

1996

Teaching and learning at a distance via interactive television

Ai Wang

University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©1996 Ai Wang

Follow this and additional works at: <https://scholarworks.uni.edu/grp>



Part of the [Education Commons](#)

Recommended Citation

Wang, Ai, "Teaching and learning at a distance via interactive television" (1996). *Graduate Research Papers*. 3488.

<https://scholarworks.uni.edu/grp/3488>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

Teaching and learning at a distance via interactive television

Abstract

Recent, advances in telecommunications technology have greatly expanded the possibilities for providing and accessing instruction. For example, satellite, and digital technologies facilitate electronic text transfer to move information quickly over long distances. Telecommunication technology systems can be linked together to form networks capable of simultaneously carrying voice, data, and video transmissions. Distance Education has become a growth industry in higher education (Wolcott, 1995). Currently technology developments are bringing about many changes in the way institutions are providing educational opportunities for students (Carter, 1996). No longer is the college campus the only location where students may go to get an education opportunity (Meyers, 1989). Today, many students may now take individual courses or actually complete degree programs from remote locations.

Teaching and Learning at a Distance Via Interactive Television

A Research Paper

Presented to

The Department of Curriculum and Instruction

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

UNIVERSITY OF NORTHERN IOWA

By

Ai Wang

December 1996

This Research Paper by: Ai Wang

Entitled : Teaching and Learning at a Distance Via Interactive Television

has been approved as meeting the research paper requirement for the Degree of
Master of Arts in Education.

Sharon E. Smaldino

December 11, 1996
Date Approved

[Signature]
Research Paper Reader

12/11/96
Date Approved

R. Muffoletto
[Signature]
Research Paper Reader

December 11, 1996
Date Approved

Greg P. Stefanich
[Signature]
Head, Department of Curriculum and Instruction

TABLE OF CONTENTS

Chapter	Page
I	Introduction.....1
	Problem Statement.....2
II	Literature Review6
	Definition of Terms.....6
	The Main Elements of Distance Education.....8
	The Essential Feature of Distance Teaching and Learning.....9
	Learner Characteristics and Instructor’s Role Via Interactive Television.....15
	Effective Teaching Strategies in Distance Education Via Interactive Television18
III	Conclusion.....28
	References.....30

CHAPTER 1

INTRODUCTION

Recent, advances in telecommunications technology have greatly expanded the possibilities for providing and accessing instruction. For example, satellite, and digital technologies facilitate electronic text transfer to move information quickly over long distances. Telecommunication technology systems can be linked together to form networks capable of simultaneously carrying voice, data, and video transmissions. Distance Education has become a growth industry in higher education (Wolcott, 1995).

Currently technology developments are bringing about many changes in the way institutions are providing educational opportunities for students (Carter, 1996). No longer is the college campus the only location where students may go to get an education opportunity (Meyers, 1989). Today, many students may now take individual courses or actually complete degree programs from remote locations.

What is distance education? What are the striking features of distance education? What are the key issues and concerns in distance education relating to curriculum development via interactive television? What role do teachers play in distance instruction via interactive television? What the learner's characteristics in distance learning? How does the instructor teach in order to make distance education using interactive television instruction more effective? What skills do

teachers need at a distance education via television? How shall teachers apply an instructional design model for systematic planning using interactive television? *The answers to these questions will help instructors avoid many of the major problems associated with the initiation of distance education via interactive television. By exploring these questions, it will be possible to understand the chief characteristics of distance education.*

Sections that follow deal with the characteristics of distance education via using interactive television. Special attention is given to the use of an instructional design model presented here which can help to make instruction more successful in promoting learning.

Problem Statement

Distance education presents a new way to teach and learn. Yet, in many ways, distance education is similar to teaching face-to-face. The experiences of teaching and learning at a distance are different because teacher and student participants are separated from one another, and their communication is mediated (Wolcott, 1995). When teaching at a distance the demands for detailed planning, and dealing with the loss amount of feedback become apparent. From the learner's viewpoint, issues which cause problems in succeeding with distance education fall into somewhat different categories: understanding expectations diminished opportunities for communication with the instructor and other

students, delay in feedback on work done, and little past experience with this type of instruction.

