 72-87). New York: St. Martin's Press.

Morgan, C., & O'Reilly M. (1999). *Assessing open and distance learners. Open and distance learning series.* London: Kogan Page.

Morgan, C., & O'Reilly M. (2001). Innovations in online assessment. In F. Lockwood & A. Gooley (Eds.), *Innovation in open and distance learning: Successful development of online and Web-based learning* (pp. 179-188). London: Kogan Page.

Rosenberg, M. J. (2001). *E-learning: Strategies for delivering knowledge in the digital age*. New York: McGraw-Hill.

Salmon, G. (2000). *E-Moderating: A guide to teaching and learning online. Open and distance learning series*. London: Kogan Page.

Schweizer, H. (1999). *Designing and teaching an on-line course: Spinning your Web classroom*. Needham Heights, MA: Allyn & Bacon.

Sherry, L., & Morse, R. (1995). An assessment of training needs in the use of distance education for instruction. *International Journal of Educational Telecommunications, 1*(1), 5-22.