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Factors Impeding Implementation of Web-Based Distance Learning

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Economic and technological changes are occurring at an accelerating rate in our information and communication-based society, making life-long learning for everyone a necessity. This is particularly the case in the transition period from industrial production to a knowledge and communication-based society. The confluence of technology, demographics, and work/family requirements make life-long learning imperative (Berge, 1998). Distance learning is an excellent method of reaching the adult learner. Because of the competing priorities of work, home, and school, adult learners desire a high degree of flexibility. The structure of distance learning gives adults the greatest possible control over the time, place, and pace of education; however, it is not without problems. Loss of student motivation due to the lack of face-to-face contact with teachers and peers, student frustration in learning and training, potentially prohibitive start up costs, and lack of faculty support are all barriers to successful distance learning (Galusha, 1997). This literature review examines some of the thoughts on distance learning and its barriers particularly types that are delivered by way of electronic means.

Before any discussion of distance learning, we need to look at the way the term has been defined in the past and how it is currently defined in the literature. The term can be used to describe any of a number of instructional situations (Valentine, 2002). While distance education has been in existence for at least 100 years, the medium has changed from pencil and paper correspondence courses to real-time (online) Internet courses. The distinctions between newer forms of distance education using internet technologies and traditional face-to-face education are being blurred in the facilitation of “individualized” and “collaborative” learning (McIssac & Gunawardena as cited in Boulton, 2002). But regardless of the medium, distance courses have common characteristics and, likewise, have similar problems (Galusha, 1997). One of the earlier forms of distance learning was done through correspondence courses started in Europe. This stayed the primary means of distance learning until the middle of this century when instructional radio and television became more popular (Imel, 1998). As technologies developed, various types of distance learning have evolved along with the technologies and so has the definition of distance learning (Baker, 2003). Videotaped lectures have been a standard in university and professional courses for the last two decades (Moore & Lockee as cited in Valentine, 2002), while audiotapes and lessons sent through the mail have been used in correspondence courses to teach subjects such as foreign language for quite some time (Teaster & Blieszner, 1999). Today, the Internet and compressed video have taken distance learning in new directions, allowing distance learning to occur in real time (Ostendorf as cited in Valentine, 2002).

“The appearance of the Web on the Internet has been the big event of the 1990s. With it came the possibility to generate, disseminate and exchange information, to communicate, to cooperate, and to access a vast range of services and multimedia contents without any constraints of time or place as bandwidth and transmission speeds increase” (Boulton, 2002; COM, 2000b, p.6). The Web gives educators the possibility to integrate proven as well as new methods of teaching. In web-based environments, the classroom needs not be further away than the nearest internet-connected PC (Wagner, Boegh, & Krebs, 1997). With these cutting-edge technologies, universities are now able to implement distance education to reach a diverse population and to provide open learning environments 24 hours a day 7 days a week (Hara & Kling, 1999).

But “if information technologies are to be successfully incorporated into education and training, then relevant and good quality services and contents

must be available” (COM, 2000a, p. 8). “While technology has provided meaningful tools for tracking, sorting, and disseminating information, it has created unprecedented complexity, as well as a concern for the value and integrity of that information” (Karr as cited in Baker, 2003). It is generally recognized that technology by itself is not sufficient to achieve enhanced and improved teaching and learning. Learning technologies are effective only when treated as one component in implementation strategies that also encompass (a) curricular reform, (b) sophisticated and multiple assessments, (c) effective professional development, (d) well-maintained technology infrastructures and support systems, (e) attention to equity, and (f) the restructuring of organizational practices, budgets, and policies (Yepes-Baraya, 2001).

Some analysts argued that the internet-supported distance education courses do more than bring new students into online classrooms (Hara & Kling, 1999), it is also viewed as a cost-effective tool to address present fiscal realities (Pardue, 2001). In addition they form “a critical pressure point for challenging the dominant assumptions and characteristics of existing traditionally organized universities in the 21st century” (Hanna, 1998, p. 1).

