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# Distance education : Is the classroom becoming obsolete?

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# Distance education : Is the classroom becoming obsolete?

## **Abstract**

The future of education seems to be moving rapidly towards distance education. Society is moving faster as people are trying to coordinate work, family, and school. Due to the increasing pressure of time and distance constraints, today's learners are sometimes choosing to get their educations online, or through a school with distance education technologies and capabilities. This literature review describes distance education, instructor and student attitudes towards distance education, benefits and disadvantages of distance education, the past and the future of distance education, and how and why it should be used in training and education.

**DISTANCE EDUCATION: IS THE CLASSROOM BECOMING OBSOLETE?**

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Of the Requirements for the Degree

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Randall M. Gilbert

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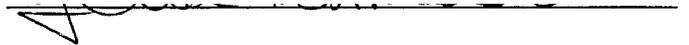
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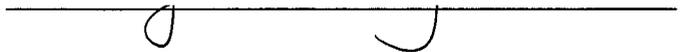


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## ABSTRACT

The future of education seems to be moving rapidly towards distance education. Society is moving faster as people are trying to coordinate work, family, and school. Due to the increasing pressure of time and distance constraints, today's learners are sometimes choosing to get their educations online, or through a school with distance education technologies and capabilities. This literature review describes distance education, instructor and student attitudes towards distance education, benefits and disadvantages of distance education, the past and the future of distance education, and how and why it should be used in training and education.

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## INTRODUCTION

This review of research literature will seek to answer the following questions: Are traditional classrooms becoming obsolete? What will the future of education hold with the rise of the Internet and the world's need for anytime-anywhere study options? What are instructor and students' attitudes towards this trend of distance learning? Will *virtual* classrooms take the place of the brick and mortar classrooms students currently attend? Many scholars, teachers, books, and educational journals have and are still debating the issue of the virtual university using distance education as an instructional delivery method. Why use distance-learning technologies over traditional instructional methods? Answers to these questions are important in order to understand where distance education came from or developed, where the field is today, and where it will go in the future.

While many studies identify and celebrate the benefits of technology in education, there are dissenting voices from many other elements. Either way, there are going to be radical changes to the methods in which students tackle the journey of studying towards a degree (O'Donoghue, Singh, & Dorward, 2001). The implications of the changes taking place in education and training today will need to be considered by professors, students, and society before coming to a final conclusion. The literature reviewed indicates that distance education in all of its developing forms is of the utmost importance to educational administrators, instructors, learners, and societies around the world today and in the future.

## METHODOLOGY

In researching the literature on the use of distance education, many valuable resources were located and reviewed. There is an overwhelming amount of research to be synthesized on distance education and the domain of virtual and online educational environments. Peer reviewed online journal articles and books were found in the databases Eric, InfoTrac, and Education Full Text at the University of Northern Iowa. University of Iowa libraries were utilized as well. Online searches using the University of Iowa library website offered many sources and ideas. Various databases were used with a search of databases by subject and the A-Z listing. Electronic journals also were beneficial. Literature was also discovered using the Goggle search engine. Descriptors used were; distance education, online learning, distance learning, benefits of distance education, and disadvantages of distance education. The descriptors invariably led me to further resources.

The quality of the resources came into question when considering distance education sites that promoted their sponsors or online universities. The reviewer chose not to use these sites as resources. The information contained in this paper has been confirmed by more than one research study or scholarly investigation. Checking the researchers referenced websites when available or going to the university or organization where the researcher was employed substantiated the credentials of the authors. Most articles and books used in this literature review were as recent as possible as the technology involved in distance education continues to change frequently. Some foundational information was ten years old or older for historical context as that information remains relevant.

## ANALYSIS AND DISCUSSION

In recent years distance education has become a major topic in education. Many educators are making grand claims and predictions that distance education will change education and training (Simonson, Smaldino, Albright, & Zvacek, 2008). Before making such a conclusion this reviewer will need to define and further explore the world of distance education.

It is not just the promise and wonder of technology that is driving people to distance education. The need to lower overall costs and increase efficiency and learning outcomes are important motivating factors. It is no longer a question of if schools, universities, and corporate organizations will implement distance education, but whether they will do it well (Rosenberg, 2001). To create valuable learning experiences using distance education, one must first know what it is and how to use it properly.

### What is Distance Education?

With the explosion of technology over the past several years, there have been advances in distance education. Distance education is not just an online diploma mill. It seems everyone is getting into the business of online course delivery. But distance education is not only courses delivered online over the Internet. No, it encompasses much more.

Distance education is planned learning that normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technologies, and special organizational and administrative arrangements. (Moore & Kearsley, 2005, p. 2)

The main things emphasized are that this definition includes learning *and* teaching, learning that is *planned*, learning that is *normally* in a different place from teaching, and communication is achieved through *various* technologies. Moore and Kearsley want to make clear that the term distance education is often used to include many off shoots or sub-sets of distance education. Moreover, distance education is an umbrella term, which includes terms such as e-learning, asynchronous learning, open education or open learning, online learning, and others. All of these terms fall within their definition of distance education.

The defining characteristics of effective distance education include the separation of the teacher and learner by space and/or time and communication between student and teacher is conducted through the use of print or other media (Perraton, 1988). Distance Education can also be defined in terms of four distinguishing features:

(a) Separation of student and teacher; (b) Provision of student support; (c) Use of instructional application of technology; and (d) Provision of two-way communication (Keegan, 1996; Rekkedal & Qvist-Eriksen, 2003). The teacher and learner are separated in time or space, but must communicate with each other via a two-way medium, such as a telephone. In addition, the practice of distance education must involve an educational institution. In other words, watching educational television, or surfing the web does not constitute distance education, unless such an educational institution would prescribe these activities in fulfillment of a requirement (Rekkedal & Qvist-Eriksen, 2003).