Add to this the reality that when distance education is delivered by television instruction, teachers are concerned about the quality of instruction and the need for interaction with students. Clearly, teachers generally notice there is less interaction when teaching distance classes than in face-to-face settings (Gilcher & Johnstare, 1988).

Loss of feedback is a common problem in distance learning. In a traditional teaching setting, faculty members often rely on nonverbal communications to contribute to the instruction, for example, eye contact, and a nod of the head, or body language. A group of students of the University of Northern participated in a small experimental project. One day they went to the site of origin on campus with the teacher. Another day they went to at a remote classroom, looking at the teacher on television. They said that the feeling was totally different. In the remote classroom, they relaxed, sipped a coke, and became a viewer, not a participant. In the site of origin, they had to pay attention to the lecture. Indeed, as Wellens indicates (cited in Wolcott, 1995) that in a distance education setting students feel psychological closeness and less isolated at origination site than students learning at a remote site. Wolcott said: “ Coincident with the reduction in interaction is the loss of feedback resulting primarily from the absence or reduction of nonverbal communication” (P.40).

Some teachers may feel frustration that is perhaps due mainly to a lack of sufficient knowledge of teaching techniques, learning and communication theories, and of the constraints of the medium of television. The instructor who is prepared to examine not only his or her content expertise but also his or her knowledge of teaching and learning theories can be assured that he or she will successfully meet the objective of assisting learners through dialogue to enhance their knowledge and understanding.

Questions often raised as: a). What is the essential feature for teaching and learning at a distance using interactive television? b). What is the changing role of teachers via interactive television? c). What are the desirable learner's characteristics? d). What are the key instructional techniques for distance teaching via interactive television? e). How will teachers apply an instructional design model for distance teaching using interactive television?

Laney (1996) reports that successful instruction using distance learning technology requires committed instructors who are willing to devote additional time to advance planning and materials preparation. Quality instruction at a distance is needed. The response to the needs of distance teaching has focused on an attainable goal derived from thoughtful syntheses of various aspects of instructional planning, and effective teaching techniques.

At the present time, by "networking" video, telephone and interactive audio, and computers; educators can design systems that deliver education and

training to students at a distance while simultaneously meeting individual needs (Ziglerell, 1984). Ziglerell (1984) describes some of the challenges of distance teaching and learning, and provides a framework and practical suggestions for thinking about one's options.

CHAPTER 2

LITERATURE REVIEW

Television has become a new instructional medium to facilitate students' learning in distance classrooms. This review of literature includes various definitions of distance education. It includes the key elements and essential features of distance education, learner characteristics and the changing roles of teachers in distance education via interactive television. Effective strategies in distance education using interactive television, and applying an instructional design model for distance education via interactive television are also discussed.

Definition of Terms

Distance education is not a new term. Many definitions have been offered in what has become extensive literature on distance education. Definitions can be very broad. As Wagner (cited in U. S. Congress, Office of Technology Assessment, 1989) indicated distance education can be broadly defined as the transmission of educational or instructional programming to geographically dispersed individuals and groups. Martin (1994) said: "Distance education is usually defined as any learning environment in which the learner and the teacher are physically separated" (P.50).

Holmberg (1989) and Keegan (1986) describes the chief characteristics of distance education as the separation of teacher and learner, and the influence of an educational organization in the planning and preparing of learning materials.

Holmberg (1989) states that distance education is based on pre-produced courses and non-contiguous communication between students and tutors. Similarly, Wagner (1993) focused on the “transmission of interactive educational or instructional programming to geographically dispersed education individuals and groups” (p. 29).

The definition of distance education can be specified. Moore (cited in Keegan, 1988) defined distance education as

“...the family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors, including those that in a contiguous situation would be performed in the learner’s presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices.”(P.6)

Otto Peters (Cited in Keegan, 1988) emphasized the role of the technology. Peter states:

Distance teaching/education is a method of imparting knowledge, skills and attitudes which is rationalized by the application of division of labor and organizational principles as well as by the extensive use of technical media, especially for the purpose of reproducing high quality teaching material which makes it possible to

instruct great numbers of students at the same time wherever they live. It is an industrialized form of teaching and learning. (P. 6)

Meyers (1989) refers to electronic distance education as a practice that originates at a site distant from that of the learners, and involves two-way communication by means of an interactive audio and video component. Using instructional television can help to connect the instructor with the student when physical face-to-face interaction is not possible.

