

A STUDY TO DETERMINE THE VALUE AND EFFECTIVENESS OF
ONLINE DISTANCE LEARNING TO TECHNICAL AND COMMUNITY
COLLEGE STUDENTS

By

Diane K. Martinek

A Research Paper

Submitted in Partial Fulfillment of the
Requirements for the
Master of Science Degree
With a Major in

Education

Approved: 2 Semester Credits

Investigation Advisor

The Graduate College
University of Wisconsin—Stout
August, 2002

The purpose of this study was to critically review and analyze the research regarding the value and effectiveness of online distance learning in order to effectively instruct and complete online distance programs and courses. Without effective instruction, the student's learning has less of a chance to succeed in a distance format.

In the introduction, an understanding of distance education is explored. Following this, is a review of the academic role in distance learning, characteristics of effective distant teachers, characteristics of successful students, and strategies to teach online courses effectively.

Conclusions and recommendations are directed toward technical and community college instructors that have a desire to facilitate and learn more about presenting an effective online course.

The findings in this study revealed that success is attainable for both instructors and participants of online courses with the proper preparation and mindset. Effective teaching strategies can be acquired by the facilitator of an online course if they are willing to learn new techniques that pertain to distance education. Students, who are highly motivated to enroll in an online course, can be just as successful as students in the traditional format. Finally, the research supports that interaction between the instructor, students, and their peer group plays a vital role in the completion of a successful online course.

ACKNOWLEDGEMENTS

There were many people that have been supportive along the way on my journey to completing my Master's degree. Without them, I would not have been as encouraged or inspired to keep on going in some very difficult times. First, I want to thank my late husband, Steven, who without his continuing, steadfast support in completing my Bachelor's degree, I would never have been able to begin a Master's program. I want to thank my mother, posthumously, for glowing with pride every time she heard me talk about taking another graduate course. Also, I want to thank the rest of my family and friends who encouraged me all along the way, and especially my daughter, Tricia, who has always been there for me whenever I needed a little more motivation to keep on going.

Next, I want to thank my research advisor Ed Biggerstaff. He has been an inspiration to me ever since the first time I took a class with him. He has made what seemed like an impossible task of writing a research paper awhile ago, not only an enlightening learning experience, but attainable. I also want to thank his wife, Brenda, for remembering me and helping to point me in the right direction.

And lastly, I thank all of my instructors along the way, who without them I could not have accomplished this undertaking. I not only learned a great deal from each and every one of them; the learning journey was the greatest part of this adventure.

TABLE OF CONTENTS

	Page
Abstract	i
Acknowledgements	iii
Table of Contents	iv
Chapter 1: Introduction	1
Statement of the Problem	7
Purpose of the Study	7
Research Objective	7
Definition of Terms	7
Assumption.....	8
Limitations	8
Chapter 2: Literature Review	9
Introduction.....	9
Academics of online distance learning	9
Challenges of online learning.....	12
Characteristics of effective distant teachers	15
Training online instructors.....	22
Administration's role in online education.....	26
Characteristics of successful students.....	29
Effective teaching strategy techniques	34
Chapter 3: Summary, Critique, Implications, and Recommendations.....	41
Introduction.....	41

Summary	41
Critique	42
Educational Implications	42
Recommendations for Further Study	43
References	45

CHAPTER 1

Introduction

Within the context of rapid technological change and shifting job market conditions, the technical and community college educational system is challenged with providing increased educational opportunities without increasing their budgets. The students attending our technical and community colleges are also faced with new challenges to keep current with new technology in an ever-changing job market, while balancing their own budgets, time, and family obligations. With these challenges in mind, technical and community colleges and their students are answering them by developing and enrolling in distance learning courses and programs to meet their needs.

Distance learning and distance education are often used interchangeably. It also goes by names like assisted learning, directed learning, distant teaching, tele-work, tele-learning, outreach, and tele-teaching. Whatever name it is given, it has become popular and controversial in the last few years. It is not a new phenomenon. The origination of distance learning is at least 150 years old. It only seems relatively new to us because of the advent of modern technologies that give us so many more sophisticated opportunities for learning. Distance learning has become more accepted and accessible because of the Internet and World Wide Web—but distance learning can involve much more than the use of computers.

The popularity and state of distance learning was published in December 1999 by the U.S. Department of Education taken from a survey titled *Distance Education at Postsecondary Education Institutions: 1997-98*. It addressed how this mode of learning has grown recently and how it might continue to grow. A few of its highlights are (Mariani, 2001):

- About one-third of all postsecondary schools offered distance learning courses—another one-fifth planned to start courses within 3 years.
- Eight percent of all postsecondary schools offered college-level degree or certificate programs that could be completed entirely through distance learning.
- Distance learning was much more common at public institutions.
- Almost 50,000 college-level courses were offered for credit via distance learning.
- There were over 1.3 million enrollments in college-level distance learning courses for credit.
- The top three technologies used to deliver courses involved Internet-based instruction in which students and instructors were separated by both space and time, two-way interactive video, and one-way prerecorded video.
- Among the institutions offering distance learning courses, the percentage of institutions using Internet-based instruction nearly tripled from 22 percent in 1995-96 to 60 percent of institutions in 1997-98.

At its most basic level, distance education takes place when a teacher and student(s) are separated by physical distance and technology (i.e., voice, video, data, and print) is used to bridge the instructional gap. There are a number of distance education definitions, but the California Distance Learning Project (1997), proposed the following major elements as key to distance learning (Palloff & Pratt, 1999):

- The separation of teacher and learner during at least a majority of each instructional process
- The use of educational media to unite teacher and learner and carry course content
- The provision of two-way communication between teacher, tutor or educational agency, and learner
- Separation of teacher and learner in space and time
- Volitional control of learning by students rather than by the distance instructor

These fundamentals begin to define education in a whole new context. Distance learning courses and programs can provide adults with a second chance at a college education, allow students to attend more than one school at a time, reach those disadvantaged by limited time, distance or physical disability, and update the knowledge of workers for their places of employment.

There are many questions that surround distance education. Many educators ask if distant educated students learn as much as students receiving traditional face-to-face instruction. When electronic communication is used for

education, a whole new set of issues (physical, emotional, and psychological) come along with the educational issues, such as carpal tunnel syndrome, back problems, headaches, addiction to technology, and personality shifts (Palloff & Pratt, 1999). Research comparing distance education to traditional face-to-face education indicates that teaching and studying at a distance can be as effective as traditional instruction when the method and technologies used are appropriate to the instructional tasks, there is student-to-student interaction, and when there is timely teacher-to-student feedback and interaction (Distance Education at a Glance, 1991).