In 1980 Desmond Keegan published, in the first issue of the *Australian Journal of Distance Education*, a synthesis of the leading theories of distance education. The theories were those of Holmberg, Peters, Moore, and the July 1971 Law of France (which

regulated distance education in that country) (Moore, 2007). Keegan analyzed these theories and he concluded that distance education could be defined by six elements: (a) Separation of the teacher and the student. (b) Influence of an educational organization (c) Use of technical media (d) Two-way communication (e) Possibility of occasional seminars; and (f) Participation in the most industrial form of education (schools that combined industrial wage work with classroom study). Keegan's definition became the most widely cited definition of distance education at the time (p. 5). Furthermore, Keegan asserted distance education is complex enough to have an industrial base of operation. However, education has been a craft profession, with the teacher standing at the center of practice, while most industrial operations require a division of labor.

In distance education, although the teacher is still central to the practice, there are others involved as well. Depending on the complexity of the practice, a course team could consist of a faculty member, as well as instructional designers, subject matter specialists, writers, videographers, graphic artists, computer programmers, animators, musicians, song writers, actors, and a host of others including media technicians (Ribsamen, 2000).

Otto Peters, another pioneer in the field, took the concept of planning and organization to a higher level of importance in distance education and attributed an industrial characteristic to the field. Peters included the following attributes to highlight the economic characteristics of distance education: "division of labor as in course teams where several kinds of expertise are called for, mass production and distribution of educational materials and information, and sensitivity of the distance education enterprise to economies of scale" (Ribsamen, 2000, p. 2).

Waits and Lewis (2003) define distance education as “education or training courses delivered to remote (off-campus) sites via audio, video (live or prerecorded), or computer technologies, including both synchronous (i.e., simultaneous) and asynchronous (i.e., not simultaneous) instruction” (p.1). Distance learning or distance education can also be defined as any formal approach to instruction in which the majority of the instruction occurs while educator and learner are not in each other’s physical presence (Mehrotra, Hollister, & McGahey, 2001).

These definitions encompass a wide range of instructional arrangements. With so many definitions available, it is easy to be confused about what is and what is not distance education, especially with all of the new technology involved (Verduin & Clark, 1991). When people talk about distance education they are most likely thinking about learning and teaching that takes place on a computer via the Internet. There have been many online universities created and more seem to emerge every day. Distance education has prompted the growth of online courses as a method to reach a student population that was otherwise inaccessible. Moreover, 90% of distance education courses use the Internet as their primary mode of instructional delivery (Waits & Lewis, 2003).

To clarify, the major difference between distance education and online education is that traditional distance education stresses the autonomy of the learner and the privatization of learning, while online education involves active learning through socializing and group interaction. Many brick and mortar universities have developed courses for delivery over the Internet to remain competitive. These are defined as dual mode institutions. A dual mode institution is one that adds distance education to its previously established campus and class-based teaching (Moore & Kearsley, 2005). By

1998, over a third of the higher educational institutions in the United States offered electronically delivered distance education courses. At the beginning of this new millennium, the U.S. Department of Education commissioned a report to find out more about distance learning. One-third of all postsecondary schools offer distance learning courses. Eight percent of postsecondary schools offer college-level degree or certificate programs completely through distance learning. Fifty-five percent of 2-year and 4-year institutions offer college-level credit-granting distance learning courses at either the undergraduate or graduate level. The top 3 technologies used to deliver courses involved internet-based, two-way interactive video, and one-way prerecorded video. However, an additional report from Education Online revealed that only a small percentage of faculty at these institutions participates in distance education, usually around 5%. So it is worth researching distance learning programs to determine faculty involvement in the instruction (Education Online, 2008).

Distance learning has become increasingly popular over the years. In the 2000-2001 academic school year, 3,077,000 students enrolled in distance education courses. The National Center for Education Statistics expects this number to increase by around 19%, to 18.2 million, by 2013. The biggest factor affecting enrollment will be the increasing likelihood of traditional college-age students, 18-24-year-olds' participation in distance learning online programs (Education Online, 2008).

#### Past Distance Education

For one to understand the future one must examine events of the past. Distance education is nothing new and has been around for a long time. The roots of distance education are at least 160 years old (Simonson et al., 2008). Distance education has

evolved through several historical generations. The range has been from correspondence study to the Internet.

The first method of distance education was correspondence courses. Beginning in the early 1880s people who wanted to study at home or at work could obtain instruction from a distant teacher. Materials were delivered through the mail and teachers and students could communicate and interact with each other from long distances. In England, Isaac Pitman began to offer shorthand instruction via correspondence in 1840 (Willis, 1993). Anna Eliot Ticknor encouraged study at home with a Boston-based society of learners in 1873, attracting more than 10,000 students in 24 years. Academic degrees via correspondence study were authorized by the state of New York through the Chautauqua College of Liberal Arts from 1883 to 1891 (McIsaac & Gunawardena, 1996; Moore, 2003). The Yale professor who headed this program pronounced that the student who has prepared a certain number of lessons in the correspondence school knows the subject treated in those lessons better than the student who studied the same material in the classroom (Simonson et al., 2008).

H.S. Hermod, of Sweden, was a great contributor in correspondence study beginning in 1886 and would become one of the new industry's leaders. His full liberalism philosophies of programs emphasized the free pacing of study by the student. In 1891, Thomas J. Foster developed the International Correspondence Schools with enrollment from a quarter million to nearly 2 million within twenty years (Simonson et al., 2008).