By definition, interactive means those television technologies that permit viewer participation. Television will enable to students and teacher to see each other from different remote sites. The student has a microphone with a transmission button. Pushing the button permits the student to be viewed and heard on the camera.

The Main Elements of Distance Education

Keegan (1988), has combined the essential elements of many definitions of distance education. He has identified six main elements of these definitions, using them to compose a definition of distance education. Included are:

1. the separation of teacher and learner, which distinguishes it from face-to-face lecturing
2. the influence of an educational organization, which distinguishes it from private study

3. the use of technical media, usually print, to unite teacher and learner and carry the educational content
4. the provision of two-way communication, so that the student may benefit from or even initiate dialogue
5. the possibility of occasional meeting for both didactic and socialization purposes
6. the participation in an industrialized form of education which, if accepted, contains the genius of radical separation of distance education from other forms (P.30).

The Essential Feature of Distance Teaching and Learning

The U. S. Congress, Office of Technology Assessment (1989) analyzes various technological options, examines current development, and states that the curriculum of distance education has evolved as telecommunications and information technologies have advanced. Interactive instructional television emerged a developing form of distance learning in the 1960s.

Today's technology makes it possible to bring a teacher from any distance to the school electronically, sharing teachers among schools, once geographically or physically impossible, is now feasible. Telecommunication courses and interactive instructional television programs reach many learners in diverse settings. For example, distance learning programs are a reality in every state. The Iowa Communications Network was developed to meet the needs of students in

remote locations. The University of Northern Iowa is also using distance education to present instruction to students who would find such courses otherwise inaccessible.

Alaska is a state where it is nearly impossible in some areas for students and teachers to meet face-to-face. The state of Alaska network already uses distance technologies within its public schools systems (U. S. Congress, Office of Technology Assessment, 1989). According U. S. Congress, Office of Technology Assessment's (1989) survey of shortages in foreign language teaching, 38 percent of the States report that they now offer foreign language instruction via technology as one solution.

Since the 1980's, telecommunications technology in distance education has played an important role in distance education. A recent technological development, the computer combined with instructional television technologies has become an important focus of teaching and learning in distance education. The reason is that computer and television access are common and have offered various uses in our life. For example, when a computer is plugged into a video player and television, it facilitates students' learning in an audio/visual approach in distance education. Distance education can bring new resources to enrich the virtual classroom environment, create opportunities for team teaching, and open up the walls of the once-isolated classroom. However, there are significant differences between face-to-face instruction and distance learning.

LeFebvre & Coggins (1988) state that

An essential feature of distance education is that the teaching acts are separated in time and place from the learning acts. This requires an understanding of the learner, including especially his/ her entering knowledge and possible issues and concerns which might arise as individuals work through the educational program. (P. 88)

An understanding of the characteristics unique to the distance education environment using instructional television will aid the design and planning processes. The consideration of these characteristics during the design and planning stages will help the educator or instructional designer plan for unique opportunities which can be made available through distance education communication technology.

In distance learning via interactive television, an instructional network classroom provides for both audio and visual transmissions. For example, the technology provided includes the following equipment: three fixed cameras, microphones, a computer, and monitors, and a telephone. The television monitors will enable the instructors to view the off-site learners and also allow visual interaction between the sites. Teachers can use a special effects generator to choose the camera image to be transmitted to remote locations. Students in both inside and offside locations are able to see and hear the class (McDevitt, 1988). Because, teachers find that they are required to use an array of technology, they

must give more attention to advanced preparation, student interaction, visual materials, activities for independent study, and follow-up activities (LeFebvre & Coggins, 1988).