DEFINITIONS OF DISTANCE LEARNING

With the history of distance learning encompassing so many different learning environments, we need to find a definition that fits in all situations. There have been many definitions put forward in modern literature. A brief discussion of the underlying principles behind distance learning is necessary to understand the associated problems. In 1973 Moore introduced the theory of independent study. An important foundation of distance education, it suggests that successful teaching can take place even though teacher and learner are physically separated during the learning process (Galusha, 1997). Moore (as cited in Owoeye, 2003), defined distance education as the form of planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements. Greenberg (1998) defined contemporary distance learning as “a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner

interaction and certification of learning” (p. 36). Distance education offers opportunities for students who cannot travel to a campus for their classes. Teaster and Blieszner (1999) said “the term distance learning has been applied to many instructional methods: however, its primary distinction is that the teacher and the learner are separate in space and possibly time” (p. 741). Verduin and Clark (as cited in Clark, 2001) defined distance education, as “formal education in which a majority of instruction occurs while teacher and learner are separate” (p. 1). Keegan in 1995 said that distance education and training result from the technological separation of teacher and learner which frees the student from the necessity of travelling to “a fixed place, at a fixed time, to meet a fixed person, in order to be trained” (p. 7).

From these definitions we can see that some of the characteristic of distance learning can be fathomed. Keegan (as cited in Owoeye, 2003), analysed some of the best definitions on distance education and concluded that the defining elements of distance education are:

- the separation of teacher and learner that distinguishes it from face-to-face learning;
- the use of technical media usually print, and CD-ROM, Videotape through electronic multimedia delivery mode to unite teacher and learner and carry the educational content;
- the provision of two-way communication so that the student(s) may benefit from or even initiate dialogue;
- the influence of an educational organization which distinguishes it from private study;
- the possibility of occasional meetings for both didactic and socialization purposes; and
- the participation in an industrialized form of education which, if accepted, contains the genius of radical separation of distance education from other forms within the educational spectrum.

While this separation can occur in several ways depending on the nature of the course content and delivery medium, the choice of appropriate technology depends on learner needs and course requirement.

DEMOGRAPHICS OF DISTANCE LEARNING STUDENTS

Originally, distance learning was proposed as a means to bring the university to students, regardless of whether the students were in a farmhouse, an urban city, or suburbs. To reach those that could not access the traditional classroom initially was the goal of distance learning. But administrators could now see that demographic changes have resulted in the growth of nontraditional students who could benefit from distance learning. Students over 40 years of age are the fastest growing segment of the student population (Levy, 1998). Distance learning is student-centred learning; thus knowing the characteristics and demographics of the distance learners helps us understand the potential barriers to learning. Although students' characteristics and needs may not guarantee success in a distance education course or program, it is easy to defend these factors as contributing to success. Additionally, knowledge about student characteristics and motivators help us understand who is likely to participate in distance education and, conversely, why others choose not to participate (Galusha, 1997). It was observed by Barker and Wendel (as cited in Boulton, 2002) that students that find success in virtual schooling having characteristics such as self-motivation, supportive parents, a working knowledge of computers and the Internet, orientated towards completing work, as well as skills and knowledge that are aligned with grade level placement, tolerance for ambiguity, a need for autonomy, and an ability to be flexible (Threlkeld & Brzoska, 1994).

Changes in technology have accelerated the growth of distance learning. The improved access and availability of electronic technology has enabled more adult students to participate in the learning process. Students who enrol in distance learning courses do so for convenience. They are either time-bound due to work or travel schedules or location-bound due to geographic or family responsibilities (Galusha, 1997). "In such well-facilitated learning environments, through technology, students become excited about what they are learning and aware they are members of a global community" (Berge, 1998).

Student motivation has a powerful effect on attrition and completion rates, regardless of institutional setting. Motivators for adult distance students are often different from those of traditional students. Knowles (as cited by Galusha, 1997) stressed that peculiar personal characteristics and a combination of the learner's needs influenced the behaviour of the student.

Knowing these personal characteristics is an important aspect of planning distance learning courseware and strategies. More importantly, knowing the participants can help drive program planning and policy formation, factors that are important to participation and success in distance learning. Effectiveness of distance learning is based on preparation, the instructor's understanding of the needs of the students, and an understanding of the target population (Omoregie, 1997).

Not all students are suited to this type of learning and not all subjects are best taught by way of this medium. As it has been observed that the extraordinary challenge of a virtual learning environment is better handled by more mature and motivated learners (Hiltz as cited in Haghirian & Simon, 2002). Sanders and Morrison-Shetlar (2002) held that student attitudes toward the Internet and web-based courses can influence the future use of the web-based instructional materials and how educationally beneficial web-based resources are for students. Instructor attitudes toward web-based instruction also affect student's experiences with web-based courses.