The challenge, then, to educators facilitating distance learning is to capitalize on the strengths and capabilities of distance delivery instruction while minimizing potential problems from using it. Effective technology should remain relatively transparent, allowing the instructor and the students to concentrate on the process of teaching and learning (Willis, 1993). However, due to the interesting nature of many of the distance delivery system technologies and techniques, instructors and students can easily become distracted by the system itself and lose sight of the educational needs that brought them together in the first place.

There is a wide range of technological options available to deliver distance education. The four major categories: **Voice**—Instructional audio tools include interactive technologies of telephone, audio conferencing, and short-wave radio—passive (one-way) audio tools are tapes and radio; **Video**—Instructional video tools include still images such as slides, film, videotape, and real-time

moving images combined with audio conferencing (one-way or two-way video with two-way audio); **Data**—Because computers send and receive information electronically, the term “data” is used to describe this category of instructional tools. Computer applications are varied and include:

- Computer-assisted instruction (CAI)—uses the computer as a self-contained teaching machine.
- Computer-managed instruction (CMI)—uses the computer to organize instruction and track student records and progress (instruction itself may not be delivered via a computer, although it can be combined with CAI).
- Computer-mediated education (CME)—computer applications that facilitate the delivery of instruction (e.g., electronic mail, fax, real-time computer conferencing, and World Wide Web applications).

Print—is the foundation of distance education programs and the basis from which all other delivery systems have evolved, e.g., textbooks, study guides, workbooks, course syllabi, and case studies (Distance Education at a Glance, 1991).

Technology plays an important role in the delivery of distance learning, but the instructional facilitator needs to stay focused on educational outcomes not the delivery system. The key to effective distance learning is focusing on the needs of the students. As cited by Carter (2001, p. 250), “to effectively bridge the gaps between classroom and distance teaching, faculty need to look at the distance teaching and learning from the students’ point of view.” By creating a

bridge between on-campus and online learning, courses make a shift from instructor-dominated to student-centered. Students learn to take responsibility for their learning. Once adopted, students get on a course of active learning that can increase their chances for lifetime learning (Chamberlin, 2001).

Effective distance education programs start with careful planning, an understanding of course requirements, and student needs. Computer-based learning and distance education hold significant social and economic promise, but this depends largely on the new technologies. With new technology comes the reality of unexpected side effects that alter intended consequences (Barley, 1999). The appropriate technology can be selected after the details of these basics are understood.

Effective distance learning evolves because of the hard work and dedication of instructors, students, technical support, and administrators. This is not to say that distance learning is as good as, or better than face-to-face education in all respects. Distance education does not offer sporting, recreational, and general social experiences offered by on-campus education. For younger adults, this part of campus life can be very important, which is why usually those solely taking distance courses tend to be older, while younger students take part in both distance courses and on-campus courses (The Value of Distance Education, 2002).

Statement of the Problem

Distance learning/education provides a response to the increasing diversity in our community and technical colleges. Technical/community college students typically do not spend much time in social or volunteer activities on campus, since their lives are filled with competing responsibilities to family and work (Dillon & Cintron, 1997). This would explain the research that verifies the retention problems that technical and community colleges have in keeping their students. Effective and valuable distance learning programs and courses can help students to remain in school and be successful in their studies.

Purpose of the Study

The purpose of this study is to determine the value and effectiveness of online distance learning to technical and community college students.

Research Objectives

The objectives of this research will be to address the following. They are:

1. To collect and analyze literature that will identify how online distance learning affects academics, teaching, and learning.
2. Techniques for successful teaching strategies.

Definition of Terms

For clarity of understanding, the following terms need to be defined.

Active Learning - students are involved in what they are learning. They not only seek out and possess information, they do something about it.

Asynchronous Learning - a type of communication that can occur at any time and at irregular intervals, meaning that people can communicate online without a pattern of interaction. It is the predominant mode of communication used in e-mail, in usenet groups, and on bulletin boards and websites.

Courseware - software that is designed to be used in some type of educational process.

Usenet Groups - groups formed around numerous topics that are located on the Internet. It is a worldwide bulletin board system that is accessed through the Internet or online server.

Assumptions

The topics developed in this study will help educators determine online issues and students successfully complete their online distance learning courses and programs.

Limitations

The researcher has identified some limitations. They include:

1. The information explored will apply only to technical and community college students.
2. Knowledge included will apply only to online delivery systems.

CHAPTER 2

Review and Analysis of Literature

Introduction

In this chapter, effectiveness and value of online distance learning in community and technical colleges will be explored. The chapter will focus on the role of academics and challenges in online distance learning, characteristics and training of effective distance teachers, the role of administration in online education, characteristics of successful students, and techniques for successful teaching strategies.

Academics of online distance learning

There is much debate as to whether or not online distance learning is as effective as traditional face-to-face instruction. There is the challenge of meaningful quality of courses and the new forms of delivery in distant education. Learning at a distance is different. Content is delivered differently; online learning requires learners to actively initiate learning and go get it. It takes self-direction and self-discipline. The learner must expect to work and expect to exchange ideas with the teacher and other participants. It is outcome and results oriented. The learner is in the course for the results, not the process. The learner has to create and make the time for the course (Draves, 2000).

Online distance learning can solve some of the most pressing problems in education. It can provide students with access to expert teachers, whether

students live in remote areas or in the city. It can allow students to study specialized disciplines through cross-campus distance learning agreements (Duff & Ludlow, 1998). Many technical colleges offer complete degree and certificate programs as well as specific courses via distance learning. Technology, by freeing learning from time and/or space limitations, makes education available to more people.

Any good course contains more than lectures and notes. Learning needs interaction with the teacher and other students. In distance learning, students can utilize electronic discussion boards, e-mail, chat rooms, telephone, and other methods to interact with each other and the instructor (Mariani, 2001).

Asynchronous communication is probably one of the biggest advantages to distance learning in the online format. The ability to post messages, read and respond to messages, reflect on responses, revise interpretations, and modify original assumptions and perceptions at a time convenient to the student is probably one of the biggest attributes of online learning (Chamberlin, 2001).

