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Distance learning : Is it worth the investment?

S. Michelle DeGabriele
University of Northern Iowa

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Abstract

As human knowledge expands at an exponential rate, learning is increasingly becoming a lifelong endeavor. Careers and lives in the twenty-first century require constant learning, new education, and retraining. Thus, the nontraditional adult population in universities is increasing. Institutions pondering how to cope with an increasing student population and an ever shrinking budget can examine distance learning as a possible solution. Costs and benefits must be carefully considered in the areas of institution finances, the learning process, students, and instructors.

Although many instructors gladly accept opportunities to teach in the distance learning environment, the majority of instructors still have concerns regarding four main issues related to distance learning: Teacher Compensation, Course Ownership, Course Creation, and Academic Integrity.

Distance Learning

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S. Michelle DeGabriele

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Date Approved

Leigh E. Zeitz
Graduate Faculty Reader

August 31, 2001
Date Approved

Sharon E. Smaldino
Graduate Faculty Reader

Aug. 31, 2001
Date Approved

Rick Traw
Head, Department of Curriculum
and Instruction

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As human knowledge expands at an exponential rate, learning is increasingly becoming a lifelong endeavor. Careers and lives in the twenty-first century require constant learning, new education, and retraining. Thus, the non-traditional adult population in universities is increasing. Institutions pondering how to cope with an increasing student population and an ever shrinking budget can examine distance learning as a possible solution. Costs and benefits must be carefully considered in the areas of institution finances, the learning process, students, and instructors.

Although many instructors gladly accept opportunities to teach in the distance learning environment, the majority of instructors still have concerns regarding four main issues related to distance learning: Teacher Compensation, Course Ownership, Course Creation, and Academic Integrity.

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Introduction

Distance learning is not a new method of teaching and learning. Correspondence courses, completed by mailing in assignments, have been offered through many universities for a number of years. However, distance learning has recently become popular due to advances in technology, such as the Internet and World Wide Web. Distance education has also evolved in large part as a response to specific demands for improving information access equity, with particular attention paid to the improvement of instructional resource proximity via technology (Wagner, 1990). Ludlow and Duff (1998) define distance learning as any instructional activity in which the instructor and learner are separated by time and space. The United States Department of Education states that distance learning is used in all areas of education including Pre-K through grade twelve, higher education, home school education, continuing education, corporate training, military and government training, and telemedicine (Gilbert, 2001).

Computers are not the only form of technology used in the distance learning environment. Distance learning may involve the use of hardcopy documents, audiotapes, videotapes, disks, CD-ROMs, broadcasts, email, discussion forums, and more. Students in a distance learning environment are expected to proceed through selected learning experiences without the immediate

and contiguous support of an instructor (Dwyer, 1990). To aid in the learning process, instructors strive to develop an active learning community, which is a means by which students become empowered as learners and take charge of their own learning (Palloff and Pratt, 2001). In the learning community, students may interact with their peers, experts, and instructors. In the online classroom, it is the relationships and interactions among people through which knowledge is primarily generated (Palloff and Pratt, 2001).

Interaction among students and instructors may be either synchronous or asynchronous. Synchronous instruction requires the simultaneous participation of students and instructor with interaction taking place in real time. This could be accomplished through scheduled online chats, interactive television, etc. Asynchronous instruction does not require the simultaneous participation of all students and instructors. Instructors may post readings on a website that students read and then post responses at a time convenient to them. Students and instructors may communicate with one another regarding the assigned readings or discussions they have had with experts by posting their findings on a discussion forum or through email. One or both of these methods may be used in distance learning classes to promote interaction, thus enhancing the learning experience.

With the advantages that the Internet offers, the distance learning market is growing by leaps and bounds. According to International Data, the e-learning market, which includes Internet and Intranet courses will grow from $4 billion to $15 billion worldwide between 1998-2002, (Cooper, 2001). Many universities have increased the number of online courses offered due to this growing market. This increase in courses offered is due to both the advancement of technology and the increase in the number of non-traditional student population (Byun, Hallett, & Essex, 2000). The majority of students participating in distance learning are adults. Most of these students are working full or part-time and have families and other responsibilities. Meeting the needs of these students and making their experience meaningful is a big task for universities. To make this learning experience successful, there are many costs universities have to consider and then compare to the benefits, to see whether this high tech endeavor is worth the investment. These costs and benefits can be categorized into four areas: Financial, Learning, Students, and Teachers. There are also four other minor issues that may influence the decision of participation. These issues include teacher compensation, course ownership, course creation, and academic integrity.

Methodology

Deciding whether to invest time and money into the creation of a distance learning program for educational institutions can appear to be a tremendous challenge. Locating and reading Lessons from the Cyberspace Classroom, The Realities of Online Teaching (Palloff & Pratt 2001), written by two people who have taught distance learning courses themselves, provided an insightful portrayal of both positive and negative aspects of learning at a distance. There are two sides to this issue. Costs and benefits exist in the areas of the institution's finances, the learning process itself, students, and the instructors.

Searching the professional library at Area Educational Agency 7 uncovered books such as The Digital Classroom (Kleinman, 2000), which explains the many benefits distance learning has to offer students, teachers, and the learning process itself. A book search on distance learning in the University of Northern Iowa's library revealed books that explained the numerous issues surrounding distance education. Distance Learning Technologies: Issues, Trends and Opportunities (Morphew, 2000) and Web-Based Learning and Teaching Technologies: Opportunities and Challenges (Tetiwat & Igbaria, 2000) both provided a close

look at the many issues facing students and instructors in the distance learning environment. These two books also examined the effects distance learning has on the institution.