PROMISES OF WEB-BASED DISTANCE EDUCATION

In transiting into the 21st century, educators of adults face the challenge of serving a student population and society that is increasingly diverse. Projecting into the future, the adult student population is expected to be the fastest growing segment of higher education and, in fact, older students will constitute the majority (Galusha, 1997). It has become obvious that the conventional school system cannot cope with the number of people who desire an education. But the rapid expansion of information technology, computer literacy, and access to the Internet offers immense opportunities for online delivery of distance education. The delivery has the potential of offering a vibrant learning environment created through teaching strategies, activities, and technologies (Boulton, 2002)

The Web allows faculty members not only to generate web-based learning material, group-work, and so forth, but provide the students with actual environments, with informal chats, "chance meeting" and both controlled and uncontrolled exchange of knowledge (Wagner et al., 1997).

Many of the promises of distance learning are financial in nature. Universities hope to save money by delivering education to students that are unable

to attend classes because of time or distance. The theory is that class size increases while the overhead remains the same (Valentine, 2002). Consequently, developing countries are now turning to distance education programs to take the place of ever increasing enrolments and a lack of physical building space. Countries such as China, Australia, Nigeria, South Africa, and South American countries such as Brazil and Argentina have all begun to use distance-learning techniques to reach those teeming population with quality education that would by any other means be unreachable (Bollag & Overland as cited in Valentine, 2002).

It should be obvious by these examples and by the definition of distance learning that it can meet the promise to deliver classes to a geographically broad and diverse population. Not only that, but the need appears to be strong for such programs (Valentine, 2002). More importantly many universities are feeling the pressure to control their costs, improve quality of instruction; focus on customer needs, and respond to the competitive pressures (Horgan, 1998, p. 1). In 1994, Basom and Sherritt (as cited in Valentine, 2002) surveyed higher education administrators and state politicians to find out what they thought would be the major problems facing American higher education in the next millennium. The answers they most often received were: “meeting increased demands at a time of decreased resources, increasing or maintaining access, using technology more efficiently, and sharing resources across state lines so that colleges won’t have to be all things to all people” (p. 4). It is also believed that distance Learning methods will help make higher education more cost-effective (Dibiase, 2000) and have the potential to assist in solving these problems.

The convenience of time and space is a big promise made by distance learning. Students do not have to physically be with the instructor in space and, depending on the method used, they do not have to be together in time as well. Not only does distance learning possess the ability to diminish the barriers of time and distance, but in doing so, it also creates a formerly untapped or under-utilized market of tuition-paying students. Satellite campuses opened as a result are drawing out a “hidden market” of adult students in towns and recent high school graduates who are finding it extremely difficult to get placement into the already saturated universities and other colleges in their quest to get higher education. It is this potential economic windfall that has made distance learning especially attractive (Pardue, 2001; Savoye as cited in Valentine, 2002).

In distance learning students and teachers will find themselves playing different roles than is the norm in traditional education. The teacher is no longer the sole source of knowledge but instead becomes a facilitator to support student learning, while the student actively participates in what and how knowledge is imparted. The web-based learning has the potential to create a wealth of online and distance learning to learners that is not readily available in textbooks and faculty lectures (Liaw & Huang, 2001). More than any other teaching method, distance learning requires a collaborative effort between student and teacher, unbounded by the traditional limits of time, space, and single-instructor effort.

Technology has also changed the face of education. Both computer and other communication devices, according to Klaphaak (1994) becomes a transparent bridge between students and teachers at different locations, without time and energy being wasted in travel by either student or teacher. Advances in computing and telecommunications technologies have opened up the possibility of personal and group interaction in distance education. In effect these “flexible access” technologies allow the student to turn the teacher on, or off, at will as lifestyle permits (Taylor as cited in Taylor, 1997). The distance learner can now have almost the same instructional contact and interaction as the student on campus. In fact, the proliferation of the information and communication technologies provide a rich expanse of both information and contacts that were previously unavailable. Albeit two dimensional, these media lend themselves to pure ideas and thought processes. This purity lends itself to isolation of both the cognitive and affective domains—an additional benefit of this communication medium.