Mood (1995) wrote that most proponents of distance education now agree on a basic definition of the field, but still hold differing views on a number of its aspects. Mood (1995) describes this generally accepted definition to include four characteristics:

- Teacher and learner must be separated for most of the learning process.
- The course or program must be influenced or controlled by an organized educational institution.
- Some form of media must be used, both to overcome the physical separation of teacher and learner and to carry course content.
- Two-way communication in some form must be provided between teacher and learner. (P.20)

Interaction is a key element of any educational program. Teaching in a distance learning setting challenges teachers to rethink their interaction with students. Even in the traditional classroom interaction between teacher and student, good teachers are always looking for ways to involve their students. In distance learning, because of the physical separation between the teacher and

students, teachers need to establish ways for students in the remote classrooms to feel comfortable contacting them (Batey & Cowell, 1986).

As Willis's (1989) indicates, when the students are watching a teacher on a television set. They tend to experience less involvement, less ability to ask questions, and less overall enjoyment of the instruction, even though their performance may not be adversely affected. Therefore, distance programs must strive to provide as much interaction as possible.

Bate (cited in Keegan, 1993) indicated that the interactive ability of the learner to respond in some way to the teaching material and obtain comment or feedback on that response increases learning effectiveness. One interaction is between a student and a teacher or tutor, although interaction between students is also valuable. A second interaction is between the learner and the teaching material.

Group activities, asking and answering questions, and taking notes are ways of increasing interaction. Various devices such as push-to-talk microphones can facilitate the act of communicating. With less spontaneous interaction, teachers have a tendency to fill air time with lecture; pausing infrequently to ask or allow questions. students are inclined to react passively, reluctant to interrupt with questions (Martin, 1994).

Television teachers (teleteachers) are studied in the U.S. Congress, Office of Technology Assessment (1989) Case studies were identified that distance made

one-to-one communication more difficult. In television teaching systems that had no immediate visual feedback, teachers missed being able to read their students' visual cues and nonverbal behavior. These negative features created by the technology should not be minimized.

Bradshaw summarized (cited in U. S. Congress, Office of Technology Assessment, 1989) one of the main reasons many teachers chose teaching and remain in the position is the satisfaction they derive from working closely with individual students, listening to their problems, and observing and guiding them in their personal and social development as well as academic growth, both in and out of class.

Malan, Rigby & Glines (1991) stated that high numbers of responses to carefully crafted questions indicate effective communication and low numbers indicate a need for adjustment. Martin and Clemente (1990) indicate that feedback should be designed to take into account the type of objective being taught, whether the feedback is given during practice or after evaluation, and whether immediate feedback is appropriate for the task. Feedback should be used frequently and in varied formats for all distance courses.

Motivation is another important element in any distance education program. Holmberg (1989) is one of the most articulate spoke persons for two-way communication. Although he feels that self-motivated and self directed attributes are needed for the successful distance learning, he also strongly believes

that students must be supported in that motivation and direction. Active two-way communication between students and teacher is one effective way of encouraging this motivation. Similarly, Knowles (1984) contends, the provision of immediate feedback is one way to enhance motivation. Two-way communication with distant students also enhances motivation and keeps students interested and focused.

Learner's Characteristics and Instructor's Role Via Interactive Television

The student perspective is examined first as a reminder that distance education is essentially for the benefit of the student. Kember (1995) contends that students in distance education programs experience learning differently. The U.S. Congress, Office of Technology Assessment (1989) indicates that lacking both physical proximity and, sometimes a visual reference participants find it difficult to establish rapport with the teacher. Distance students may feel isolated and lack a sense of belonging to the larger group. This is because they are learning alone or in a small group (Laney, 1996). This is particularly true when, as Wolcott (1995) states that in some cases in addition to students distributed among a number of remote sites, there are some students physically present with the teacher in the site of origin.

The U.S. Congress, Office of Technology Assessment (1989) emphasized that:

The critical role of teachers in effective learning means that all must have training, preparation, and institutional support to successfully teach with technology....Few teachers have had either teacher education or field experiences that enable them to be effective distant teachers or successfully use technology in their own classroom. Although it is the technology that removes barriers and expands opportunities for learning, it is the teacher who teaches. In distance learning, teachers find that they are required to change their method of teaching and give more attention to advanced preparation, student interaction, visual materials, activities for independent study, and follow-up activities (P.20-21).

Distance education teachers need a variety of talents and abilities. Some teachers are the same as any teacher, some quite different, depending on the setting in which they work. Teachers may be course planners, instructional designers, technical experts, writers, or editors. All these skills are necessary in distance education and the degree of expertise with which each is accomplished will have a direct effect on students (Kember, 1995).