Depending on the technology used, there is a certain amount of background knowledge that students need in order to successfully complete a course in a timely manner. For students to function effectively, they must quickly become comfortable with the technology they will be using in their distance learning. Efforts should be made to ensure that students know how to use the technology as well as understand the context of the course they are taking. The fastest way to eliminate uneasiness in a distance education class is to meet with

students at the beginning of the class and assist them with the technology and get to know them as individuals (Willis, 1993).

To make certain that students are capable of taking a course online requires more screening upfront. Information about computer requirements and a sample course can be added to help both staff and prospective students understand what students will face when learning online. For first time students taking an online course, some of the problems they encountered were (White, 2000):

- Having to wait a long time for pages to load due to a slow (14.4 Kbps) modem speed;
- Difficulty submitting assignments for e-mail;
- Difficulty keeping sections of the course they had printed out in order;
- Frustration with cumbersome navigation through the course structure;
- Frustration with links to Web sites that didn't work;
- Difficulty finding appropriate information due to the large amount of information available on the Web; and
- Needing clarification from the instructor about assignment or activity directions.

Students like the flexibility of online courses and the feeling of connection to other students and the instructor compared to traditional courses. The Internet established a universal standard for computers to communicate. The most widely used dedicated technology used in education is courseware. The software teaches users about a specific subject. Courseware learners have

subject matter and teaching expertise available wherever and whenever they want it in an asynchronous mode, as long as they have an Internet connection available to them (Knight & Tait, 1996).

Some types of courses are more suitable for online distance learning than others. Criteria for effective distance learning consist of (Porter, 1997):

1. An appreciative audience (people who normally do not have the opportunity to take the course, but would benefit from it)
2. Course content suitable for a wide audience
3. Course content suitable for viewing (if the course requires content that must be seen, Web-based multimedia is an effective aid)
4. Appropriate amount of educator/trainer-learner interaction
5. Technically appropriate information and tools (know exactly what types of technology will be needed for the course)
6. Guarantee of high quality (make sure the course is evaluated by other educators/trainers and by the learners who have taken the course)

Challenges of online learning

Distance learning provides benefits, but it also makes demands on learners, instructors, administrators, and support staff. For students, above all it requires high motivation. It is easy to procrastinate when studying with little supervision. The need to set aside time and not get behind in a student's studies can become a big problem. A student may have to work harder than students on campus to interact with their instructors and classmates. Communication with

peers and instructors takes much more effort. Discussing issues takes on a whole new perspective. Discussion of difficult subjects via e-mail or discussion groups might require lengthy typed messages, while a traditional student can get the same results quickly with personal contact (Mariani, 2001).

Students responding to a survey regarding weaknesses of online learning gave responses that indicated (The Value of Distance Education, 2002):

1. Oral presentation skills are not developed by distance education as effectively as on campus. (This, of course, makes sense—distance students are not in a position to make regular presentations or take part in face-to-face encounters with other students or their instructor).
2. Interpersonal skills are much more developed in face-to-face settings. (Skills such as conflict resolution, team building, and group leadership are some that were mentioned.)
3. Because students do not get to meet a wide range of people, as typically seen on campuses, their cross-cultural experiences are not broadened as well as they might be on campus.
4. Many drop-in services, such as career centers, are either not available or less available online.

Technology can only be effective if it is used appropriately. When asking what technology can do, we must also be aware of what technology can undo. It should not be used to reduce the interaction between students and instructors, but to improve that interaction. Online distance education technology will convey

much more information, but it may create confusion rather than understanding. Often colleges make decisions to use online learning for reasons of cost-effectiveness rather than learning effectiveness, even though research suggests that telecommunications do not reduce the cost of teaching. Instructors need to be the force that changes instructional methods, not technology.

Risk taking will be involved in adopting new teaching methods; however, very few colleges reward risk taking. Online learning is characterized by teamwork. This is uncomfortable for instructors who are accustomed to autonomy. Instructors who teach using online learning find that they must rely on more support systems than instructors need to in a traditional classroom. Equipment needs to be functional and reliable and designing teaching materials may require assistance. Course materials, such as evaluation instruments, are generally designed for traditional classrooms and not online learning (Cintrón & Dillon, 2002, as cited in *The Value of Distance Education*, 2002).

Throughout the history of distance education, critics have questioned whether students can be taught well at a distance. Online learning has revived those concerns in education. Those who do not believe in online learning as a workable teaching tool, worry that these types of courses forgo intellectual style for convenience, that they promote isolation among students, and dehumanize the learning process. Teachers concern themselves with the loss of control that online education imposes. In spite of some of these worries, online education is here to stay. For some students, it is their only option in obtaining an education (Boser & Shea, 2001).

Characteristics of effective distant teachers

The shift from a traditional course to an online course is not an easy one. Besides the most obvious shift, that being one of technology, instructing takes on a new dimension. How do students engage ideas, try out their applications, and communicate with each other and the teacher? How are educational objectives met in a virtual environment? What type of training is required to be an effective online instructor? What role does administration play in the implementation and success of an online course or program?

The research indicates there are several principles of effective facilitating by an instructor. **Principle one:** Facilitating takes place in both a professional and a social context. Community does not just happen—it takes design and leadership practices to build (Collison, Elbaum, Haavind, & Tinker, 2000). It is the instructor's responsibility to teach learners how to create an effective net course community. An online instructor also needs to be able to give up some control in the learning process, so that learners are empowered and can build a learning community.

Dropout rates for online courses can be reduced with increased teacher and student interactivity. Pilot projects done at NYUonline in regard to developing best practices for online teaching and learning revealed that completion rates of online courses improve with involved teachers and participants (Frankola, 2001).

Principle two: The style of “Guide on the Side” versus “Sage on the Stage” is an important stance for an instructor teaching online courses. A

successful facilitator will guide instead of giving expert answers, pushing learners to learn by doing instead of rote memory.

Principle three: Online facilitating is a craft that can be learned.

Facilitators must learn new strategies for interacting with learners (Collison, Elbaum, Haavind, & Tinker, 2000).

Retention rates for online courses nationally tend to be low. Moraine Park Technical College in the fall of 2001 put four complete, new online degree programs and two certificate programs online. They increased enrollments at Moraine Park by 900 students. They also averaged an online retention rate of 72 percent, far above the national average. Dropout rates run 20 to 50 percent (Irani & Telg, 2001). Moraine Park believes its key to success lies with having learners feel they are a part of a community within the courses. Students were actively involved and instructors were well-trained (Jorgensen, 2002).