In the University of Northern Iowa's library, a search for distance learning uncovered many books that describe the benefits and challenges of learning and teaching online reside, such as How to be a Successful Online Student (Gilbert, 2001) and Teaching Online (Draves, 2000). These books provide strategies for making the online learning experience a successful one. Conducting an ERIC search for distance learning in the University of Northern Iowa's library revealed three thousand one hundred eighty up-to-date magazine and research articles, providing informative statistics on how successful distance learning has proved to be.

The Internet search engine Google provided a wealth of resources. After typing in the keywords "distance learning articles," a number of sites appeared that linked to articles about distance learning. Clicking on the link titled Resources for Distance Education revealed over seventy articles, including a number of guides describing distance education that are produced by the University of Idaho. Many of these articles provide a basic knowledge of distance learning and strategies that work and those that have proven to be unsuccessful in this learning

environment. Whether searching for costs and benefits to distance learning or strategies for successful implementation, the Internet presents a wide variety of resources regarding the issue of distance learning.

Analysis and Discussion

Costs

Financial. To begin and maintain a successful distance learning program is quite costly. Expenses come in the following categories: Technology, Transmission, Maintenance, Infrastructure, Production, Support, and Personnel (Trier, 2000). Not only does distance learning require a significant investment of money, but it also takes time. Not every course is suitable for distance learning, so the first step is to take the time to determine whether it would be an appropriate course for online instruction. For instance, a class in which students would need to participate in labs, conducting experiments with equipment and resources they would not have at home, is not an appropriate class for distance learning. Once it is decided that a course may be taught at a distance, it takes a large investment of time to develop and adapt the course effectively to be ready to teach it at a distance.

Related to course development is the issue of payment. One of the biggest challenges in developing an online course is the time commitment that instructors

make (Kang, 2001). The development of a distance learning course is both time consuming and complicated, so instructors feel they need to be compensated for their time and energy. After instructors have decided upon the technology to be integrated into their distance learning course, institutions need to ensure that the technology is present and is operational. However, with technology changing rapidly, it is difficult to keep equipment up-to-date (Gottschalk, 2000c). Therefore, investments of money for the annual budget need to focus on maintaining and updating equipment (Porter, 1997). Once the course is up and running, the instructors and students will need to be trained and then supported when technological problems arise. One of the top requirements for success in distance learning is the availability of quality faculty support, so institutions must invest money in hiring personnel to maintain and support instructors, students, and the technology (Byun, Hallett, & Essex, 2000). Start up costs, maintenance, training, marketing for the course, and updating equipment must be ongoing line items in the budget in order to keep a quality distance learning program operational and successful (Porter, 1997). Unfortunately, this part of the annual budget can be expected to increase in costs as the distance learning programs gain popularity and are expanded to meet learners' growing needs (Porter, 1997). It is the hope of the university that the school's income will increase and create a

profit since additional couses can be offered and courses can be accessed by a greater number of learners through distance learning (Porter, 1997).

Learning. Quality of instruction, drop out rates, difficulty evaluating instruction, and the differences in the delivery of instruction are all factors that affect learning in distance education. Many question whether students in online classes learn as much or receive the same quality of instruction as students in the traditional face-to-face classroom (Cooper, 2001). Not only is high dropout rate a problem affecting how well students learn, the amount of interaction students receive in a distance learning course is also a factor. Palloff and Pratt (2001), online teachers themselves, agree that the quality of an online course will suffer when the course delivery does not include an interactive component. However, it is very difficult to evaluate quantitatively how well students are learning in a distance learning environment. Many times the class sizes are too small to make a quantitative analysis of the results. In addition to the class size, the student population in distance learning courses ranges from a wide variety of backgrounds and these varying populations defy relevant statistical analysis (Gottschalk, 2000b).

One statistic that is associated with distance learning courses is the high dropout rate (Simpson, 2000). Students who feel a lack of support, contact with

others, and frustration rarely finish distance learning courses. Even when instructors include an interaction component in their distance learning course, they may encounter problems in facilitating student interactions (Flottemesch, 2000). If students are at a remote site, and technology problems arise, they will not be able to hear or see everything. Much valuable time, and money, if there is a transmission fee, can be wasted if there are any technical problems with the equipment. Instructors must also plan for time issues of web use (Lamb & Smith, 1999). Servers may be down when students want to work, which is frustrating for both students and instructors and interrupts the learning process.

In some cases, the technology is not the problem, instead it is the delivery of instruction. If the distance learning environment is used solely to present or deliver information to learners, and adds no real value to student learning, it does not justify the purchase and maintenance of expensive new online tool systems (Oliver, 2000). Not only must the technology be working, and the technology used effectively to deliver instruction, student retention will suffer in the distance learning environment without support throughout the course (Northrup, 2001). Emailing students to provide detailed and useful feedback is a valuable form of support, however it is a time intensive undertaking for instructors (Palloff & Pratt, 2001). The high drop out rates associated with online distance learning are

mainly due to lack of student training prior to taking the course (Simpson, 2000). Personal reasons for dropping out of online distance learning courses range from frustration with technology, insufficient time available to study, to being dissuaded by the nature of the course offered (Cookson, 1990). Spitzer (2001) also adds that the discouraging drop out rate can be attributed to the lack of a human mediator who can provide things technology cannot, such as personalization and flexibility. In order to maintain or increase student retention, universities will need to enhance and develop student support through receiving training prior to the course that explains the differences they will experience in the online learning environment (Simpson, 2000).