Teachers in rural schools, acting as classroom tutors for a course received from a distance site, are particularly likely to take on a tutor's role. Teachers in

such isolated locations will also find themselves more responsible for administration than are traditional teachers (Willis, 1994).

Much more than most classroom teachers, the teacher in distance education must be a motivated and a cheerleader. Students working in isolation, without the support of classmates, can be easily discouraged and feel they are failing or that the course content is beyond them (Kember, 1995).

Willis (1994) states a distance teacher's role often motivates students during or even before the first class. More than students in traditional settings, distance students need assistance in the process of the course. Many distance education teachers report that the experience has improved their teaching skills (U. S. Congress, Office of Technology Assessment, 1989). In distance education via interactive television, teachers have been forced to become more organized and challenged to become innovators. Kember (1995) note that distance teachers are counselors.

The Office of technology Assessment (1989) indicates teachers may be concerned about being replaced by technology. Again, teachers are aware that some schools may try to take educational shortcuts by buying into distance learning courses as a way of reducing staff. Teachers also worry about the quality of instruction students will receive if distance learning systems are not well planned. Teacher concerns must be factored into any planning for distance learning using instructional television.

In addition, the U.S. Congress, Office of technology Assessment (1989) presents a more realistic concern that teachers will be given distance learning responsibilities as an addition into regular teaching, with no allowance for the demands of this new role. For example, in the office of Technology Assessment case studies, teachers require more time to prepare for distance teaching via television lessons, and more time for follow-up with students. Despite the varying systems, most teachers strongly agreed that preparing lessons materials for distance teaching is much more time consuming than preparing lessons for regular teaching. "Typically, for preparing a daily lesson instructors using television technologies need from 38 minutes to 4 1/2 hours" (U. S. Congress, Office of technology Assessment, 1989, P. 99).

In summary, Collis, Even, & De Vires (cited in Schlosser & Anderson. 1993) predict that in order for distance teachers to be effective they will need to participate in preparation programs designed to assist them in acquiring the necessary knowledge and skills required to function successfully in today's interactive television distance education classrooms.

Effective Teaching Strategies in Distance Education Via Interactive Television

According to the U.S. Congress, Office of Technology Assessment study (1989):

"...students, teachers, course material and presentation, and interaction are all affected: distance learning creates a new context

within which the education process and student-teacher interaction take place....Old styles of teaching and learning may not be most appropriate or effective when mediated by telecommunications technologies....In designing distance courses or modules, teachers and instructional designers have had to find ways to restructure interactivity. (P.100)

Distance education programs require instruction that is more highly planned, organized, and delivered than traditional instruction (Martin, 1994).

Teacher understanding of how to design a course and of appropriate and effective communication skills for teaching at a distance is central to the success of the effort (Willis, 1994). Many teachers have asked for more training on how to use distance learning systems most effectively. For example, Moore (cited in U. S. Congress, Office of Technology Assessment, 1989) indicated that faculty members in the Lean Network requested preparation for distance teaching, identifying the need for assistance in such areas as:

- the amount of time needed to prepare and teach distance delivered courses.
- methods to establish and maintain effective communication with distant students.
- experiences of other faculty members.
- strategies for adding visual components to audio courses.

- strategies for increasing interaction both among students and between students and faculty.
- planning and management of organizational details involved in distance delivery.
- strategies to encourage group cohesion and student motivation.

(P.23)

In addition, Moore (1990) emphasized the specification of distance learning issues. Moore's study concludes that learners should have opportunities to respond to the teacher's question. Instruction should be presented in short segments. Communications presented by a person, or by technology, must be clear and specific. Instructors and site facilitators will need training on how to use the technology. Teachers have to work within the capabilities of the medium. Students need to be taught how to learn at a distance. Interaction, student involvement, providing feedback, and using overviews or advance organizers are crucial to effective learning. Students must be motivated throughout the lesson.

Unfortunately, many projects throw their teachers into distance teaching assignment with little preparation. In U.S. Congress, Office of Technology Assessment (1989) survey of seven case studies, nearly two-thirds of the teachers using technology surveyed (64 percent) had not received training prior to teaching with their respective distance learning systems.