During this period, Illinois Wesleyan and the University Extension Department of the University of Chicago were becoming leaders in correspondence study in America.

Illinois Wesleyan offered bachelors, masters, and doctoral degrees. The University of Chicago Extension had approximately 3,000 students enrolled in 350 courses. Both of these programs fell victim to financial problems as well as declining enthusiasm (McIsaac & Gunawardena, 1996; Moore, 2003; Simonson et al., 2008).

The first advocates for research into the field of distance education were Gayle B. Childs of Kansa State University and Charles A. Wedemeyer at the University of Wisconsin (Moore, 2007). Funded by a grant from the Ford Foundation, Childs initiated one of the first studies of educational television in 1949. Childs also participated in other milestone studies as distance education research began to develop momentum in the 1960s. Wedemeyer was director of correspondence at the University of Wisconsin-Madison. There he developed his Articulated Instructional Media Project (AIM). The AIM project sought to test the idea of joining or *articulating* various communication technologies. The technologies included printed study guides and correspondence tutoring, programs broadcast by radio and television, recorded audiotapes, telephone conferences, kits for home experiments, and local library resources (Moore, 2007). Moreover, AIM represented a turning point in distance education with the idea of combining multiple distance education delivery methods into one system.

Charles Wedemeyer noted the importance of correspondence study in 1961. He stated that the educational and training programs of the military services would, to a large extent, collapse if suddenly withdrawn. He also pointed out that business and industry would be seriously disrupted if skilled workers were not able to improve themselves through continued study. Modern demand for education and the variety of the forms cannot be met by conventional educational means themselves. Wedemeyer was a

visionary who said that social and technological changes occur so rapidly that some flexible form of instruction is necessary. He also pointed out that correspondence study (distance education) did not suffer from time or space limitations (Wedemeyer & Childs, 1961).

Educational television, film, and video came on to the scene in a dramatic way some years ago. The origins of video telecommunications can be traced back over 65 years. One of the first and maybe the most historic transmission was a one-way full-motion video call in 1927 from then Secretary of Commerce Herbert Hoover in Washington, DC, to AT & T executives in New York City (Dorros, 1969; Mainzer, 1984). These innovations were all expected to make a difference in the classroom just by their introduction. It was a dramatic change but the pedagogy involved with the technology remained unchanged.

Television was in development as early as 1934 (Moore & Kearsley, 2005). Various incarnations of educational content delivery via broadcast television continued to evolve. Instructional Television Fixed Service (ITFS) came on the scene in 1961. Cable television began operation in 1952. CATV provided educational programming referred to as telecourses. By the mid-1980s there were approximately 200 college level telecourses produced by universities, community colleges, private producers, and public and commercial broadcasting stations.

Classes broadcasting live over television networks offered a sense of presence. Part of the sense of presence was the ability to see gestures and features of instructors and other users (Lamb & Smith, 1999). Lamb and Smith continue to explain that unlike many other tools, live video or broadcast television allows users to see movement and view the

environment around the person presenting. Finally, of all the distance learning tools, live course delivery is most similar to a traditional classroom setting. These technologies can eliminate the need to travel; as a result these are a great use of time (Moore & Kearsley, 2005).

Audio and video media became widespread during the 1970s and 80s with the advent of VCRs and audiotape. Audiocassette players were highly portable and very affordable and allowed students to study wherever they so chose (Nasseh, 1997). Instructional television was introduced at a time when there were predicted teacher shortages and emphasis was focused on improving the curriculum. Reformers and administrators were said to view instructional television as a surrogate teacher (Cuban, 1986).

Open universities came about during a critical time of change in distance education in the 1960s and early 1970s according to Moore and Kearsley (2005). Two of the most important open universities were the University of Wisconsin's AIM (Articulated Instructional Media Project) and Great Britain's Open University.

In 1967 the British Government set up a committee to plan a new educational institution, through the study of Wedemeyers AIM project. The UK Open University has an enrollment of more than 200,000 adult students and around 20,000 graduates each year (Moore & Kearsley, 2005).

Teleconferencing is another form of distance education. Teleconferencing is an interactive communications session between two or more users who are geographically separated (pcmag.com, 2009).

Most all of these technologies or delivery systems have paled in comparison to that of computer and Web-based learning (Moore & Kearsley, 2005). Increasingly, learners are demanding anytime and anyplace education. For example, the University of Phoenix is one of the largest online education institutions. It has over 17,000 instructors, 128 campuses and Internet delivery worldwide. It is now possible that students may never appear in a traditional classroom. The days of viewing online education as a trend in U.S. higher education appear to be gone. With 65% of graduate programs in the U.S. offering online options, the indication is that online education is a critical long-term strategy (Allen & Seaman, 2003). Online education plays a formidable role in U.S. higher education today. Online educators have provided online learning experiences to over 2.35 million online students enrolled in 2004. That figure stands to be much higher today (Allen & Seaman, 2003).

Although there has been more than a decade of literature on computer-mediated communication in education, the research has been unclear as to whether it is an effective replacement for face-to-face (F2F) collaboration.

#### Distance and F2F Differences

There have been numerous studies, comparing many different variables involved in distance education throughout the years. Many studies focus on effectiveness as dependent on the technology. The sum of these types of research show that instruction at a distance can be as effective in bringing about learning as classroom instruction, and that the absence of face-to-face contact is not in itself detrimental to the learning process (Moore & Kearsley, 2005).