Web-based learning can be designed to tremendously promote increased cultural awareness. Not only can students communicate directly with people all over the world, but also they can research interesting topics about various countries, cultures, and natives. The history, politics, philosophical and religious beliefs, way of living, customs, traditions, and so on can be communicated first hand by natives or researched in various databases. In this context, web-based distance learning can serve as a powerful tool to eliminate stereotypes and preconceived notions about “foreigners” and their native countries (Zellhofer, Collins, & Berge, 1998).

PROBLEMS OF WEB-BASED DISTANCE LEARNING

Despite the promises and obvious advantages of distance learning, there are problems that need to be resolved. These problems include the quality of instruction, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators. Each one of these has an effect on the overall quality of distance learning as a product. In many ways, each of these issues relates to the others (Valentine, 2002). These issues will be examined separately later.

Student Barriers to Distance Learning

The rate of success of a student in internet-based distance education courses is usually attributed to several factors. One must examine all of these elements to assess how each facilitates or impedes the knowledge to be gained (Leach & Walker, 2001).

Problems and barriers encountered by the student fall into several distinct categories. A systematic search of the ERIC database helped locate some research about problems of distance education, such as students' alienation and isolation, lack of effective advice, costs and motivators, feedback and teacher contact, student support and services, lack of experience, frustration in learning, and training (Galusha, 1997; Rahm & Reed, 1998; Hara & Kling, 1999).

More so than traditional students, distance learners are more likely to have insecurities about learning (Knapper, 1988). These insecurities are founded in personal and school related issues such as financial costs of study, disruption of family life, perceived irrelevance of their studies and lack of support from employers. These pressures often result in higher dropout rates than among traditional students (Sweet, 1986). It is important for the instructors to develop a sense of community between distance students, achieve maximum participation, and get students to buy into the process. Collaborative idea is very important when students are separated by distance (Valentine, 2002). According to research by Palloff and Pratt (as cited in Valentine, 2002), "collaborative learning processes assists students to achieve deeper levels of knowledge generation through the creation of shared goals, shared exploration, and a shared process of meaning making" (p. 6).

Yet an area of concern for the distance student is the perceived lack of feedback or contact with the teacher. A frequent criticism of distance learning is its disembodied nature restricts feedback leaving learners feeling abandoned (Baker, 2003). Because of this, students may have trouble in self-evaluation. Citing Keegan, Galusha (1997) believed that the separation of student and teacher imposed by distance removes a vital “link” of communication between these two parties. The link, he opined must be restored through overt institutional efforts so that the teaching-learning transaction may be “reintegrated.” Citing Tinto, Keegan (1995) hypothesized that students who did not receive adequate reintegration measures such as electronic or telephone communication, would be less likely to experience complete academic and social integration into institutional life. Consequently, such students would be more likely to drop out (Sheets, 1992).

Instructor attitudes toward web-based instruction also affect student’s experiences with web-based courses (Rivera, McAlister, & Rice, 2002); therefore specific provisions must be provided to insure students receive sufficient feedback. Instructors must be trained to promptly respond to e-mails. Virtual office hours can be held using chatrooms (Baker, 2003). Because both are essentially asynchronous, they continue to leave the student in charge of setting his or her own work times—a critical success factor for the distance student. The frustrations resulting from problems with communication between student and academic institution are factors of which distance education planners should be well aware (Wood, as cited in Galusha, 1997).

Another area of concern for distance students is the lack of support and services such as providing tutors, academic planners and schedulers, and technical assistance. Middleton (as cited in Rivera et al., 2002) that factors such as accessibility to materials, other students, instructors, control of time, and cost, can influence individuals’ perceptions of distance education.

The isolation that results from the distance learning process can complicate the learning process for adult students. Support for distance learners should not be overlooked when planning distance programs. Students need tutors and academic planners to help them complete courses on time and to act as a support system when stress becomes a problem (Galusha, 1997). It is believed that success in attracting, serving, and retaining students will hinge more on excellent student support services than on any technology issues. (Oaks as cited in Galusha).