Students. Characteristics of learners also factor into whether or not distance learning will be a successful experience. Many sources stated that distance learning may not be for everyone (Draves, 2000; Harrison & Bergen, 2000). While providing valuable resources to instructors and learners, web based instruction puts an increasingly heavier burden on individual learners' motivation and capability to be responsible for their own learning processes and outcomes (Joo, Bong, Choi, 2000). To be successful in a distance learning environment, students have to be highly motivated self-learners because students will not have the contiguous support of an instructor (Aggarwal & Bento, 2000). Students

must also realize this takes some adjustments in learning style. The learning process in the distance learning environment is unstructured. Without self-motivation and a clear study plan, students may get discouraged due to information overload (Nguyen & Kira, 2000). Students have to set aside a specific time during the day to do the required reading, making sure the assignment is complete so they are prepared to dialogue with others. For some students, the flexibility of working at their own pace often results in course requirements put off to a day that never comes, eventually resulting in dropping the course (Byun, Hallett, & Essex, 2000). In order to help students be most successful in the distance learning environment, students will need training in how to learn in this environment, how to operate the equipment, and how to use the course software (Palloff & Pratt, 2001).

Distance learning is not quicker, cheaper, or even easier than traditional instruction. Students have to commit the time, just as they would in a traditional face-to-face class, and in some situations, the distance courses can even be more demanding (Gilbert, 2001). Assignments on the Internet may take much more time compared to a regular assignment in a traditional course. A thirty minute assignment on the Internet may end up taking hours as students become engrossed in the visual stimulation and vast amount of resources on the Web. Complaints

from students learning at a distance include getting too much information online, not being able to follow concurrent threads in a threaded discussion, and not being able to keep up with multiple conversations in chat sessions (Northrup, 2001).

Since distance learning, by its nature, physically separates educators from learners, learners may feel isolated and the instruction can become impersonal and mechanical (Porter, 1997). Lack of immediate feedback to questions and concerns can also cause learners to feel disconnected. When compared to traditional face-to-face classes, online students indicated they were less satisfied with instructor availability increasing the students' feelings of isolation (Gagne & Shepherd, 2001).

Frustration may also occur for learners if access to materials needed for the course are not always present. For instance, some articles may only be present on websites for a certain amount of time before being replaced with more current articles. Links that do not work also cause frustration. Delays in being able to access the assigned documents are frustrating, especially when students may not receive immediate feedback from the instructor regarding the problem. To avoid this problem, students may need to download materials or save them electronically while they are available online.

Teachers. Teachers have been slow to embrace technology, especially distance education because it is a costly enterprise. Teaching and designing online courses take more time out of the instructor's schedule, they must alter their teaching style to teach in this environment, and instructors may not even earn more money for the extra hours they put into making distance learning successful (Palloff & Pratt, 2001). The equipment and facilities are expensive to obtain and maintain and most technology is plagued by transmission problems that interrupt instruction, therefore frustrating both teachers and learners (Ludlow & Duff, 1998). In addition, few instructors have training prior to teaching the course or technology support throughout the course, both of which are needed to use telecommunications effectively for instruction.

When teaching at a distance, instructors face many challenges. They no longer have a familiar classroom, a relatively homogeneous group of students, face-to-face feedback, total control over the distance delivery system, or convenient opportunities to talk to students individually (Gottschalk, 2000b). Instructors must make changes in their teaching style and the communication strategies they use with students to account for these differences in the learning process when learning at a distance. Without face-to-face feedback, teaching at a distance requires a keen sense of awareness on the part of the instructor. In face-to-face

instruction, teachers rely on cues from students to enhance their delivery of instructional content and adjusts course delivery to meet the needs of the class (Gottschalk, 2000a). Since the teacher is separated from the students, it is more difficult to gauge students' reactions because there are few, if any, visual cues, and some instructors indicate a struggle with the lack of student responsiveness (Flottemesch, 2000). Through training, instructors gain knowledge on alternative methods to gauge student understanding in the distance learning environment.

Teaching at a distance also requires instructors to alter their teaching style. Instead of the dispenser of knowledge, instructors serve as a facilitator in the learning process. Relinquishing a degree of control over the teaching and learning process enables instructors to empower learners, build a learning community, use collaborative learning techniques, and be open and flexible (Palloff & Pratt, 2001). Teachers accustomed to more conventional teaching modes will also have to acquire new skills to assume expanded roles to teach distance learners and organize instructional resources suitable in content and format for independent study. In order to learn these new teaching strategies, instructors need training, which is a huge investment of time.

Teachers must be more organized in order to teach at a distance (Harrison & Bergen, 2000). Teachers email all of their students, giving them comments and

detailed feedback on assignments which is a time intensive undertaking, especially with a lot of students (Baron & McKay, 2001). Even if instructors are well organized, they need to be flexible because technology is not always reliable. Instructors need to be prepared for failure, having backup technology ready.

Communicating with students at a distance can also be a challenge for instructors. Lowell Monke, a distance learning instructor at Grinnell College, found it difficult to have a genuine dialogue between students who do not know each other (Engler, 2000). He sensed a feeling of mistrust among the students and misunderstandings occur more easily in a faceless online environment. Therefore, instructors need to be very aware of the communication occurring among students because there is a danger in unresolved conflict in this medium. If an instructor fails to intervene or support the attempts by others to resolve a conflict, participation in the online course will be guarded and sparse (Palloff & Pratt, 1999).

Even after completing the instruction of a distance education course, the instructor's job is not finished. Next, the major revisions in the course must be done. With the constant changes of the Internet's resources and the hardware and software used to access it freely requires educators to update their materials and approaches to the subject matter frequently (Porter, 1997). Input from students

also needs to be assessed and changes to the course made. A good distance learning course will never be offered the same way twice.