Faculty involved in the Learn Online project at Grant MacEwan Community College in Edmonton, Alberta, Canada developed a list of instructor competencies for faculty development with online courses. The competencies included:

- Comfort and effectiveness with all technology used in the course
- Ability to model use of technology
- Ability to track student activities in the course
- Willingness to be innovative in teaching methods
- Willingness to be innovative in use of technology
- Willingness to learn while doing

- Willingness to work cooperatively with technical support/design staff
- Tolerance of change
- Ability to commit significant time to the course
- Ability to handle a high amount of interaction with students
- Being a good facilitator of communication
- Being able to write clear, focused messages
- Providing clear expectations of student responsibilities in course

Another suggested addition to these competencies was the ability to design discussions to involve the students. Students expect and like having an instructor available for feedback, often even on the weekends (White, 2000).

Holmberg's (1986) theory of interaction and communication in distance education offers several "background assumptions", some of which are: the core of teaching is interaction between the teaching and learning parties; that emotional involvement in the study and feelings of personal relation between the teaching and learning parties are likely to contribute to learning pleasure; that learning pleasure supports student motivation; that strong student motivation facilitates learning; that participation in decision-making concerning the study is favorable to student motivation; that a friendly, personal tone and easy access to the subject matter contribute to learning pleasure, support student motivation and facilitate learning (Anderson & Schlosser, 1994).

The success of any distance learning course lies with the instructor. In a traditional classroom, the instructor gathers course content and develops an understanding of student needs. For those teaching in the distance format,

special challenges face an instructor. The instructor must develop an understanding of the characteristics and needs of the distant students with little first-hand knowledge or face-to-face contact. The instructor needs to adapt teaching styles by taking into consideration the needs and expectations of often diverse student populations. The instructor must develop a working understanding of the technology, all the while staying focused on the role of teacher. The effective instructor must function as a skilled facilitator and content provider (Distance Education at a Glance, 2002).

A plan needs to be put into place for instructional development. Instructional development provides a process for planning, developing, and adapting instruction based on the learner's needs. There are several instructional development models around, but the majority follows the same basic steps of design, development, evaluation, and revision.

In the **design stage**, the need for instruction is determined. To begin, determine what outside data substantiate the need, what factors led to the instructional need, and what past experiences show that instruction being planned can effectively meet this need. To better understand the distant students and their needs, the instructional designer should consider their ages, cultural backgrounds, past experiences, interests, and educational goals, when it is at all possible. When possible, the instructor should meet, at least one time, with the students. Based on the analysis of the class audience, as well as the nature of the class, instructional goals and objectives then can be established.

In the **development stage**, an outline of the content is created based on instructional problems, audience analysis, instructional goals and objectives, and an understanding of the course. Next, existing materials should be reviewed. Materials should not be used just because they are available. They may have worked in the traditional classroom, but have little relevance for distant learners. Creating relevant examples is one of the biggest challenges to an online instructor. Discussing potential content examples with a sampling of the student population is a way to address this problem. The development of instructional materials and selection of delivery methods will often require integrating technology with face-to-face communication. The same delivery systems must be available to all distant learners.

One of the purposes of the **evaluation stage** is to determine if the instructional methods and materials are accomplishing the goals and objectives that were established. If possible, instructors should try to pre-test instruction on a small scale before implementation. Next, plan when and how to evaluate the effectiveness of the instruction. After evaluation data is collected, these results should be carefully analyzed to identify weaknesses or problems in the instructional process. It is also important to identify strengths and successes. This analysis of the evaluation stage provides a “springboard” to develop the revision plan.

In the **revision stage**, the need for improvement should be anticipated. Revision generally takes place as a result of the evaluation process, feedback from colleagues and content specialists. The best source of ideas may come

from the instructor reflecting on the course strengths and weaknesses. Because of this, revision should be undertaken as soon as possible after the course is completed. Revision should be tested on small groups of distant learners, colleagues, and content specialists.

Adhering to the instructional development process will not eliminate all problems and obstacles on the way to developing an effective online course or program, but it will provide a process and procedure for addressing instructional challenges (Distance Education at a Glance, 2002).

Not all faculty are suited to teach online courses. Research indicates that the introverted personality type does well learning online—this also can apply to the instructors. Introverts can with little or no problems establish presence online, showing aspects of themselves that might not be seen otherwise. Online, introverts seem more extroverted. Online instructing allows them the ability to take time and reflect. Self-consciousness is less of a problem with online instructing (Palloff & Pratt, 2001).

Individual learners have different learning styles. The way an individual reacts to his or her overall learning environment makes up that style. The research on learning styles presents a challenge to those designing and delivering online courses. An adult's emotional state is wrapped up in his or her ability to learn. An adult must be emotionally comfortable with the learning process (Draves, 2000). "Each adult possesses different beliefs, values, needs, attitudes, self-concept, and past experiences that must be considered as planning for the learning experience progresses.....[and] to achieve the desired

outcomes, individual considerations must be made” (Rossman & Rossman, 1995, p. 27). Attention to individual differences, as well as basic aspects in adult online learning, must be taken into consideration when designing and teaching courses.

The affective dimension of learning, which is related to attention, emotion, and valuing should be taken into consideration when developing strategies for distance learning. Some strategies to use would be to:

- Design a process to allow participants to become acquainted with the instructor, as well as the other students.
- Provide for personal communication with each student before the course begins or soon thereafter.
- Design options to provide distance students with choices about content and process.
- Use an empathic and informal style in written and spoken components of the course.
- Provide images and language that include different cultural perspectives.
- Design and use a process for peer support among distance learners.
- Communicate with distance learners as if they were near.
- Communicate with students by name.
- Establish and maintain regular conversation with distance learners.
- Use low-threat testing procedures, if testing is part of the course (Rossman & Rossman, 1995).

Training online instructors

Effectively teaching at a distance (and notably, enjoying it) requires special skills, abilities, and training. Some teachers seem to instinctively take to online teaching, but most require training or trial and error to become effective and comfortable with distance instructing. The most effective and efficient ways to ensure success in distance education is through prior training and support throughout the process.

In general, in-service training and faculty support programs rely on workshops, seminars, support groups, and hands-on training, along with print and non-print instructional materials. The goal of development here is change—change not only in the delivery of instruction, but in the way the instructor sees the learner.