Many teachers are natural actors. The classroom is their stage. For them, communicating in front of a camera may not be so different. However, teachers using technology must learn how to use the resources provided by the distance learning system creatively to communicate with their students, however far away they may be (U. S. Congress, Office of Technology, 1989).

Distance educators caution against replicating methods used in a face-to-face setting. There are some heuristic strategies of instructional design applicable to all types of distance education courses (Gibson, 1985; Jorgensen, 1986; Moore, 1990). Educators provided many of the same challenges and concerns as traditional teaching, as well as some teaching method.

All of the educational conditions required for a good distance education course are also required for any good education program. Gibson (cited in Martin, 1994) recommended that distance educators use the work of Gagne to produce the most effective teaching. Gibson has stated that both the conditions of learning and the events of instruction are important concepts that should be included in any distance learning program.

For developing an individual lesson or unit of instruction, many of the findings have particular applicability to distance education. It is important to gain the learners attention in a meaningful manner so that the learner will mentally prepare for what is about to be taught, such as stating the importance of the

lesson, asking a relevant question, or employing an appropriate visual (Gagne, Briggs, & Wager, 1988).

To better prepare the learner for using interactive television instruction, the teacher should provide questions for the students, and/or problems to work in advance. The teacher should ask the learner to apply a rule or concept to new examples. This event of instruction is provided to ask for a demonstration of skills that will allow the instructor to clarify and provide additional assistance if needed (Gagne, Briggs, and Wager, 1988).

Providing guidance is an important step in the instructional process because it helps the learner to confirm his or her understanding of rules or concepts, and for the teacher to understand where problems. Positive reinforcement should also be provided for correct responses to reinforce the learning. Feedback should be provided on the degree of accuracy of the performance in order to help the learner acquire a better understanding of the material being presented (Gagne, Briggs, & Wager, 1988).

While this instructional design model employs the principles of systematic planning, it is general in nature. Price and Repman (1995) suggest that the unique characteristics of distance education courses suggests the adaptation of this model to the unique environment of interactive instructional television course delivery.

Since distance education puts a major emphasis on the needs of the learner, it is essential to ensure that their various levels of experience, knowledge, and

ways of learning are acknowledged. The course must be structured with as much versatility as possible to allow for the capabilities and cognitive strategies manifest in the learner population. The instructional design (ID) model represents the framework that is used to guide the entire process of designing instructional systems (Heinich, Molenda, Russell, & Smaldino, 1996).

Gibson (1985) suggested that distance education teachers use the work of Gagne to make the most effective teaching. Gibson also recommended that teaching at a distance should be well-planned, including learning activities, strategies, and media. Teachers use the principle of instructional design construct a unit of instruction for a distance interactive television course at any remote site. They should be based on the system approach, including analyzing the students needs, planning the instructional strategies, providing the goals and objectives, and evaluating the results of the course (Price & Repman, 1995).

Jorgensen (1986) also applied the models of instructional design principles to develop distance education. He states, "...that most of the teleconferences I have participated in were intended to be learning experiences and suffered most from lack of instructional design" (p. 8).

There are many similarities in the preparation of materials for a distance education course. It may be not difficult for an instructor to identify the goal of the course of interactive television at a distance. Price and Repman (1995) state that goals are the broad statements of expected outcomes for the course.

Identification of the instructional goals is primarily the responsibility of the course instructor. The objectives of the course have to be clearly stated, the content carefully chosen, and sequenced, the evaluation strategies delineated. Once a content sequence has been chosen, then focus should be placed on what learners have to know, in order to achieve that objective. It is important that the material should be presented in a meaningful manner. Since distance education puts major emphasis on the needs of the learner, it is essential to ensure that their various levels of experience, knowledge, and ways of learning are acknowledged (Haughey, 1983).

There are many ways to identify learner characteristics in distance education. Price and Repman (1995) plan to gather information at the first class meeting on television. The four major categories of learner characteristics are cognitive, physiological, affective, and social. We should use these to try to make assignments relevant to the student's interests, level of knowledge, and learning style. Examples present should be taken from a context the student could identify with. The presentation should be lively and concise to inspire the student's interest.