These many changes that teachers of distance learning classes are expected to make do not occur overnight. Faculty need training and assistance in making the transition to the online environment, constructing effective distance learning courses, using the course software, changing the ways in which they organize and deliver instruction, learning the differences in online teaching, and discovering what is required to build a learning community online. All of these are issues instructors in distance learning courses face, yet few campuses currently offer this training, making the burden of teaching at a distance even greater.

Creating online courses that are high quality and promote the achievement of learning outcomes is time-consuming and expensive. If instructors are developing the course they teach, it is a great investment of their time. The table in Appendix A illustrates the time comparisons of an online class vs. face-to-face instruction for one week. This table shows that it takes generally far longer to develop an online course. Plus, faculty teaching online courses must then spend two to five hours more a week for class related work (Byun, Hallett, & Essex, 2000). This causes additional stress for instructors, especially if they do not have

the proper training and support. Plus, there is not yet a widely accepted standard for what constitutes a good online course, which makes the job of instructors even more difficult.

Benefits

Financial. Educational institutions perceive distance education as an alternative format for increasing enrollments and revenues by accessing new student markets (Kaufman, Watkins, & Guerra, 2001). Making education more accessible by offering useful learning opportunities to people at a time and location that is convenient for them, distance learning is meeting the needs of the expanding adult student population, thus increasing enrollments (Kaufman, Watkins, & Guerra, 2001). The purpose of distance learning is to extend the reach of the university, make lifelong learning possible and attractive to more students, and control costs (Palloff & Pratt, 2001).

Lifelong learning is not only possible, but it is becoming accepted as a requirement for actively participating in the modern world. This is a challenge for many adults and college students, especially those who work full time and have the responsibility of a family. Designing distance learning courses can help institutions remain marketable in a changing academic environment. These distance learning courses can help universities provide a service to an untapped

group of learners (Porter, 1997) in addition to improving educational institutions by proving to be cost effective. As enrollment numbers climb and budgets decline, distance learning allows institutions to provide students with learning opportunities without the cost of constructing and maintaining additional buildings (Gagne & Shepherd, 2001). Institutions would not have to spend as much money on their buildings and operations, but rather on web-based teaching tools that they can use to become competitive with other institutions (Tetiwat & Igbaria, 2000). There is also a reduced expenditure on the part of the university in the area of materials. Documents will no longer need to be photocopied for students. Instead they can access these materials directly off the Internet.

Learning. The challenges faced by distance education are countered by opportunities to: reach a wider student audience, meet the needs of students unable to attend class on campus, and increase the flexibility and convenience in education. Distance learning also provides the opportunity to involve outside speakers who would otherwise be unavailable and link students from different social, cultural, economic, and experiential backgrounds (Gottschalk, 2000a). All of these aspects of distance education provide an opportunity for a new educational approach that can enrich the learning process. In addition, there is opportunity for students to explore the content collaboratively and to pursue

their own, related interests in a distance learning environment. With well-designed distance learning, no longer is there a unidirectional imparting of knowledge by an expert on a particular topic, nor is there a necessity for courses to be place or time-based. (Palloff & Pratt, 1999).

Some view Web-based online college courses as an alienating mass-produced product. On the contrary, distance learning college courses are a labor-intensive, highly text-based, intellectually challenging forum which elicits deeper thinking on the part of the students and which presents more equality between instructor and student (Smith, Ferguson, & Caris, 2001). Well designed distance learning benefits the learning process in the following areas: amount of interactivity, collaboration, achievement, feedback, immediacy, individualization, and reflection.

Interactivity is a key to setting distance learning apart from the traditional class. The interactivity component of well designed distance learning courses is valued for its ability to engage learners in the material. Much of traditional teaching is unable to offer this type of active participation and motivation. When the interactivity component is implemented effectively in distance learning courses, students and learners are empowered to take on a more powerful role in the learning process (Palloff & Pratt, 2001).

The most profound learning comes through interacting with others (Palloff & Pratt, 2001). Research indicates that student-to-student interaction is an important determinant of educational success in a distance learning environment (Flottemesch, 2000). The potential for sharing and discussing information with more people is much greater with distance learning, than within a traditional face-to-face classroom. Through online communications, students may access experts and students from around the world, gaining their opinions and input. Unlike face-to-face instruction, online courses provide enormous potential for social and interpersonal interaction as students participate in discussion groups and reflect and respond to others' work. In order for all students to benefit from this experience, it is likely that encouragement and assistance from the instructor will be needed by some students. As students interact with the course material, peers, the instructor, and experts through the use of technology, a learning web develops (See Appendix B). Through this interaction, students can actively seek and sift through available information, explore the material, build their own knowledge, share it with others, and reflect on the meaning the information has in their own lives. Interacting with others and the material in a meaningful way creates a deeper understanding of the concepts.

Although some students report they are untrusting of other students in the online environment, typically the level of interaction that students have in a well-designed online distance learning setting is very high. This interaction is an advantage to the instructor who is evaluating the students because the students must participate in order to complete class successfully (Palloff & Pratt, 2001). The instructor can see on a regular basis how students are analyzing and applying course material. Email provides more opportunities for conversation outside the traditional classroom and it encourages learning to take place anytime and any place.

The constructivist perspective dominates learning theories today (Morphew, 2000). Constructivists believe that both the teachers and students come to learning experiences with prior knowledge. Morphew (2000) states that through interactions with others and the learning environment, students create new meaning over time by building a bridge between their prior knowledge and the new information they learn. Constructivists believe that learning must be actively constructed by students, themselves. Ludlow and Duff (1998) state that distance education supports the current educational theories, including constructivism, that

focus on learning as a self-directed, active, and collaborative process. According to Gallini (2001), following a constructivist model is a natural and effective way to integrate online technology into the curriculum.