Often educational institutions have rigid structure which allow for few opportunities for instructors to trade ideas, receive advice, or work together to solve problems. To overcome this, mentoring programs should be considered to bring new and experienced instructors together to share ideas and problem solve. Educational institutions and instructors are also subject to criticism. Often the delivery of instruction at a distance is considered a new approach and especially open to criticism. The reality of this is that distance education has been around for decades in one form or another. What matters is that delivery methods be appropriate to content and characteristics of the learners. Once these conditions are dealt with appropriately, faculty training can reduce the vulnerability they feel with distance teaching (Willis, 1993).

It is important for an educational institution to encourage instructors to think “outside the box” when it comes to developing online courses, keeping the technology that will be used in mind. Concrete ways in which content can be delivered should be incorporated into faculty training and development. Some of the techniques used can include (Palloff & Pratt, 2001):

- Create web pages that contain no more than one screen of text and graphics
- Provide collaborative small group assignments
- Provide research assignments asking students to search for and present additional resources available on the Internet and in books and journals
- Use simulations
- Ask students to become “expert” on a topic in the content of the course and then present that topic to their peers
- Use asynchronous discussion of the topics in the content of the course material being studied
- Have students post papers to the course site
- Make limited use of audio and video clips

The current software makes it relatively easy to transfer existing course material to an online site. Institutions seeing online distance education as an answer to declining enrollments on campus are eager to enroll students in online classes. This puts a burden on faculty to hurriedly develop a poorly constructed class. Providing training for faculty can help alleviate this problem.

Faculty that are ready to teach online courses can be determined by their “willingness to learn, willingness to surrender some control over class design and teaching style, ability to build a support system, patience with technology, and ability to learn from others” (Palloff & Pratt, 2001, p. 23).

Faculty challenges in teaching online are many and varied, but if instructors are aware of these challenges they can be prepared to meet them. They must: (1) Look at the course in a new way. Often the more comfortable a teacher is teaching a course traditionally; the more difficult it becomes to adapt the course for effective online delivery. (2) Shift from the role of content provider to content facilitator. Skill here requires not only mastery of the subject, but the ability to draw on the varied backgrounds and talents of the students. (3) Gain comfort and proficiency in using technology as the primary teacher-student link. Effective use of the technology requires a working knowledge of the delivery system strengths and weaknesses. This leads to technical proficiency and the confidence needed to effectively teach an online course. 4) Learn to teach effectively without the visual control provided by direct eye contact. Distant teachers have few visual cues, sometimes they are nonexistent. Distance separation can also affect the general rapport among the students. (5) Develop an understanding and appreciation for the distant students’ lifestyle. To be an effective teacher, the instructor must have an understanding of the students (Willis, 1994).

As an instructor, all aspects of evaluating the online course cannot be emphasized enough—from the students’ performance to the instructor’s overall

effectiveness in teaching the course. The use of good evaluation can assist in expanding online programs and courses; thereby, attracting more students to distance learning. Evaluation is an important element of good course planning. Instructors need to be prepared to accept both positive and negative feedback. Using evaluation feedback, online instruction and delivery methods can be changed and improved. By asking specific evaluation questions, such as the following, the online course and instructor can be evaluated for course effectiveness and the quality of the experience for the learner (Palloff & Pratt, 1999):

- ✓ How well did the class meet your needs as a student?
- ✓ How did you feel about the mode of instruction?
- ✓ Did you feel that the instructor was responsive to you and the rest of the group?
- ✓ How do you feel overall about online learning?
- ✓ What did you see as the strengths of this class?
- ✓ What recommendations would you make to the instructor of this course to improve it?
- ✓ What advice would you give to future students who will take this course online?

This list of questions is not intended to be complete; they are to stimulate thinking in regard to the types of questions that might be asked versus the traditional types of evaluation.

According to The Office of Technology Assessment, "...teachers have to be allowed to choose, willing to make choices, and qualified to implement their choices effectively. OTA finds that, just as there is no one best use of technology, there is no one best way of teaching with technology. Flexibility should be encouraged, allowing teachers to develop their personal teaching approach utilizing the variety of options offered by technology" (U.S Congress, 1988, p. 17 as cited in Sherry, 1996).

Administration's role in online education

Technical and community colleges today are undergoing significant changes. There are economic pressures from increasing costs, demands by the business community for graduates who can function effectively in an information society and greater diversity among the student population who choose to continue their education. Today's students are also expected to demonstrate good critical thinking skills, analytical skills, and the ability to work together as a team. With this setting in mind, there is a need when developing online courses and programs for widespread cooperative planning involving administration, faculty, and online support staff. When developing a plan, all involved must understand and take into consideration the needs and concerns of the others for the implementation process to be successful.

There are many issues that require attention, not only the choice of technology, faculty support and training, but issues such as compensation for

course development and online teaching. Another issue is should the administration of online courses belong to departments or should there be a separate unit developed in the college for online learning? This question refers to control—who controls the development and delivery of online courses, and who should be in control? All of these issues can be controversial and the cause for conflict between faculty and administration. However, they are issues that need to be addressed by college administrators. Strategies and policies must be developed to establish a technological infrastructure in an institution. Administration needs to work with and listen to their instructors (Palloff & Pratt, 2001).

A survey conducted in 1999 at Arkansas State University gave the following results concerning faculty who teach online courses: 90 percent needed more preparation time to develop a course, 75 percent had no additional training other than the training they needed to use the technology in use, and more than 88 percent did not get additional compensation nor a reduced workload for developing or teaching online courses (Dickinson, Agnew, and Gorman, 1999, as cited in Palloff & Pratt, 2001).

Another study by Rockwell, Schauer, Fritz, and Marx in 1999 (Palloff & Pratt, 2001) looked at what instructors feel are incentives and obstacles to online teaching. The main incentives for instructors were personal or intrinsic, rather than monetary rewards. Other incentives were the opportunities to use new teaching techniques and receive recognition for their online work. The main

obstacles indicated were the need for time, training, and support. Money was neither seen as an obstacle or an incentive to online teaching.

Instructors can feel overwhelmed and overloaded when asked to develop and instruct online courses; however, they will respond positively to becoming involved in online curriculum when appropriate incentives are in place.

Administrators need to provide incentives such as in-house grants for course development, adequate time off for training and course development, reduced teaching loads when teaching an online course, and adequate support to assist with the course development and course delivery (Palloff & Pratt, 2001).