Carnevale (as cited in Rivera et al., 2002) found that distance education students look for many of the same things found in traditional courses including a knowledgeable professor, interaction with the professor, and additional features that create a feeling of community within the class. In a web-based distance education situation, students do not see each other or their instructors. For many traditional students, this is an important part of their social lives. The “distance” aspect of distance learning takes away much of the social interactions that would be present in traditional learning environments (Galusha, 1997; Hara & Kling, 1999). In a web-based distance education situation, students do not see each other or their instructors. This absence of physical cues led to some frustration among students. Quoting from several sources, Hara and Kling (1999) posited that sustained frustrations impede students’ learning. Frustration interferes with pursuing goals and thus it is one of the factors influence learning.

This problem must be mitigated by institutions by providing a sense of personal involvement between the student and the institution. One way to help solve this problem is through the use of tutors that communicate with students either electronically or by phone. Students believe that having a good tutor is vitally important in helping them get the most out of a course and achieve a credit (Meacham & Evans as cited in Galusha, 1997). Just as student satisfaction was considered important for the long-term success of web-based course offerings (Rivera et al., 2002)

Geographical isolation has been identified as one of the major problems for distance students (Meacham & Evans as cited in Galusha, 1997). In addition to the practical problems of contacting academic and administrative staff, obtaining study materials and borrowing library books, distance students suffer from the disadvantage of being unable to interact with other students and are often denied the perception that they belong to a scholarly community. This may lead to feelings of inadequacy and insecurity, and a lack of confidence in their own abilities (Wood as cited in Galusha, 1997).

If distance learning institutions are serious about providing equity of educational opportunity to all, then careful consideration must be given to the special needs of students undertaking distance education for the first time. Of particular importance is the design of study materials for distance students. Study materials must take into account the significant proportion of students who enrol with little or no experience of distance study. These students are at risk of dropping out unless they develop study survival skills as rapidly as possible (Wood as cited in Galusha, 1997).

Another problem is the lack of student training, particularly in reference to technical issues. The student's level of experience with technology correlates directly to whether or not it is a barrier in distance education. Many adult students are not well versed in the uses of technology such as computers and the Internet. Using electronic medium in distance learning can inadvertently exclude students who lack computer or writing skills. These skills are required if computer technology is used. Students will typically be offered volumes of electronic-based information. Using this information will be a problem for some nontechnical students. Therefore for success in distance learning, technical concerns must be made a nonissue. They must be taught how to manage, not only their study time, but the materials presented as well. More so that frustrating aspect of learning curve was the discovery of the limitation inherent in the use of a course delivery platform (Leach & Walker, 2001, Rivera et al., 2002, Galusha, 1997).

The provision of, and access to, library materials and services is also of particular importance to distance learners. Students are often left alone to locate and acquire materials, spend great amounts of time downloading electronic reserve materials, access supplementary resources, and decipher electronic indexes and databases. In some extremes, the electronic indexes and databases available to onsite students are restricted by licensing and are therefore off-limits to distance students, putting them at a serious disadvantage in their coursework (Compura, 2003).

Two aspects of learning are affected by frustrations: cognitive and affective (Jonassen & Grabowski, 1993). Research with college students shows that high levels of anxiety decrease the storage and processing capacity of working memory and impede making inferences. In addition, high frustration can demotivate students (Hara & Kling, 1999). Motivation is a strong factor that influences student learning (Covington, 1997; Stage, 1996). Especially, distance education requires that students be self-regulated (Abrahamson as cited in Hara & Kling, 1999). In this kind of learning environment where students are away from traditional classrooms, frustration can be a major obstacle for distance learning.

In the conclusion of their paper, Hara and Kling (1999) found out that students' frustration originated from three sources:

- technological problems;
- minimal and not timely feedback from the instructor; and
- ambiguous instructions on the web site as well as through e-mail.

Considerable frustration and time wasting arose from poor course design, technical glitches, “dead” hypertext links, poorly coordinated real time seminars, and ambiguous instructions (Greenhalgh, 2001). The instructor must ascertain the level of technological expertise of each learner and then select tools or programs, which fit the users, abilities (Leach & Walker, 2001).

Faculty Barriers in Distance Learning

Faculty experience problems such as resistance to distance learning, facing legal questions for educators, students, and copyright owners, lack of staff training in course development and technology, lack of support for distance learning in general, misuse of technology, and inadequate faculty selection for distance learning courses.