The Internet is not required for constructivist activity, however online environments that allow learners to perform many active tasks can make constructivist activity more efficient and manageable in traditional classrooms confined by space, resources, and time (Oliver, 2000). There are many advantages of using computers in distance education: they can facilitate self-paced learning, computers individualize learning, using online quizzes can provide students with immediate reinforcement and feedback, it is a multimedia tool which meets the needs of all learning styles since it includes graphics/print/audio/video, computers are interactive which maximizes learner control, and computers allow students increased access to a broad range of resources, such as experts and information on the Internet (Gottschalk, 2000c).

By collaborating across distances, students can bridge gaps between time and space, learning and sharing experiences and ideas about issues of importance with others around the world. Through telecommunications, schools can include opportunities for students to share their experiences with people of other cultures, dispel misconceptions of others, and learn from diverse perspectives and

experiences from around the world (Cifuentes & Murphy, 2000). Distance learning thus provides opportunities for students to become more tolerant and respectful citizens, promoting cultural understanding, global awareness, and international connections (Lamb & Smith, 1999).

Cooperative learning actively engages students and helps them develop abilities in problem solving, critical thinking, and teamwork. The joining of cooperative learning and computer technology can be used to create experiences that transcend the boundaries of traditional academic disciplines (Quick & Lieb, 2000). One website that contains many examples of these interdisciplinary projects can be found at the Global Schoolhouse (2001). The Web's capacity for collaboration offers new models for learning and meaning making as well as the potential for cross cultural partnerships never before possible (Oseas, 2000). By continuing to bridge individual gaps of culture and understanding, as well as space and time, distance learning promises to enrich the entire span of education (Granger, 1990).

Palloff and Pratt (2001) report that students in virtual classes achieve better results on tests compared to students in the traditional class. The differences in performance are attributed to the enhanced ability for students to collaborate in an online class. Peer interaction is a contributing factor in high

performance level, in both the traditional face-to-face classroom and in a distance learning course. In future research collaboration is a variable that will need to be controlled.

There are conflicting research results in measuring achievement of distance education students. Studies have found that students learning at a distance perform as well or better than students in the traditional face-to-face classroom. Studies comparing online and on-campus courses have consistently found that the performance of online students is not significantly different from the performance of on-campus students (Gagne & Shepherd, 2001). Draves (2000) reports that recent research reported in the Washington Post cites studies showing that online learning is equally as effective as learning in person. Typically when these results show distance learning to be as effective, the following factors are considered present: the method and technology used are appropriate to the instructional tasks, there is interaction among the students, and there is timely teacher-to-student feedback (Gilbert, 2001). More recent studies show that online classes can be more successful than traditional courses when they allow for active engagement and interaction. Since any kind of distance education requires special student

initiative, it is automatically more engaging (Gilbert, 2001). When distance learning is also well facilitated, it can do everything that classroom instruction can do and more (Spitzer, 2001).

The Office of Technology Assessment, sponsored by Congress, has found in several reports that distance learners do as well or better than traditional students in their courses and on achievement tests. Perhaps this is because online learning participation demands more, engages more, and empowers more than the traditional approaches (Gilbert, 2001). A comparison of online and traditional computer applications classes at Macon State College found that, when given the same tests, a much higher percentage of the students earned As in the online class (Cooper, 2001).

There are many variables that impact this higher level of learning. Distance learning also allows students to create a much deeper meaning of the material they are studying. Through the interactions with peers and experts, and the added time to reflect on the material, students go beyond merely summarizing the material. Students analyze material critically, present it to peers, thus constructing a deeper, personal understanding of the concepts (Palloff & Pratt, 2001). Achievement is higher as is the quality of work students produce in the distance learning environment. Sharing knowledge, research, and projects with others

through distance learning encourages higher quality work and a stretching of capabilities since students have a genuine audience, and can gain the perspectives of individuals far beyond the school (Cifuentes & Murphy, 2000).

The feedback process allows instructors in the distance learning environment to guide discussions, focusing students' attention on central themes and issues in the course, guiding the students through the learning process (Baron & McKay, 2001). This interaction with the material supports the constructivist theory of learning. Through this process, students create a deeper understanding of the material through their interaction, in contrast to the traditional classroom where the teacher broadcasts knowledge to students.

Not only do instructors provide students with feedback in discussions, they also communicate with students about assignments and the course itself through tools such as email and/or discussion forums. Although providing students with constructive feedback is very time consuming for the instructor, it does have a very positive impact on the students and their achievement in distance learning courses (Baron & McKay, 2001). Email is a tool that helps instructors provide this feedback to students in an efficient manner. This prompt response increases student motivation and performance (Gottschalk, 2000c).

Traditional school curriculum materials are criticized for content that does not connect directly to the lives of students, the content can quickly become outdated, and is rarely individualized according to learner interests and abilities. Immediacy and individualization is brought to the school curriculum through computer based telecommunications. Users can connect to worldwide events as they are happening, communicate instantaneously with people on every continent, participate in cooperative online projects, and explore content themes interactively in an infinite variety of sequences, (Dyrli & Kinnaman, 1996). The up-to-date, real-world material available on the Web gives students an immediacy that cannot be found in textbooks.

The power and flexibility of distance learning technologies offer new and enhanced ways to incorporate active and interactive learning experiences into curricula at all educational levels to most appropriately meet the needs of an increasingly diverse population of learners (Chute, Thompson, & Hancock, 1999). Not only may students in a distance learning course be from many locations across the nation or globe, they also have varying learning styles. Distance learning may be helpful in accommodating various student learning styles, whether they are visual, auditory, or kinesthetic. Audio clips explaining concepts important in the course can be used to meet the needs of the auditory learner who

is more comfortable listening to information being presented. Video clips and text accommodate the needs of the visual learner. Assignments providing some mobility, such as online research will be appreciated by the kinesthetic learner. All of these techniques also help to keep things interesting for students who feel the need for more activity in a learning situation. (Palloff & Pratt, 2001). Palloff and Pratt explain that our understanding of how people learn is growing, suggesting that increased individualization of the learning process is the way to respond to the diverse learning styles brought by our students as they enter and re-enter the world of higher education (Palloff & Pratt, 1999).