Russell (1999) examined hundreds of studies that compared the effectiveness of technology-delivered vs. face-to-face instruction. He also concluded that there was no significant difference and thus no compelling evidence to support the educational implementation of technology. Considerable controversy surrounds this conclusion. Most who are involved in the world of distance education are unsurprised by these research summaries (Simonson et al., 2006). This research concludes that it is very clear that instruction delivered to distant learners is effective and that students at a distance have received successful results.

Bernard, Abram, Lou, Borokhovski, Wade, and Wozney (2004) conducted a meta-analysis synthesizing the experimental studies published since 1985 that compared the effects of distance education and classroom instruction on student achievement, attitude, and retention. In total, the meta-analysis conducted by Bernard and his colleagues was based on 232 studies yielding 688 independent effect sizes, for a total of 57,019 students with achievement outcomes, 35,365 students with attitude outcomes, and 3,744,869 students with retention outcomes (Johnson, 2008). Johnson goes on to explain that the outcome demonstrated wide variability.

A substantial number of distance education applications provided better achievement results, are viewed more positively, and have higher retention rates than their classroom counterparts. On the other hand, a substantial number of distance education applications are far worse than classroom instruction in regard to all the measures. (p. 346)

Again this meta-analysis seems to substantiate the point that distance education and face-to-face instruction show no significant difference in overall effectiveness. These studies

show that the environment in which learning occurs, and the technology of communication between teacher and learner are not in themselves predictors of achievement (Moore & Kearsley, 2005).

Knowing that the effectiveness of distance education is equal to that of teaching and learning in a traditional classroom with conventional techniques (i.e. lecture-based teaching), the question then becomes which learning environment or which delivery technology or system is most effective? What has been discovered by so many researchers is that the similarities within a group are much more important than differences between groups. With that in mind, student characteristics, technology, teaching strategy, and learning environment become important factors to be considered (Conrad & Donaldson, 2004).

#### Benefits of Distance Education

It is important to examine the benefits of education at a distance. Technology has changed the face of education and offers many important benefits that should be discussed. Most students who enroll in distance education do so for convenience. Whether the learner is one of traditional background or non-traditional there are advantages to distance education (Palloff and Pratt, 2003). Moore and Kearsley (2005) cite a number of benefits:

Increased access to learning and training opportunities; providing opportunities for updating skills; improving the cost effectiveness of educational resources; supporting the quality of existing educational structures; enhancing the capacity of the educational system; balancing inequalities between age groups; expanding the capacity for education in new subject area; offering combination of education

with work and family life; adding an international dimension to the educational experience. (p. 38)

They point out that some of these areas may overlap and detail some of the reasons why distance education has become so popular.

The benefits of distance education include its high level of interaction using channels of communication such as text, audio, video, and graphics (Lamb & Smith, 1999). Online courses are becoming the most popular choice of distance education delivery systems (Rosenberg, 2001). Online programs are those where most, if not all, of the instruction is completed through online courses. The popularity of this format is due in large part to the flexibility it offers students (Moore & Kearsley, 2005). One of the most obvious benefits is that students and their teachers do not need to be in the same location. Students can communicate with their instructors and their peers via messages over the Internet. Moore and Kearsley add that another benefit is that students can access their classes from any location they choose. Students have the flexibility to learn anytime, anywhere, which is probably the most attractive aspect to distance education, or online learning.

Rosenberg (2001) identifies 11 major benefits of distance education or e-learning: (1) It has the potential to lower costs. (2) It can reach an unlimited number of people virtually simultaneously. (3) Content remains consistent or can be customized depending on the learning need. (4) Content is more timely as it can be updated quickly. (5) Teaching and learning is 24/7. (6) Little user ramp up time due to the wide spread use of technology, and the Internet. (7) Concerns of differences in computer platforms and protocols are rapidly fading. Everyone can receive virtually the same material in virtually

the same way. (8) Distance learning technologies allow people to build enduring communities where they can come together to share knowledge and insight long after a program ends. This can be a tremendous motivator for organized learning. (9) E-learning solutions are highly scalable. Courses and programs can move from 10 participants to 100 participants with little effort or increased cost. (10) Corporations can leverage their investment in their intranet. (11) Provides increasingly valuable customer or learner benefits from the site, program, or application.

Distance learning has several benefits which classroom learning lacks. One is that a learner can learn at his or her own pace. In classroom learning, the faster learners need to wait for the slower learners to catch up with the lesson before the teacher can move on to the next topic. They have to slow down their pace for the sake of the slower learners. With distance learning, the faster learner can go on to the next topic any time he or she wants. Furthermore, in classroom learning, a learner has only one chance of listening to a class lesson. However, with distance learning, the learner can replay a portion of the audio tape or video, take their time reviewing and responding on discussion boards, and read again the notes and responses for a particular module (Poole, 2000).

#### Challenges of Distance Education

There are many challenges to overcome in the delivery of distance education. Simonson et al. (1999) report some challenges to distance education. When their data were analyzed the strongest challenges to distance education have come to light. Their rank order is:

- Increased time commitment
- Lack of money to implement distance education programs

- Organizational resistance to change
- Lack of shared vision for distance education in the organization
- Lack of support staff to help course development
- Lack of strategic planning for distance education
- Slow pace of implementation
- Faculty compensation/incentives
- Difficulty keeping up with technological changes
- Lack of technology-enhanced classrooms, labs, or infrastructure

Berge and Muilenburg (2000) (as cited in Simonson et al., 2008) also identified the challenges of least importance. Their rank order is:

- Competition with on-campus courses
- Lack of personal technological expertise
- Lack of acceptable use policy
- Lack of transferability of credits
- Problems with vast distances and time zones
- Technology fee
- Tuition rate
- Local, state, or federal regulations
- Ethical issues
- Existing union contracts
- Lack of parental involvement

Without becoming aware of these challenges instructors may find it difficult to transition into the technology laden world of distance education.