Neal (as cited in Pardue, 2001) noted that one reason for resistance to distance learning was that no one asked faculty members how this technology might serve their instructional methods or contribute to better learning by their students; teachers were simply told to get on the bandwagon. A distance education program, in order to meet the needs of student, must utilize faculty at every stage of the process and make sure they are properly trained (Compura, 2003).

Copyright issues also need to be resolved. The increasing popularity of the Internet, and the ease with which it can be used to disseminate an enormous amount of information, has presented frustrating legal questions for educators, students, and copyright owners. The advent of distance learning and the growing number of online college courses has brought to the fore the very question plaguing many teachers, which is when can the text of published or unpublished works be copied onto web sites for educational purposes without violating the copyright law? (Scheiner, n.d.) Faculty and university administrators must come to consensus on who actually owns distance learning course materials (Pardue, 2001).

Sometimes the coursework for traditional and distance students is the same. Often it is not. There can be a lot of up front effort in designing distance learning material. This can impose a burden on teachers who already have material for traditional classrooms. Additionally, decisions regarding distance learning are made in a context unfamiliar to many faculty and administrators. Resolving curriculum issues, a difficult challenge within itself, is compounded by the application of rapidly evolving technologies (Baker, 2003). Computers, video equipment, communications software, and the like, present challenges and frustrations. Faculty must know how to use these technologies if they are to teach distance courses. Training students and staff, particularly in troubleshooting problems, is imperative to success in technical distance learning (Galusha, 1997).

Teachers in the virtual environment are burdened by the additional time required for communication. Comparing face-to-face communication with typing messages sent through e-mail; much more time is required for virtual teachers to communicate with their students. Students can feel isolated very quickly without a response to e-mail (Boulton, 2002).

Perhaps the biggest problem for distance programs is the lack of support by the faculty. The endorsement by department faculty is viewed as a critical instructional element in any distance education program. More than any other participant, faculty roles must change the most in administering distance learning programs. They must change teaching styles to that of a mentor, tutor, and facilitator. Since the majority of distance learners are adults, teachers may need to change their teaching style (Galusha, 1997).

Teachers may lack the basic skills or hardware to fully participate in distance education. The Barker and Wendel study (as cited in Boulton, 2002) suggested that teachers need a continual upgrade in technical skills. The advent of computers, telecommunications, and the World Wide Web provides an unprecedented opportunity for faculty and students to learn in a cooperative environment. It is interesting to note, however, that students respond to this changing environment more adeptly than teachers do (Galusha, 1997). One of the acknowledged difficulties, however, is the need to provide appropriate professional development opportunities for teachers to become familiar with new technologies and learning principles due essentially to the reliance and continual changes inherent in technologies (Taylor, 1997; Barker & Wendel as cited in Boulton, 2002). Obtaining proper equipment and training is critical in teacher acceptance of distance

learning because advancement in technology does not lead to effective distance education. The best distance education practices depend on creative, well-informed instructors (Greenberg, 1998).

Another problem perceived by faculty is the threat to tenure and human resource staffing. Instructors are not always convinced that administration is behind distance learning. The rewards are not always there for the good distance learning instructors. Courses taught as part of a distance program may not always count toward tenure considerations and promotion, and often does not recognize excellent off campus teaching, which takes valuable time from research agenda; hence resulting in a disincentive for participation by some nontenured faculty (Oaks as cited in Galusha, 1997; Valentine, 2002). New technologies may have important educational advantages, but without support and training for staff and students they could prove an expensive disaster (Greenhalgh, 2001).

Teachers also have problems respecting the academics of distance courses. One way of enhancing commitment is by forcing distance courses through the same approval process as oncampus courses. In 1994, Chou wrote, "By going through the same stringent approval process as on campus courses, the acceptance...among college faculty is enhanced" (p. 25).

Last we want to look at teacher's ability to accept distance learning as a form of education. Many programs seem to rely on a "who is willing to teach a distance education course" philosophy to staff distance education courses. This trend indicates that faculty may be reluctant to break away from the traditional classroom paradigm and may need additional support (technical, financial, and moral) to embrace the concept of distance learning (Compora, 2003). Teachers with enthusiasm for this nontraditional course-work are best suited to teach them. One way to mitigate these potentially serious problems is by selecting teachers who are relatively senior people, good teachers, like the idea of distance learning and want to participate in it. Interest and motivation are not success factors reserved only for the student. Faculty who want to teach distance courses are certainly more likely to be successful than faculty that are forced to teach these courses.