Faculty need to be trained in the delivery and design of online courses if they are to be effective facilitators. It appears there is no correlation between quality teaching in a face-to-face setting and teaching online. The institution needs to determine what training the faculty need in regard to the particular model of distance education they will be involved in and the technologies they will be using. Faculty can be more effective if they understand what they are being asked to do, and why. Orientation and training should be scheduled well before the time faculty is to teach to give them time to design or redesign, or modify their course and assignments for their new delivery mode. Staffing and selection of good distance learning faculty is vital to the success of online courses (Distance Education at a Glance, 2002).

Characteristics of successful students

Online learning is not for everyone, but for those students who due to time constraints or are place bound, have full-time jobs, or their lifestyles just do not allow them to attend college in a traditional campus setting, it can be the answer to their educational needs. Access to courses is a central mission to community/technical colleges. In general, studies show that students enrolled in distance courses do as well as students in the more traditional format (Kozeracki, 1999). The research indicates that certain characteristics are prevalent in successful students in distance education programs and courses. Students who are attracted to online learning are voluntarily seeking further education, are highly motivated, have higher expectations, and are more self-disciplined. They tend to be older than the average student and possess a more serious attitude toward their courses (Palloff & Pratt, 1999).

Distance learning needs to be looked at from the perspective of the learner. Success in online classes is measured by the learner. Learners determine their satisfaction by the following:

- Achieving learning objectives
- Enjoying the learning experience
- Knowing how to apply the subject content to work and to personal applications
- Feeling comfortable asking questions
- Getting answers to those questions
- Being comfortable in the learning environment

- Understanding how to use the technology
- Participating in an active learning experience
- Being able to use supporting materials in an easy-to-use, self-directed format
- Getting support from the facilitator (Mantyla & Gividen, 1997)

To be successful, students need support in their distance learning.

Students who do not come to campus need to have access to advising services, libraries, instructor office hours, computer network support and technologies.

Advising can be by e-mail or telephone, or at off-campus locations. How to use campus-based resources can be provided in printed materials that are written specifically for distance education students.

The principal role of the student is to learn. This is a task that requires motivation, planning, and the ability to apply and analyze information being taught. This process, in distance learning, is even more complex. Many distance learners are older, have jobs, and families. They must coordinate these different areas of their lives with their educational plans. Distance students have a variety of reasons for taking courses—some are interested in obtaining a degree to qualify for a better job and some to broaden their education. The learner is usually isolated in distance education. Motivational factors from other students and the support of their teacher is usually missing. Distance learners, their teachers, and other students take longer to establish a rapport. Technology is generally the medium through which information and communication flow.

Therefore, the teacher and students must become comfortable with the technical aspects of an online course or communication will be lacking.

Distant students need help in developing as distant learners. Beginning students may have difficulty understanding the demands of the course, because they do not have the support of their immediate classmates, ready access to the teacher, or knowledge with the technology being used for delivery of the course. They can be unsure of themselves in their learning. Morgan in 1991 (*Distance Education at a Glance*, 2002) maintained that distant learners who are not confident about their learning often concentrate on memorizing facts and details in order to complete their assignments and take exams. This can result in a poor understanding of course material. He views memorization of facts and details as a “surface approach” to learning.

“Surface approach” is:

- Focus on the signs (e.g., the text or instruction itself).
- Focus on discrete elements.
- Memorize information and procedures for tests.
- Unreflectively associate concepts and facts.
- Fail to distinguish principles from evidence, new information from old.
- Treat assignments as something imposed by the instructor.
- External emphasis focusing on the demands of assignments and exams leading to a knowledge that is cut-off from everyday reality.

The distant learner must become more selective and focused in their learning process to master new information. Learning needs to change from a

“surface approach” to a “deep approach”. Morgan summarizes “deep approach as follows:

- Focus on what is “signified” (e.g., the instructor’s arguments).
- Relate and distinguish new ideas and previous knowledge.
- Relate concepts to everyday experience.
- Relate and distinguish evidence and argument.
- Organize and structure content.
- Internal emphasis focusing on how instructional material relates to everyday reality (Distance Education at a Glance, 2002).

This change from “surface” to “deep” learning is not mechanical. Morgan suggests that online students and instructors must first overcome challenges before learning takes place. They must “own” their strengths, desires, skills, and needs; maintain and increase their self-esteem; relate to others; clarify what is learned; redefine what legitimate knowledge is, and deal with content.

High motivation is required to successfully complete distant education courses. The day-to-day contact with teachers and other students is usually lacking. Students need to recognize their strengths and weaknesses. They need to understand their learning goals and objectives. Distant learners may be unsure of their ability to succeed in an online course. They usually are balancing many responsibilities, such as raising a family and employment.

Student success is improved if learners set aside time for their educational activities and if they receive family support for these activities. Students learn most effectively when they are able to interact with other students. Interactivity

among the students themselves, in general, will lead to problem solving and active learning. Distant learners need to reflect on what they are learning. The existing knowledge needs to be examined in regard to new information that is being added or changed. This can be done through examinations, papers, and presentations; but less formal methods will also help students, such as reflecting and sharing their insights with other members of their class.

Adult students might not see the value in their own experiences. A facilitating instructor can help students see that their own experience is valuable and important to further their learning. When content is related to examples, it furthers student learning. Distance learning educators need to find relevant examples for their distant students and not rely on what they received in their previous training. Students can develop examples themselves that are relevant to them.

Some students do better with online learning than they do in the traditional face-to-face classroom. Generally, this applies to introverted students. Research suggests that introverts do well online, because of the lack of social pressures that they feel in a traditional setting. On the other hand, extroverted students may have some difficulty establishing their personality's online. A good example of this comes from a graduate student, she writes (Palloff & Pratt, 1999):

I am quite uncomfortable on-line. It is interesting to me that while I seem to be outspoken in person, I am finding that the depth of my contributions are not satisfying...,for me. But I'm working on it. It's fascinating being in this program...moving around, trying to find good fits and observing all the different

lenses at work. I am happy with this class' dialogue on-line and appreciate all the effort to contribute. Tonia

Effective teaching strategy techniques

To use distance education effectively, effective teaching strategies must be employed by the instructor. This begins with appropriate training for the instructor. Part of that training will be to change the mindset of the teacher from an expert to a resource. Instructors using technology need to begin by designing and implementing their courses to enhance the interpersonal aspects of instructing while minimizing the technical aspects (Ludlow & Duff, 1998).