There are also challenges facing instructors that have never before been recognized. Some instructors have become comfortable with the current delivery methods of the old-fashioned brick and mortar model of instruction based on a model where students are empty receptacles and the professor works to fill them with knowledge through the classic lecture styles. Educators are sometimes resistant to change and new technology can be confusing and cumbersome. Educators and learners alike have been exposed to wonderfully rich media experiences in the form of high tech movies, high definition television, and computer graphics. They expect the same from distance learning. Some of the technologies used for distance teaching and learning unfortunately do not enjoy the same history. It is just not as colorful and richly contextual as television or theater movies. Participants invariably compare it to what they know, and the aesthetic bar is raised in the expectations of users due to television and other technically superior mediums (Tapscott, 1998).

Another challenge is the location and distance of the learners. When distance education is used for classroom instruction some things about the nature of the instruction necessarily have to change. Students can be spread out in many different locations. These remote participants should not feel that they are left out of the class or receiving less than their physically present counterparts. Conversely, physically present students should not feel that the presence of remote students is detracting from their instruction. In some cases the remote participant could be an expert speaker or co-instructor. A cooperative balance needs to be maintained so that the learners have equal access, participation, and voice in the instruction. In other words, physical presence must not be allowed to overtake the presence and command of the remotes instructor, encouraging side

conversations and inattention to the remote instruction. Students are sometimes easily distracted at remote locations to the chagrin of more dedicated and interested learners (Papert, 1993).

The use of distance education requires special attention to the comfort level, teaching style, and instructional techniques of the instructor. Preparation for the use of distance education in the classroom requires some adapting and learning on the part of instructors in order to use the technology involved successfully. Practice time outside of actual class time must be available and utilized to effectively integrate the technology with one's own instructional style and methods (Tapscott, 1998).

Despite the positive research and popularity of distance education, there remain skeptics. Saloman and Almog (1998) have noted a paradox. The more a technology's use fits the prevailing educational philosophy and its pedagogical application, the more it is welcomed and embraced by instructors, but the less of an effect it has on the learner. When a technology is introduced into traditional pedagogies without challenging them, the chances of creating a substantial change in learning outcome is very small. For example, once a promising technology, television really has little impact in the classroom today. Much research on media in the classroom supports this conclusion (Salomom & Almog, 1998). Papert (1993) has observed that if the addition of a technology to instruction is so harmless that it can be easily assimilated into existing instructional practices without changing them, then it will be equally harmless in making an instructional difference. Moreover, what good are computers in the classroom if no one has a plan for their integration into instructional strategies? The challenge here is the

acceptance of the technologies used and the methods of delivery of distance education by these skeptics.

Clark (1983) reported that the media used to deliver instruction had no significant impact on learning. Clark stated that media are just vehicles that deliver instruction but do not influence student achievement any more than a truck that delivers goods causes a change in nutrition. Moreover, only the contents of the vehicle can influence achievement. The challenge here is to focus on high-quality instructional design that will integrate constructively with the delivery method and technology used. Some scholars feel that no matter what technology is employed, it is still the human experience that is the most important (Finkelstein, 2006). Students learn from teachers, their peers, and knowledge experts. No one learns from a computer. Although technology continues to mature, computers do not teach people; people teach people. Instructors must evolve along with technology.

Technology can be used in new and different ways to accomplish different types of learning. Technology throughout history has tended to develop quite independently of other fields, and without regard to any top-down planning. Education is no exception; it adopts existing technological innovations and adapts them to its prevailing conceptions, philosophies, and practices. However, with the increasingly rapid development of technologies outpacing pedagogical thinking, and these developments engulfing the lives of children and adults, psychological and pedagogical thinking cannot but attempt to evolve (Salomon & Almog, 1998). Well planned instructional design is the pre-cursor to any learning outcomes (Dick & Carrey, 1998).

## Designing Online Instruction

One of the most common ideas discussed and researched in the design of online instruction is that the instructor creates an atmosphere of interactivity and student centered learning. When designing online instruction, Moore and Kearsley (2005) point out that the most important role of the instructor is to ensure a high degree of interactivity and participation. Students should not be put in the position of being passive knowledge absorbers who rely on the instructor to feed information to them. In an online course, it is imperative that the learning environment be structured so that students become knowledge generators who assume responsibility for constructing and managing their own learning experience. Success in an online learning environment depends on the use of instructional strategies that support the shift in roles and the development of students' self-direction (Conrad & Donaldson, 2004). Distance education is most effective when the locus of control for learning is assumed by the student instead of the instructor (Jonassen, 1992). Many leaders in the field of online education agree that learner interaction is the key to an effective online course (Palloff & Pratt, 2003; Kearsley 2000; Albright, Simonson, Smaldino, & Zvacek, 2008).

What it really means for an instructor to be learner-centered in a distance education environment is complex. To be truly learner centered or learner focused, one needs to:

- Understand who the students are
- Understand how they learn
- Be aware of the issues that affect their lives and learning and how they bring these issues into to the classroom

- Understand what they need so they can be supported in their learning
- Understand how to assist them in their role in the learning process
- Understand how to develop courses and programs with an eye to continuous quality improvement so that students stay with the learning process and can move smoothly toward their goals, objectives, and dreams (Palloff & Pratt, 2003, p. 124)

Collaboration in the online environment is a key ingredient to a successful learning experience. Collaboration supports the creation of community and community supports the ability to collaborate (Palloff & Pratt, 2003). A sense of community needs to exist in order for collaboration to occur. This cycle of community and collaboration promotes interaction between student-to-student and student-to-instructor, which has become a hallmark of online learning (Conrad & Donaldson, 2004).