Organizational Institutional Barriers to Distance Learning

Student and teacher concerns represent the human aspects of distance programs. Organizational problems, and especially infrastructure and technology problems, also present challenges. Faculties who teach distance education courses need organizational and administrative support from the institution (Galusha, 1997). Students are prone to pick up on a lack of organization and direction and respond with apathy and absenteeism (West as cited in Valentine, 2002). Funding should be provided to create an administrative unit that is to be responsible for managing the program. Institutional leaders must be committed to distance programs. In her survey of higher education administrators, Sherritt (1996) found out that “for whatever reasons, higher education administrators and politicians understand the need for technology. But, lacking the heart for distance education, they cannot bring themselves to support it with adequate personnel, simple supplies, and a reasonable operating budget” (p. 4). Marrs (1995) agreed when he says, “Without this support, distance education is at risk of becoming a peripheral activity, without commitment from or significance to the institution.” (pg. 21) This sort of attitude can do nothing but trickle down into the instructors and students (Valentine, 2002).

Besides the cost of the technology, there is the possibility of not using all its potential. Some of these problems arise from a lack of training, some from the instructor’s attitudes about using the technology, and still others by hardware problems. It appears to be self evident that instructor need to be trained to use distance learning technology, but too often they are not. Thach (1995) pointed out that faculty and instructors are often thrown into distance learning settings with little or no professional development and instructional design information to assist them in adapting to the new teaching environment.

Technology considerations are self-evident but are the most easily solved. Technology problems include; financing new technology, telecommunications, hardware issues, course production and technology, and Internet problems. Background information on the kind of Information Technology used must be provided to instructors and learners since technology is one tool that is used to motivate, enhance, and stretch student thinking (Galusha, 1997, Hofmann as cited in Hagherian & Simon, 2002, Berge, 1998). Institutions must also plan to have competent computer staff to support Internet use and also targeting the appropriate audience for distance learning

will be necessary if it is to succeed (Pardue, 2001). These staff must then be kept up-to-date on the newest, fastest, cheapest technology available.

In addition to these considerations, the technology itself presents many problems. One issue is inadequate telecommunications facilities. Harry (1992) mentioned “the existing telecommunications systems are inefficient and/or expensive to use, so that educational institutions are unlikely to place too much reliance on them for teaching, support, or information searching” (p. 190). That is the reason why some developing countries still use print, cassettes, and radio delivery methods. Such circumstances prevent some instructors from producing or using advanced media and providing higher quality material for students.

Distance education through simultaneous two-way audio-visual interaction systems such as video teleconferencing, brings an additional set of issues to be considered by the instructor and effective models for this delivery system need to be identified (Sweet, 1986).

Some students, particularly those without home computers with modems could have difficulty communicating with the university or teacher. Lack of adequate hardware and the subsequent cost barrier of obtaining equipment could place undue hardship on some remote students. However, implementing other communications systems (phone mail, etc.) could help overcome this barrier.

One major concern for both learning institutions and students is availability of funds. When technology is used, the costs increase substantially for both the student and the institution (Oaks as cited in Galusha, 1997). Regardless of cost issues, distance education should be instituted to advance the cause of education for the institution, not as a sole effort to save money. Kinnaman (1995) cautioned that “It’s about a collaboration between teachers and technology that overcomes the restrictions of time and space, enabling students to learn more in less time, and with far less overhead.” (p. 58).

Palloff and Pratt (as cited in Valentine, 2002) reminded us that “technology does not teach students; effective teachers do” (p. 4). They make the point that the issue is not technology itself, but how it is used in the design and delivery of courses. Advancement in technology does not lead to effective distance education. The best distance education practices depend on creative, well-informed instructors (Greenberg, 1998). “Cultural acceptance

is an issue in organizations where student demographics may predispose them against using computers at all, let alone for web learning” (Kruse, 2002).

Learning institutions must develop distance learning course material or pay a hefty price to order materials from distributors. For some institutions, the investment in production technology may be worth the cost; however, a significant investment is necessary for production facilities, equipment, and personnel to produce videotapes. Using the Internet instead can overcome some of this problem but it poses additional difficulties in insuring all students have adequate access to the Internet.