Teaching online involves more than just designing a course for content. Effective instruction can only take place in the context of teaming up with others when designing, managing, and supporting their online courses. Instructing means reaching out to the students and providing them with the same type of direction that the instructor has had in learning the course. Instructors need to make sure their students are comfortable in their new learning format. They need to see that they have the skills to use the technology in their course work. Instruction needs a variety of formats and strategies that actively involve the learner, so they are less likely to either “tune out” or “drop out” of a course. It is up to the instructor to keep open the lines of communication between themselves, the students, and the student peer group. Instructors need to know their students in a format that challenges this type of communication. There are many more variables to teaching at a distance than face-to-face in a classroom (Mantyla, 1999).

There are also physical aspects that will contribute or detract from an online learner. These aspects can be passed on to the learner at the beginning of their course work. They are:

- How the light in a room falls on their computer screen—whether there is too much or not enough. Also, that they have the ability to control the brightness of their screen.
- Learners, if working from an office or if their home is noisy, should close the door and notify others not to interrupt them.
- Distractions from e-mail messages that pop up can be turned off.
- Online learners should block out a specific time of day for their course work, so that they can fully concentrate.
- Having a larger monitor will improve learning.
- Some learners can concentrate while listening to music, others find it distracting.
- Depending on the learner, some learn well at the office, while others do better working at home.
- Readings viewed or downloaded from the Internet should be short and chunked.
- Having something to drink or even small amounts of food while a student works can be helpful at certain times.
- The time a day a person works online is critical—a learner's peak learning time needs to be established and some of it allocated to class work.

- Even aroma can affect learning—some learners may find it increases their learning experience to light a candle, etc. (Draves, 1999).

These suggestions help learners realize that learning online is also a physical experience as well as if they were learning in person. This can help them to make improvements in their physical environment that will lead to improved online learning.

In an online course, instructors can use many of the traditional classroom learning strategies to encourage good thinking, engage students in the course, and promote intellectual development. (1) Courses can be designed with self-testing quizzes and tutorials based on chapter content. (2) Instructors can apply the concepts of the text chapters to cases or issues every week or whenever appropriate. Responses can be written by groups or individuals and posted publicly or in the student's assignment folder—personal applications can be placed in assignment folders and less personal topics can be posted publicly. (3) Questions can be put forward for asynchronous discussion. (4) Instructors can create a “need to know” in their students by provoking discomfort, upsetting established thinking, uncovering misconceptions, arousing curiosity, and putting forth problems. A task can be assigned that uses the student's prior knowledge, but also requires new information or procedures in order to find the answer or solve the problem. (5) Students can be instructed to write reflective responses to the course content and to consider writing about the course by keeping a journal. (6) Before assigning reading topics, an instructor can ask for opinions and conduct surveys to stimulate interest in the issues or topics. (7) Activities can be

presented that require opposing views, and (8) assignments given for an argument to be mediated encouraging an acceptable resolution to both sides (Lang, 2000).

Presby (2001), a veteran instructor of 24 years in the traditional format at William Paterson University, first taught an online course in the summer of 2000. His university provides instructor training and access for students to various resources required for a successful online learning experience. Approximately 75 percent of the student body at William Paterson does not reside on campus. Presby came up with a list of seven components for a successful online course. They are:

1. **Choice.** Students should be given choice as to how they learn, as long as they learn—some work better independently, some better in groups.
2. **Up-to-date information.** Students are able to read more timely information from other sources than textbooks. To know whether assignments were being read, he required them to respond to questions on each reading assignment.
3. **Virtual company visits.** Virtual visits provided interesting information to the students. After each tour, students were required to respond to questions and e-mail him with their answers.
4. **Textbook link.** The text should provide material to supplement the computer. He created an opportunity to obtain feedback from students by asking quiz questions.

5. **Communication within groups.** In a traditional classroom, interaction with shy students can be difficult, but online interaction can allow these students to be active in their learning process. He assigned case studies that were discussed in groups, and the answers submitted for each group.
6. **Interaction between groups.** Each student was required to interact with someone else in the class by answering current events questions and commenting and/or adding to other students' answers.
7. **Actual class interaction.** He found this to be absolutely necessary as a pre-class or first class session. In this session, students learn about the delivery technology and are able to ask any "in person" questions regarding the course. He typically offered two identical sessions at different times during the first week, so as to accommodate students with scheduling problems.

Effective distance teaching, for the most part, requires teachers to enhance their existing skills rather than developing new skills. They need to devote particular attention to:

- Realistically assessing the amount of content that can be effectively delivered in an online course—usually more time is needed for content at a distance because of the logistics.

- Be aware that students will have different learning styles—some learn easily in groups, others will learn more effectively working independently.
- Vary and pace course activities.
- Humanize the course by focusing on the students and not the delivery system.
- Consider using printed materials to supplement non-printed materials.
- Use locally relevant case studies and examples whenever possible—this assists the students in their understanding and application of the course content.
- Be concise, by using short, organized statements—ask direct questions, realizing that technical issues could increase student's response time.
- Develop strategies to support students, such as review, repetition, and remediation—use e-mail communication or personal phone conversations.
- And, the teacher needs to relax—students will grow comfortable with the process of distance learning and effective teaching will flow naturally (Distance Education at a Glance, 2002).

Online distance learning presents both challenges and opportunities for growth and knowledge for teachers and students alike. When taking into consideration the academics involved in online learning and the ability this medium provides students to have access to educational opportunities they

otherwise could not connect with, it offers them a great resource. Online distance learning plays an increasingly dominant role in our communities. With the application of effective, trained instructors, this alternate avenue for lifelong learning provides our technical/community college students with yet one more way to successfully complete programs and individual courses.

CHAPTER 3

Summary, Critique, Implications, and Recommendations

Introduction

This final chapter contains a review of the research on online distance learning as it applies to technical and community college students. This chapter will also summarize the purpose of the research. Educational implications and recommendations for future studies will conclude this chapter.

Summary

The purpose of this study was to review, analyze, and draw implications from literature on the subject of determining the value and effectiveness of online distance learning to technical and community college students.

The focus of the study was directed at how online distance learning relates to academics, teaching, and learning. Also, included in the study were techniques for teaching strategies to help students successfully complete their online courses.

Technology change has forced us to rethink the meaning of effectiveness in education. The delivery system does not appear to influence learning as much as the effectiveness of the instructor and the characteristics of the students, whether innate or learned. In general, research shows that if teachers are trained to be effective facilitators of online learning, students enrolled in distance education courses can do as well as students in a more traditional format.

Online distance education has the potential to provide a comparable education to the traditional classroom experience at a time and location that is more convenient to the student.