Preparation for the use of distance education, both in the classroom and out, requires some adapting and learning on the part of instructors in order to be successful. Practice time outside of actual class time must be available and utilized to effectively integrate the technology with instructors' own instructional style and methods. Twelve golden rules for the use of technology in creating distance education courses are pointed out by Bates (in Foley, 2003) They are:

1. Good teaching matters.
2. Each medium or method has its own aesthetic. Therefore professional design is important.
3. Education technologies are flexible.
4. Each technology has its own advantages and disadvantages.
5. Make all four media available (print, audio, television, and computers) to teachers and learners.
6. Balance variety with economy. Limit technologies in a given circumstance.

7. Interaction is essential. 8. The choice of technology will depend greatly on student numbers. 9. New technologies are not necessarily better than the old ones. 10. Teachers need training to effectively use technology for distance education. 11. Teamwork and collaboration is essential. 12. The design of distance education needs instructional designers, and media specialists on every team. (p. 833)

It must be remembered that technology is merely a tool; pedagogy and what learners are to learn should be the main focus. In a technology-rich classroom, students don't *learn* technology. Technology merely provides the tools to be used for authentic learning. It is a means, not an end.

It is now known that distance education cannot only be designed with the expectation that students will intuitively know how to use it effectively. Prerequisite computer skills must be evaluated along with online skills and experience. Moreover, instructors and trainers have learned that attention needs to be paid to orienting students to distance education. Palloff and Pratt, 2003 note several key characteristics that enable an instructor to be successful in the delivery of distance education:

- Flexibility
- A willingness to learn from one's students and others
- A willingness to give up control to the learners in both course design and the learning process
- A willingness to collaborate
- A willingness to move away from the traditional teaching strategies

These characteristics are what the authors consider to be advanced facilitation skills as well as keys to building community and becoming truly learner centered. These are important characteristics that must be considered when designing distance education.

Ivers, Lee, and Carter-Wells (2005) conducted a meta-analysis of students studying an online Master's of Science Instructional Design and Technology (MSIDT) program. The researchers examined several sources of information collected over an 18 month time period. Data included two reports filed by an external evaluator; responses to a discussion board prompt: "Being an Online Student;" midpoint reflections written by each of the students; and an end of the program survey. This case study analyzed how an online learning community developed among a cohort of 18 students in an instructional design and technology master's degree program taught at a distance. As a result, they recommend the following variables should be considered for the design of distance (online) education:

#### Prior experience with computers

1. Assess the minimum computer skills needed to be successful in the program.
2. Determine software products in which students will need to have basic, intermediate, or advanced skills.
3. Establish minimum computer requirements (e.g. speed of internet connection and computer processor, memory, etc.) and whether or not a specific platform and operating system are required.
4. Ensure students have the necessary computer skills and meet the requirements before accepting them into the program.

### Peer Interaction

1. Create opportunities to support social interactions among students (e.g., an online social forum where students can talk about topics outside of the program).
2. Establish a safe learning environment; review and enforce rules of netiquette and cooperation.
3. Assign group projects.
4. Establish group discussions.
5. Hold face-to-face meetings (e.g., orientation and midpoint, as well as optional end of the program event).

### Teacher/Student Interaction

1. Establish consistency in all courses across the program.
2. Balance workloads among concurrent courses.
3. Communicate clear goals and expectations.
4. Be aware and supportive of students' personal situations and needs.
5. Be committed to the students' success.
6. Maintain a constant presence on discussion boards.
7. Provide weekly summaries of discussions-citing students by names for their contributions.
8. Provide timely responses to emails.
9. Give supportive and positive feedback.
10. Ensure instructors have the necessary disposition and time to teach online.

11. Teach-do not put the responsibility of instruction on the textbook.

### Institutional Support

1. Ensure students have the necessary support and instruction to use required tools (software, hardware, etc.).
2. If possible, provide 24/7 technical support.
3. Provide a handbook of how to access and use support services and who to contact if students encounter difficulties.

The researchers feel confident that these guidelines and recommendations will help instructors create more effective and positive online learning environments for their students. Findings indicate the need to provide a stable and supportive learning environment in order for students to have a positive attitude toward online learning. Positive attitudes and perceptions promote retention and learning achievement (Ivers et al., 2005).

### Engaged Learning Environment

Empowering students to become active participants in defining their own learning goals and regulating their own learning is an important factor to be considered.

Engaged learning is a collaborative learning process in which the teacher and the student become partners in constructing knowledge. Conrad and Donaldson (2004) state key elements in creating an engaged learning environment include:

- Students establishing their own learning goals
- Students working together in groups
- Exploring appropriate resources to answer meaningful questions

- Tasks that are multidisciplinary and authentic, with connections to the real world
- Assessment that is ongoing and performance-based
- Products that are shared with an audience beyond the classroom so students are able to add value outside of the learning environment (p. 8)

Leaders in the field agree that learner interaction is the key to an effective online course (Conrad & Donaldson, 2004). While this may hold true, many adult learners grew up in traditional lecture based classroom environments. Interaction and collaboration using distance education may not come easily for them. In order to be successful, students and teachers must become partners in this new collaborative learning environment. This strategic approach includes setting goals, establishing timelines, and creating and assessing authentic products (Conrad & Donaldson, 2004). A truly learner centered approach to learning is based on a core belief that we cannot *teach* but can only *facilitate* the acquisition of knowledge (Palloff & Pratt, 2003).