The Internet is proving to be an effective delivery medium that enables communication of knowledge at the student’s convenience. It has the potential, in fact, to change the nature of distance learning. But it is not without problems. Some fear the existing world wide telecommunications network is ill equipped to handle the rapid expansion of the Internet. Relying solely on the Internet for courseware and communications transmission is risky. In addition, using the Internet can degrade the quality of interactions between and among staff and students. Due to the perceived anonymity provided by the Internet, abusive behaviour could become a problem; however, these problems can be mediated with proper care and regulation.

The newest of the technological challenges lies in complying with government regulations. Course content may need to be limited based on the requirements in the decency section of the 1996 Telecommunications Act (Oaks as cited in Galusha, 1997). This section describes material deemed suitable for the Internet. Some courses, such as anthropology or human sexuality, may not be appropriate for the Internet. Distance learning institutions must be aware of, and plan for, regulatory issues if the Internet is used for conveying course content.

Certainly not all distance courses use the Internet. Other technologies present ergonomical problems. For distance programs that implement video teleconferencing techniques, the physical environment and equipment set up is important. Because a classroom is often a noisy place, sensitive microphone equipment and non-sound absorbing rooms can seriously diminish the sound quality. Likewise, inadequate lighting and improper camera placement can diminish the video quality. Some experimentation may be needed to solve these ergonomic problems.

COURSE QUALITY CONCERN

The concern of many lies in the quality of instruction that is given through distance learning. Much of the quality of instruction depends on the attitude of the administration and the instructor (Valentine, 2002). Institutions must consider course standards, curriculum development and support, course content, and course pacing in developing distance learning programs (Galusha, 1997).

Many believe distance courses are inferior to traditional courses. Careful attention must be paid to the quality of the material presented in distance courses. Curriculum and assessment materials must be developed that equal that of the traditional classroom if distance courses are to receive the respect they deserve. There must be maintenance of the same course content, learning objectives, standards, and credits for all sections, regardless of method of delivery.

Assessing student performance is a problem area in distance learning. It is a commonly held belief that distance students perform more poorly in assessment than do internal students because of the additional pressures and burdens of distance study.

The course content affects student persistence. Some coursework is more conducive to distance classes. The course content itself cannot be ignored in any theoretical or practical consideration of distance education attrition (Bullen as cited in Galusha, 1997). Instructors may need to work with technology experts and instructional designers to increase the effectiveness of delivery by fully utilizing and integrating the available equipment and methods (May as cited in Haghirian & Simon, 2002). Poorly designed course materials are key contributors to student attrition rates. Too often instructors do not design their lessons to take advantage of the technology presented. This affects the quality of the instruction. The challenge for educators and instructional designers is to develop web-based distance education courses that are inclusive not exclusive (Galusha, 1997; Valentine, 2002; Boulton, 2002).

The last course consideration is the use of pacing techniques. Pacing material presented to students appears to have a positive effect on course completion rates. A 1986 completion rate study found that universities which used pacing techniques had completion rates that more than doubled

those institutions in which the courses were open-ended (Coldeway as cited in Galusha, 1997). Although the coursework and delivery methods were the same, those institutions that paced student work were more successful at retaining distance learning students.

SUMMARY AND CONCLUSIONS

Distance learning, while not a new concept in educational discourse, has not received respect in the academic community because of the number and seriousness of problems presented here. Nonetheless it will continue as a major educational resource for decades to come. The exponential growth of the mature learner population is making distance learning an increasingly popular choice of learning techniques, which also underscores the need for comprehensive and thoughtful evolution of distance education if it is to sustain being an educational model of the future. Targeting the appropriate audience for distance learning, studying student demographics and their motivators will help institutions develop course materials and techniques appropriately and will also assist in the continued refinement and development of the system. Close scrutiny of the intrinsic problems in distance education will help overcome problems encountered by students and faculty. For students, scheduled orientations, dedicated help lines, and technical support may help them achieve success in distance education courses and programs. While faculty involvement and training are required elements of any successful distance education program; understanding and mitigating technology problems are also important, especially with the rapid expansion of technology. Further research into course development techniques will help learning institutions understand which methods work best in the distance learning classroom. Distance learning has great potential for providing rich environments for students; however, as history has taught us, new technology is not a panacea. It has trade-offs.

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