Distance learning allows individuals to explore abundant and diverse bits of information in their own way, leading them to reflect more on their own knowledge construction (Liaw & Huang, 2000). Reflection allows learners opportunities to modify misconceptions or improve inadequate understanding. It also provides students opportunities to merge their understanding of concepts and topics with that of experts or professionals (Oliver, 2000). The asynchronous environment in distance learning allows students the luxury of time for thought and reflection on material, which enhances the learning process (Palloff & Pratt, 2001). The result is a greater ability to make meaning out of the material being studied due to the active engagement with the material. By encouraging students

to engage in self reflection related to the learning process, their ability to make meaning is greatly enhanced and the learning outcomes become deeper and more permanent (Palloff & Pratt, 1999).

The distance learning environment presents a number of educational opportunities and advantages over traditional classes: many information resources can be seamlessly integrated into the class, web pages can be assigned as required readings, students can do research projects using online databases, online guests can be integrated into the class naturally even though they may live at a distance, and the emphasis on the written word encourages a deeper level of thinking (Smith, Ferguson, & Caris, 2001). Helpful resources and unique interactions unavailable in traditional face-to-face teaching can be found in the distance learning environment. Students all over the globe can participate in a course at the same time. Electronic information also has the advantage of providing up to the minute facts. Students have the opportunity to access some of the world's finest resources with a far greater variety of educational philosophies, courses, and instructional styles than they could ever encounter on a single campus, and without having to leave their homeland and workplace (Utsumi, Rossman, & Rosen, 1990).

Distance education has the power to revolutionize education in tomorrow's schools. Technology mediated distance education creates a vision of schools and universities without walls, freeing learners of all ages from constraints of time and place, and allowing them to learn what they want when they want (Ludlow & Duff, 1998).

Students. Distance learning will be attracting more and more people because this method of learning allows more students to participate, despite work and family responsibility. More people must continue learning but have schedules that prevent them from attending class. Distance learning technology continues to become simpler and more accessible and the number of students in distance learning classes grows larger and larger each semester (Gilbert, 2001).

In addition to flexibility in scheduling, distance learning environments provide other benefits for students. Distance learning also increases the number of students participating in discussions. In the traditional class time constraints limit the number of students who can participate fully in discussions, whereas in the online classroom, a much larger percentage of students have the opportunity to share their thoughts and reflect on readings through discussions (Smith, Ferguson, & Caris, 2001). In the distance learning setting, learning is not bound by place, time, speed, or learning style. Students can learn at their own peak learning time

of the day, at their own speed, and in the manner in which they learn best. Distance learning using the Internet provides both remedial and advanced supplementary materials for students through hypertext, creating a student-centered environment that encourages students to find the learning path that best suits them (Baron & McKay, 2001).

Distant learning students may learn independently, at their own pace, in a convenient location, at a convenient time, about a greater variety of subjects, from a greater variety of institutions or educators, learn according to their preferred mode of learning, practice working with different technologies, and direct their own learning (Porter, 1997). The independence students experience in a distance learning course gives them the freedom to work quickly and make more progress in a short time than they would if they took a classroom based course (Porter, 1997).

Advantages of technology in the distance learning classroom are impacting the learning of many students who struggle in the traditional classroom. Students who tend to be quiet in the traditional classroom tend to flourish in the online environment since it allows them more time for reflection and response (Palloff & Pratt, 2001). Students can take their time and prepare their responses carefully without having to compete with the extroverted learners for discussion time. Distance learning is more learner centered than the traditional classroom. Since

distance learning meets the needs of the various learning styles, it also meets the needs of a diverse student population. Distance learning provides students with a feeling of anonymity, allowing all students and instructors to communicate on a more equal footing (Smith, Ferguson, & Caris, 2001). Distance learning programs increase the possibility of academic success for children and adult learners alike, because individualized education allows students to learn at their own pace (Rowh, 1996).

Many educational technologies also adapt easily to support different learning styles, helping non-traditional learners earn a seat at the achievement table (Oseas, 2000). Students are motivated by technology. It can provide multiple paths to learning to fit individual students' learning styles and strengths, it enables students to work with greater autonomy, collaborate with peers and mentors, and gain access to more information related to their own interests, making their learning more engaging (Kleinman, 2000). Through distance learning students are also gaining new skills such as online teamwork, essential for work in the twenty-first century (Engler, 2000).

Distance education also helps make learning more relevant to the student. It has the ability to bring life in the outside world into the classroom, aiding the entire group in the meaning-making process (Pratt & Palloff, 1999). Students can

improve their critical thinking skills through the sustained use of Web-based technology as they sift through information on the Web, judging the value of the information they find, analyzing and synthesizing the sources of information, and construct their own thoughts to share with others through discussion groups (Tetiwat & Igbaria, 2000).

Interacting with their peers in real-time around the world through features such as online chat sessions provides students with a real audience who reads, uses, and critiques their work. This aspect of distance learning also helps make the learning process more meaningful. Through this online interaction, students are exposed to a diverse environment of cultures, opinions, and resources which promotes cultural understanding, global awareness, and international connections (Lamb & Smith, 1999). Increased access to experts and information is another advantage for students in distance learning classrooms. The ability to communicate with experts in their field of interest makes learning relevant to students. The technology allows instructors and students to create new kinds of learning communities. Teleconferencing, computer conferencing, computer bulletin boards that allow isolated distant students to share ideas with one another are just some of the ways technology is allowing new ways for people to come together (Miller, 1990).