### Perceived Attitudes

#### *Students*

One of the important issues in distance education is understanding how students react to learning in a class where members are separated by time and space.

With the growth of distance education in recent years, it is important to examine student attitudes concerning this system of educational delivery (Bisciglia & Monk-Turner, 2002). Early research into user attitudes of distance education using audio and video teleconferencing technologies did not show particularly strong user satisfaction when compared with face-to-face communication. The use of the many distance education

technologies aside, various human factors emerge to influence user attitude and reaction as well as factors such as the personality of the learner, their attitude, and skill with the particular technology.

When speaking of online instruction, students must possess a certain degree of maturity and discipline to regularly log onto a computer, listen to a lecture, participate in online group discussions and take required tests in a timely manner. Not every student functions well in this self-motivated environment. Many 18-year-old college freshmen, coming directly from traditional high school settings, may not be ready for the leap (Heubeck, 2008).

Many students using distance education solutions have unique concerns. The lives of online learners can be complicated as they have families, jobs, health issues, and unexpected interruptions. Palloff and Pratt (2003) point out that many students today are older, are working, and need more flexible schedules. For many distance education students their first few experiences in an online learning community can be overwhelming (Conrad & Donaldson, 2004). It is obvious that individual study requires a certain amount of maturity, self-discipline, and independence. Central to the learning and teaching in distance education are personal relations, study pleasure, and empathy between students (Moore, 2007).

Familiarity with computers and technology give learners an advantage. Studies have shown that a strong correlation of positive evaluative attributes about the experience and learning outcomes that are present with students who are more experienced and extensively oriented with computers and technology than those who are not (Allen, Bourhis, Burrell, & Mabry, 2002).

Researchers have identified several important variables that have an effect on students' attitudes and perceptions towards distance education. Ivers, Lee, and Carter-Wells (2005) state that these important variables include: prior experience with computers, peer interaction; teacher/student interaction, and institutional support. Peers are influential, also. Peers may either encourage or discourage each other from enrolling. In addition to peer and instructor support, institutional support is critical to students' attitudes and perceptions of online learning.

According to the findings of a study of online learning by Chandras, Chandras, & DeLambo (2007), students generally favor online courses and programs. Eighty-two graduate students were randomly selected from a pool of 325 students who completed online counseling courses. The main ingredients for success are computer skills, motivation of students, attitudes of instructors, available resources, and time to work on the computer. Online learning provides unique opportunities for students to work at their own pace, time and settings. For online faculty, concerns such as content, design, assessment, and technical support are important to consider. One of the issues facing the online faculty is keeping up with communication. They may have to set up virtual office hours that allow students to ask specific questions and then receive immediate feedback. Particular attention should be paid to online ethics and etiquette. Online instruction has the potential to reach students all over the world regardless of their race, religion, socioeconomic level, nationality, gender, ethnicity, or disability (Chandras et al., 2007).

Student satisfaction is also linked to instructional quality. Perceived instructional quality was the strongest individual predictor of overall satisfaction. It seems that students who felt the course utilized effective instructional methods were also more likely

to be satisfied with their online learning experience. These findings are consistent with results that have been reported elsewhere in the online learning literature (Moore & Kearsley, 2005; Simonson et al., 2008). For example, in a study of 222 adult learners, Reinhart and Schneider (2001) found that perceptions of the distance learning environment were significantly related to students' overall satisfaction (Artino, 2008).

In an important study involving 238 students (both distance learning and bricks and mortar) found that distance education students were not positive about the grading process. Off-site students were much more likely than on-site students to feel the grading process was not a fair one (Bisciglia & Monk-Turner, 2002).

### *Instructors*

College administrators, faculty and students agree that the most obvious benefit of online education is convenience. Additionally, online education connects students from all over the world, enriching the learning experience by presenting global perspectives in online discussion groups and chat rooms (Heubeck, 2008).

When distance education was in its infancy, the focus of the field was on orienting faculty or instructors in the use of technology. It is now known that distance education cannot only be created with the expectation that students will intuitively know how to use it effectively. Students familiarity with technology cannot be assumed (Palloff & Pratt, 2003).

Tapscott (1998) makes some very important points for teachers who are promoting student centered learning. A transformation in learning is taking place from what he calls broadcast learning to interactive learning. No longer are today's generations of learners satisfied in being the passive recipients of the traditional teaching process.

Students today want to discover for themselves by becoming interactive with the learning. The net generation's children are beginning to process information and learn much differently than the baby boomers before them. New media tools offer great promise for a new model of learning, one based on discovery and participation.

There is an evolving relationship happening between technology, teaching, and learning. In order to maximize learning, teachers strive to engage students in an environment that encourages active involvement, collaboration, and communication all taking place within a non-threatening setting. This is a challenge in the traditional classroom with the teacher at the center of class lecturing and the students as passive recipients of information. Students using distance education technology have the opportunity to become active participants and are placed at the center of their own learning where technology truly becomes the facilitator (Conrad & Donaldson, 2004). While technology may be important, the most crucial factor for carrying out all learning assignments was the teacher's guidance and feedback on students' work. (Leijen, Admiraal, Wildschut, & Robert-Jan, 2008).