The basic instructional plan is the syllabus, which is prepared first. The framework of each lesson plan is established in the content analysis and writing of performance objectives for each lesson. Price and Repman (1993) note that a detailed lesson plan should include such information as: the level of knowledge of

the learners, the course objectives, the relevant activities, materials and media. The instructional television staff will need to know what is expected and the materials should be produced in advance.

Cyrs & Smith (cited in Price & Repman, 1995) state that video demonstrations, and commercial media can be used to present the content in a manner which is more likely to maintain the students attention and help them understand and retain the information. In a distance interactive television class, the instructor is likely to roam around, and to start discussions in which the students are major speakers. The instructor guides the dialogue and encourages student involvement.

Most television teachers were concerned with these questions: Are students following my arguments? Do the students talk casually during the teacher's presentation? Am I going too fast or too slow? Indeed, do the students switch the teacher off actually as well as metaphorically? The instructor, therefore has to plan his or her presentation in such a way that he or she can obtain some estimate of the students' understanding and reactions.

Helmberg (cited in Haughey, 1983) refers to distance learning as a form of "mediated dialogue." This term also has some applicability to the situation in distance teaching via television. Haughey (1983) argues that the interjection of technology changes the communication process in various ways. For example, when students pressed the microphone to talk, they were very serious, and as apt

to smile as in a face-to-face setting. Haughey says that interaction were different in kind. In a distance teaching via interactive television situation, the instructor dealt almost entirely with administrative or course matters. Sometimes the interactions were student controlled and these be distracting from the teacher's point of view. Using the medium of television further emphasizes that the generation of student feedback during interactive teaching sessions has to be planned for as an integral part of the instructional strategy. Strategies need to be developed to keep the students on the topic, but to encourage them to speak as well.

Price and Repman (1995) emphasize that modifications to the lesson plans are made as the course progresses based on feedback from the students. Material that was not mastered may be clarified by presenting it in another manner. Sometimes, new or more timely topics are added. Student feedback is to ensure that the instructor is teaching appropriately. Students want assignments to form a basis for detailed and continued communication. The instructor needs feedback while teaching to keep students involved.

Summative evaluation comes at the end or "summation" of the learning unit and is usually a major task (Clark, 1983). The evaluation helps in grading or certifying major learning units. Price and Repman (1995) suggest that the course planning team review and evaluate the data and make recommendations for future courses.

Willis (1989) stated that technical problems will occur when using technology. So Martin (1994) indicates that the contingency plans must be prepared in case there are equipment failures. Outlines of the content should be provided. Opportunities for students to interact with the teacher, other students, and the instructional materials should be provided.

CHAPTER 3

CONCLUSION

Teachers will see a consensus in the belief that distance teaching using interactive television is different from traditional education. Because the teacher can not see the students all of the time, as he or she would be able to in a conventional classroom, it becomes much more important to implement the following changes. For the people involved, teachers or students, distance learning via interactive television requires some new adaptation. For the students, it necessitates great self motivation, a better understanding of the importance of education, and a sense of responsibility for learning. Understanding the need for such changes is the first step in the distance instructional process.

As Thompson, Simonson, and Hargrave (1992) point out, one of the most important factors appears to be adapting instruction to not only meet the needs of learners with different learning styles, but also to take advantage of the characteristics of the instructional content as well as the strengths and limitations of distance education.

Effective distance education courses rely on the principles of good instruction to make them effective, not on the technologies used to deliver the instruction (Wagner, 1993). Instructors who include an educational psychology emphasis in their interaction television courses may wish to teach the specifics of problem of learning and teaching in the context of distance education. Teachers

should pay special attention to designing instruction that incorporates feedback and active learning, interactive learning activities and strategies, and motivation (Gagne, Briggs & Wager 1985). Instructors who teach at distance via interactive television relying on the instructional design model presented by Price and Repman (1995) can demonstrate important concepts using the instructional and personnel characteristics required for an effective distance education course.

However, teachers may discover the importance of the interactive television course at a distance on their own. Price and Repman (1995) state that the most effective way for most instructors to teach at a distance is through the use of an instructional design principle. The importance of techniques that allow students to interact with students at other sites as well as with the instructor seems to be highly related to student needs with interactive television course at distance education. The use of the instructional design model applied here can help to make instruction more successful to prompt learning (Price & Repman, 1995).