Above all, we need to remember that distance learning has more to do with learning than with distance. It really is distanceless learning, by providing new access to more educational opportunities. Further research should emphasize the connections made possible by online distance technologies, and not the distance.

Critique

This researcher found the analysis of literature in regard to the value and effectiveness of online distance learning to be relevant and enlightening. It comes at a time in her academic career when it not only is valuable, but pertinent to her immediate goals. This researcher will soon be developing courses in the administrative assistant program for online delivery. The research that was uncovered in regard to the effectiveness of teaching and delivery of online courses shows that it is not only possible to develop and design effective online courses; it is preferable, in many instances, for the student.

Educational Implications

This research has shown an increase in online distance education courses and programs over the last few years in community and technical colleges. It has focused on four roles that were intended to enhance the success and

effectiveness of online distance learning for technical and community college students and facilitators. New instructors and present instructors of online distance courses at the college level can gain some valuable insight from the research. Also, students preparing to take an online course or currently involved in an online course will benefit from the strategies outlined for characteristics of a successful student.

Recommendations for Further Study

Selected recommendations for further on the value and effectiveness of online distance learning are:

1. Conduct more thorough studies of online distance courses that provide instructors with extensive feedback from students. At present, there is still very little research that has been done regarding online courses.
2. Employ trial studies of online courses where students are paid for their participation, or at least not charged tuition for providing feedback for the development of these courses.
3. Study the characteristics that distinguish schools that offer distance curriculum from those that do not.
4. Analyze what the schools experimenting with distance education are actually doing, and what they are learning about using Internet-based technologies.
5. Carry out studies that provide information as to which courses are most amenable to Internet-based instruction.

6. Assess how employers regard the competency of a distance-based education.
7. Compare online assessment tools with traditional classroom assessment tools.

References

Anderson, M.L. & Schlosser, C.A. (1994). Distance Education: Review of the Literature, Washington, DC: Association for Educational Communications and Technology.

Barley, S.R. (1999, October). Computer-Based Distance Education: Why and Why Not. Education Digest, 65(2), 55-59.

Boser, U. & Shea, R.H. (2001, October). So where's the beef? U.S. News & World Report, 44-54.

Carter, A. (2001). Interactive distance education: implications for the adult learner. International Journal of Instructional Media, 28(3), 249-260.

Chamberlin, W.S. (2001, December). Face-to-Face vs. Cyberspace. Syllabus, 15(5), 10-11).

Collison, G., Elbaum, B., Haavind, S., & Tinker, R. (2000). Principles That Support Effective Moderation. Facilitating Online Learning (pp.1-15), Madison, WI: Atwood Publishing.

Dillon, C. L. & Cintron, R. (1997). Distance Education and the Community College. New Directions for Community Colleges, 99, 93-102.

Distance Education at a Glance. Retrieved April 18, 2002, from the World Wide Web: <http://www.uidaho.edu/evo/dist1.html>.

Draves, W.A. (2000). Teaching Online. River Falls, WI: LERN Books.

Duff, M.C. & Ludlow, B.L. (1998). Implications and Suggestions. Distance Education and Tomorrow's Schools (pp. 34-42), Bloomington, IN: Phi Delta Kappa Educational Foundation.

Duff, M.C. & Ludlow, B.L. (1998). Implications and Suggestions. Distance Education and Tomorrow's Schools (pp. 34-42), Bloomington, IN: Phi Delta Kappa Educational Foundation.

Frankola, K. (2001, June). The e-Learning Taboo: High Dropout Rates in Online Courses. Syllabus, 14(11), pp. 14-17.

Gividen, J.R. & Mantyla, K. (1997). Distance Learning A Step-by-Step Guide for Trainers, (pp. 1-9; 69-77), Alexandria, VA: American Society for Training and Development.

Irani, T. & Telg, R. (2001, August). Going the Distance: Developing A Model Distance Education Faculty Training Program. Syllabus, 15(1), 14-17.

Jorgensen, H. (2002, March 1). Wisconsin Technical College Gets Dramatic Enrollment, Retention Results With "Overnight" Online Program. Distance Education Report, 6(5), 5.

Knight, P. & Tait, J. (1996). Recent research on student learning and the learning environment. Entwistle, N., The Management of Independent Learning, (pp. 97-112), London: Staff and Educational Development Association.

Kozeracki, C. A. (1999). Scratching the Surface: Distance Education in the Community Colleges. New Directions for Community Colleges, 108, 89-98.

Lang, D. (2000, September). Critical Thinking in Web Courses: An Oxymoron? Syllabus, 14(2), 20-24.

Mantyla, K. (1999). Interactive Distance Learning Exercises that Really Work! (pp. 45-70). Alexandria, VA: American Society for Training & Development.

Mariani, M. (2001). Distance learning in postsecondary education. Occupational Outlook Quarterly, 45(2), 2-10.

Palloff, R.M. & Pratt, K. (1999). Building Learning Communities in Cyberspace. San Francisco, CA: Jossey-Bass, Inc.

Palloff, R. M. & Pratt, K. (2001). Lessons from the Cyberspace Classroom: The Realities of Online Teaching. (pp. 7-124) San Francisco, CA: Jossey-Bass, Inc.

Porter, L. R. (1997). Virtual Classroom Distance Learning with the Internet (pp.1-5; 85-102). Canada: John Wiley & Sons, Inc.

Presby, Leonard (2001, June). Seven Tips for Highly Effective Online Courses. Syllabus, 14(11), 17.

Rossmann, M.E. & Rossmann, M.H. (1995). Learning Styles: Implications for Distance Learning. Facilitating Distance Education (pp. 19-29), San Francisco, CA: Jossey-Bass, Inc.

Sherry, L. (1996). Issues in Distance Learning. International Journal of Educational Telecommunications, 1(4), 337-365.

The Value of Distance Education. Retrieved April 13, 2002, from the World Wide Web: <http://www.athabascau.ca/misc/myth1.html>.

White, C. (2000, April). Learn Online: Students and Faculty Respond to Online Distance Courses at Grant MacEwan Community College. T.H.E. Journal, 27(9), 66-70.

Willis, B. (1993). Distance Education A Practical Guide (pp. 3-8; 17-23; 105-110). Englewood Cliffs, NJ: Educational Technology Publications.

Willis, Barry (1994). Research in Distance Education. Threlkeld. R. & Brzoska, K., Distance Education Strategies and Tools, (pp. 37-62; 277-288), Englewood Cliffs, NJ: Educational Technology Publications.