Educational organizations' attitudes towards distance education can have a great effect on the respective instructors. There exists a gap between the use of communication technology and the use of the technology within educational institutions. "With the growth of the technology, knowledge of how to best apply it---in delivering instructional programs and in facilitating the purposeful learner-instructor and learner-learner interactions that differentiate communication in education from other uses of the same technology---lags far behind" (Moore, 2005, p. 58). He cites a number of plausible explanations why this is so. One is that educators and administrators are unable or

unwilling to make the necessary organizational and structural changes in their institutions to take best advantage of the technology. Simply giving high-powered machines to teachers may extend their influence and improve the quality of their teaching, but it can only do so marginally. Significant improvements require machines and humans to be reorganized into delivery systems that are more sophisticated than those existing before. Moore says that, "In other words, it is organizational technology that lags behind communications technology" (p. 59).

A second reason why educational applications lag behind technological development is the disconnect between current practice and previous research and theory. Allen and Seaman (2003) have found that even though 62% of academic leaders believe the learning outcomes of online or distance education are the same or superior to those in traditional face-to-face education, critics argue that because of intrinsic differences, online education cannot possibly replicate the learning that occurs in traditional face-to-face education. In essence, students who take online courses miss out on much of the important social interaction that takes place on campus. This can lead to alienation and isolation, which may cause learners to become less likely to complete their degree program.

The trend towards distance education seems to be appealing to many higher education professors. "Practically all faculty members will tell you they're better professors, that they've learned how to think about learning in a new way," says Jay A. Halfond, dean of Boston University's Metropolitan College and Extended Education (as cited in Heubeck, 2008, p. 4).

## The Future of Distance Education

Over the last ten years, the growth of technology, the Internet and online educational opportunities has been nothing short of phenomenal. Internet usage statistics show that usage growth from 2000-2008 has increased 305.5% with nearly 1.5 billion people worldwide having access now to the Internet (Education Center Online, 2008). Now, instead of thinking of computers within the confines of a classroom, it is possible to connect people and resources globally to the Internet (Herring & Smaldino, 2005). In 2004 slightly more than half of all colleges rated online learning as essential to their overall strategy. Ninety percent of 2-year public institutions and 89% of 4-year public institutions offered some form of distance education in the academic year 2000-2001. There were approximately 3.2 million students, or 1 in 6 that had completed at least one online course during the fall of 2005 (Jackson & Helms, 2008).

In 1961 distance education visionary Charles Wedemeyer stated:

I venture to make two statements: one an assertion based on large experience, the other a prediction based on strong conviction:

1. The student who has prepared a certain number of lessons in the correspondence school knows more of the subject treated in those lessons and knows it better, than the student who has covered the same ground in the classroom.
2. The day will come when the work done by correspondence will be greater in amount than that done in the classrooms of our academies and colleges; when the students who shall recite by correspondence will far outnumber those who make oral recitations (p. 74).

While the former may be true, the later is something yet to be achieved. But distance education has definitely grown by leaps and bounds.

While many may hail distance education and the future thereof, Saba (2008) points out what may be one of the biggest obstacles to the future of distance education. He states that while educational institutions may have adopted some distance education precepts, their organizational structure is not conducive to the development and growth of the field. He suggests there are different *cultures of education* within an educational institution:

1. The pre-modern culture of faculty. Faculty is responsible to design, deliver, and evaluate the course. They are in charge of managing the entire process. There is no division of labor required for what they do.
2. The modern world of administration. Administrators in schools and universities live in an environment defined by a bureaucracy. They work in organizational structures that are developed around division of labor.
3. Post-modern entities. Some groups of professionals work in post-modern structures where they benefit from the division of labor and technology. These professionals design and develop new solutions that would meet the needs of learners with flexibilities. Distance education professionals fit this category.

It is therefore up to the individual institution's distance education professionals to highlight the shortcomings of organizational structures in educational institutions to promote the facilitation of distance education (Saba, 2008).

## CONCLUSIONS AND RECOMENDATIONS

The sheer volume of literature on the virtual or non-classroom based learning and teaching through distance education indicates that the arrival of the new style of teaching and learning is inevitable. Distance education presents an entirely new classroom paradigm. One vision at the extreme end of the scale sees it possible that the campuses that are scattered around the world will disappear, as the need for them becomes obsolete. Students are now able to acquire degrees without ever attending a mass lecture or interacting face-to-face with an academic. This idea is too extreme for many groups and social interaction has always played an important role in the educational process.

Some of the most important findings of this review of literature are that distance education is just as effective as traditional educational methods in regard to learner outcomes. Students involved in distance education feel as though they are learning just as well as their traditionally educated counterparts. Moreover, the conclusion can be made that the use of distance education is a very effective way for both teaching and learning. Distance education, organized, structured, and delivered properly, has the potential to reach new target groups all over the world. It must be remembered that educators are sometimes resistant to change and that new technology can be confusing and cumbersome to some instructors. If instructors can overcome these barriers distance education can become an ever increasing factor in the educational landscape.

The growth of distance education is likely to accelerate as technology develops. However virtual future learning establishments are, technology must remain subservient to pedagogy. It is clear that technology, including distance education methodologies can alter pedagogy for the better.

What is this reviewer's recommendation? Learn about distance education, it is the next new wave of educational delivery. This reviewer concludes that technology can and does enhance the educational experience but it can never replace sound instructional design and practice.

Learn to use technology and develop in the area of distance education. The future of educational strategies is becoming more focused on being able to deliver course content by means of distance education. While this reviewer once believed that distance education could never replace, or become a substitute for brick and mortar traditional universities, that view has changed during this review of literature. Distance education has found its place in higher education, especially for the non-traditional adult learner. Distance education just may replace, or become an equivalent substitute for brick and mortar traditional universities as technology continues to improve and evolve, along with the wants and needs of today's educators and learners. Together, technology, sound instructional design, and a well-prepared instructor can accomplish still greater things in the years to come.

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