Although some fear isolation in a distance learning course, through online interaction, students actually have more contact with others (Gilbert, 2001).

Teachers. Distance learning instructors gain both direct and indirect benefits from their profession. Teachers often comment that the focused preparation required to teach at a distance improved their overall teaching and empathy for their students (Gottschalk, 2000a). As instructors develop online classes, they have the opportunity to confront and analyze material in new and different ways (Smith, Ferguson, & Caris, 2001). Many teachers have intrinsic incentives for teaching online. Instructors are able to use new teaching techniques and then receive recognition for their work (Palloff & Pratt, 2001).

Related Issues

Common concerns related to distance learning occur in four major areas: Teacher Compensation, Course Ownership, Course Creation, and Academic Integrity.

Teacher Compensation. One issue that remains unresolved for many institutions is that of teacher compensation. To work successfully with distance learning, instructors need the time to train how to teach in the distance learning environment, learn new technology, and create new materials and methods to use in the distance education. Faculty feel they should be compensated for this

additional time spent learning how to make the distance learning experience effective for the students. The changing role of the instructor in the distance learning environment is cause for tension between administrators and faculty regarding compensation. As stated previously, developing an effective distance learning course is very time consuming. Faculty believe they should be compensated for their dedication to the creation of a successful course. Some institutions offer a stipend for developing online courses and others have offered training and incentives for instructors who are willing to develop online courses (Palloff & Pratt, 1999). Once the course is developed, even more controversy arises over how much the instructor should be paid. Some institutions pay faculty less for teaching online due to the absence of travel, no designated class time, and working with smaller numbers of students in most cases (Palloff & Pratt, 1999). Faculty feel that since they are required to be available every day and are doing more work in preparing and delivering the course, the pay should be higher (Palloff & Pratt, 1999). The teacher compensation issue is a new arena for many institutions and it will take time to sort out a formula for what constitutes an appropriate fee and salary for distance education teachers.

Course Ownership. Intellectual property rights are definitely an issue in distance learning. The legal system may have to address this issue to determine

who owns the copyright on Web courses, the university or the faculty who developed them (Aggarwal & Bento, 2000). Many factors enter into this complicated decision. Typically the course is being housed on the university server and the administration pays for the creation of the materials for the online course. However, instructors create the material and actually develop the course. While the decision of ownership remains unresolved in many institutions, some universities have opted to split the profit between the institution and the professor (Palloff & Pratt, 2001).

Course Creation. There are many different ways institutions can develop a distance learning course. Some universities outsource the task of developing a distance learning course. While this frees instructors from the overwhelming task of developing a distance course, instructors then have to teach from a course content and format they are not familiar with. This could be even more time consuming than developing the course themselves. According to Sharp (2001), it is important that content and course development be the responsibility of instructors, and that they remain actively engaged in selecting and creating a distance learning program. It is vital that faculty are involved in the course software selection process since they will be using it to create their class. In addition to faculty, it is also important that administrators, students, and

personnel involved with technology support be involved in the selection process. Appendix C shows the collaborative model for designing online courses and the various components of the design process. Many times the most effective distance learning courses are developed by a combination of faculty who serve as the content experts, course designers who are more familiar with the most effective ways the software will operate, and the support personnel who will be assisting the instructor and/or students throughout the course (Kang, 2001). No matter what method is decided upon, the university needs to take a proactive role in how materials are developed and used in distance learning courses.

Academic Integrity. One of the major disadvantages to online quizzes is the inability to guarantee academic integrity (Harrison & Bergen, 2000). To diminish this concern, one alternative is for instructors to arrange for students to take a proctored midterm and final. It may be difficult for instructors to arrange a testing schedule for all their students, yet it assures that students are getting credit for their own work. However, in their research, Smith, Ferguson, and Caris (2001) discovered an online professor who printed the students' papers, none of which had names and went back and guessed the writer of each paper correctly. The emergence of this online identity may make the whole worry of online cheating a moot point. However, this is assuming that essay questions, not multiple choice

or true/false, is the chosen method for student evaluation. In addition to online quizzes or proctored exams, another alternative is to alter the way achievement is evaluated in the distance learning course. Since interaction is a major factor in student success in distance learning, student participation in the course could weigh heavily in grading. If the course is well constructed, focusing on interaction, is learner-centered, and promotes learner empowerment and self-reflection, the notion of cheating should not become a concern (Palloff & Pratt, 1999).

Conclusions and Recommendations

As part-time adult students, who are more mobile and less willing or able to devote full time to study, increase as a percentage of the total student population, the educational system has to change to accommodate the needs of this growing student population. Distance learning offers institutions an effective way to meet the demands of the increasing non-traditional student population.

This change, however, does not come without costs. Instructors must alter their roles, students must become more independent and responsible, and institutions must invest a great deal of time and money in the distance learning process. Despite these costs, distance learning not only delivers course content in a manner suitable for students of many different learning styles and abilities, it helps them create a deeper understanding of the material. Distance learning also

prepares students for the future and helps them become independent learners in a lifelong learning process. As instructors devote more time to their course, they discover a truer sense of what their students are learning by reading and responding to students' reflective postings regularly in discussion groups. Universities are also able to serve a larger population, educating students anywhere at any time, without additional costs of buildings and maintenance.

Multiple researchers discovering that little differences in the outcomes between traditional and distance learning exist, have led to an increased recognition and acceptance of telecommunications as a valid means to deliver education (Hezel Associates, 1996-97). However, Internet courses are new enough that research is still evolving and more research is needed and will likely continue indefinitely (Gilbert, 2001).

Today learners have a choice of distance learning, in twenty years online learning will represent fifty percent of all learning and by then distance learning will seem like a natural choice (Draves, 2000). There is no doubt that distance learning is here to stay (Spitzer, 2001). In the future, new software for online courses will be developed, standards for online courses will be created, agreement

will be made regarding what constitutes a quality online program, training will be increased for faculty to ensure success in the online classroom. (Palloff & Pratt, 2001).

Additional research and resolution of issues surrounding distance education still need to be accomplished, yet the opportunities the distance learning environment holds for students and the learning process make it a worthwhile investment.

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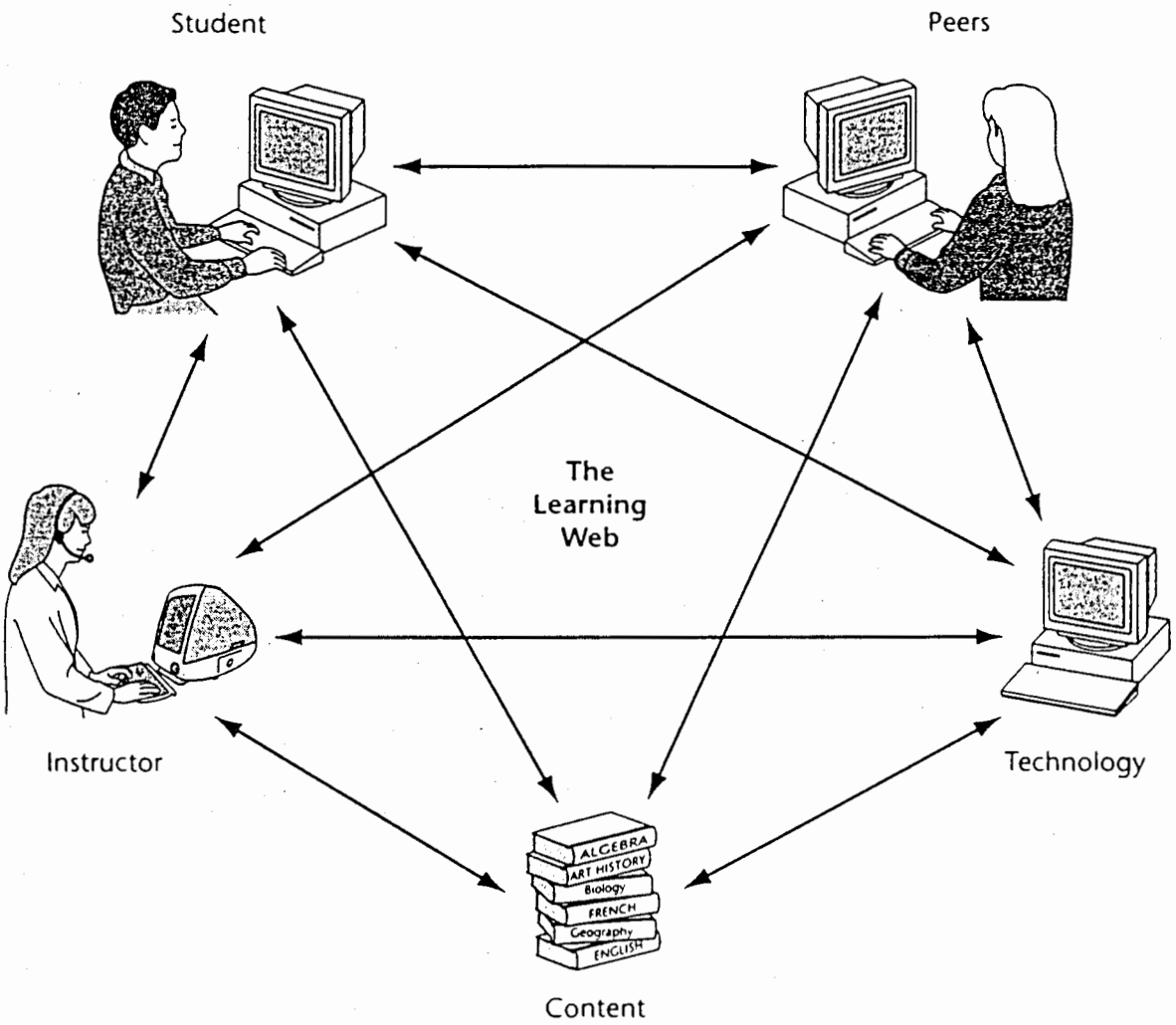
Appendix A: Time comparisons of an online class vs. face-to-face for one week

Instructor Activity	Face-to-Face Class	Online Class
Preparation	2 hours per week to: Review assigned reading Review lecture materials Review and prepare in-class activities	2 hours per week to: Review assigned reading Prepare discussion questions and "lecture" material in the form of a paragraph or two
Class time	2½ hours per week of assigned class time	2 hours *daily* to: Read student posts Respond to student posts
Follow-up	2 to 3 hours per week for: Individual contact with students Reading student assignments	2 to 3 hours per week for: Individual contact with students via e-mail and phone Reading student assignments
Totals for the week	6½ to 7½ hours per week	18 to 19 hours per week

Note: Time involved with online classes is related to a number of variables such as the number of students enrolled in the class, the level of comfort with the technology on the part of both the instructor and the students, the encountering of technical difficulties, the degree to which discussion is an expected part of class activity, and the types of activities in which students are engaged.

Appendix B: The learning web



Appendix C: Design process of web based courses & collaborative model for design