REFERENCES

- Batey, A., & Cowell, R. N. (1986). Distance education: An overview. Portland, OR: Northwest Regional Educational Laboratory. (ERIC Document Reproduction Service No. ED 278190)
- Carter, A. (1996). Essential question interactive distance education: An administrators' guide. International Journal of Instructional Media, 23,(2), 123-129.
- Clark, R. E. (1983). Reconsidering the research on learning from media. Review of Educational Research, 53,(4), 445-59.
- Gagne, R. M., Briggs, L. J., & Wager, W. W. (1988). Principles of instructional design (3rd Edition). Chicago, IL: Holt, Rinehart and Winston.
- Gibson, T. L. (1985). Heuristics of instructional design for distance education department of continuing and vocational education, Madison, WI: University of Wisconsin-Extension. (ERIC Document Reproduction Service No. ED 307847).
- Gilcher, K. W., & Johnstare, S. (1988). A critical review of the use of audiographic conferencing systems by selected educational institutions. College Park, MD: University of Maryland and the Annenberg/CPB Project. (ERIC Document Reproduction Service No. ED 313 003)
- Haughey, M. (1983). Teaching and learning via satellite. Victoria, BC: University of Victoria. (ERIC Document Reproduction Service No. ED 235 791)

Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (1996). Instructional media and technologies for learning(5th ed.). Englewood Cliffs, N J : Merrill.

Holmberg, B. (1989). Theory and practice of distance education. London: Routledge.

Jorgensen, E. S. (1986). Doing right by design. Keynote Address, Distance II Conference: Improving teaching at a distance, Madison, WI: Wisconsin University. (ERIC Document Reproduction Service No. ED 307 848)

Keegan, D. (1986). The foundations of distance education. London: Croom Helm.

Keegan, D. (1988). On defining distance education: Introduction. In D. Sewart, D. Keegan, & B. Holmberg (Eds.), Distance education: International Perspectives (pp. 6-33). New York: Routledge.

Keegan, D. (1993). Theoretical principles of distance education. New York: Routledge.

Kember, D. (1995). Open learning course for adults: A model of student progress. Englewood Cliffs, NJ: Educational Technology Publications.

Knowles, M. S. (1984). Adult learner: A neglected species (3rd ed.). Houston, TX:Gulf.

Laney, J. D. (1996). Going the distance effective instruction using distance learning technology. Educational Technology, 36,(2), 51-54.

LeFebvre, J. E., & Coggins, C. C. (1988). Changing roles of teachers and adult learners in a non-credit distance education format, Report of the annual conference on teaching at a distance (Madison, WI.) (ERIC Document Reproduction Service No. ED 307851).

Malan, R. F., Rigby, D. S., & Glines, L. J. (1991). Support services for the independence study student. In Watkins, B. L. & Wright, S. J. (Eds.), The foundations of American distance education. (pp. 159-172). Dubuque, IA: Kendall/Hunt.

Martin, B. L., & Clemente, R. (1990). Instructional systems design and public schools. Educational Technology Research and Development, 38,(2), 61-75.

Martin, B. L. (1994). Using distance education to teach instructional design to preservice teachers. Educational Technology, 34,(3), 49-55.

McDevitt, M. A. (1988). Using two-way television in elementary and secondary schools. Report of the annual conference on teaching at a distance (Madison, WI.) (ERIC Document Reproduction Service No. ED 307851).

Meyers, R. A. (1989). Encyclopedia of telecommunications. San Diego, CA: Academic Press.

Mood, T. A. (1995). Distance education: An annotated bibliography. Englewood, CO: Libraries Unlimited, Inc.

Moore, M. G. (1990). Contemporary issues in American distance education. Oxford, NY: Pergamon press.

Price, R. V., & Repman, J. (1995). Instructional design for college-level course using interactive television. Journal of Educational Technology Systems, 23,(3), 251-263.

Schlosser, C., & Anderson, M. (1993). Distance education review of the literature. Ames, IA: Research Institute for Studies in Education, College of Education, Iowa State University.

Thompson, A. D., Simonson, M.R., & Hargrave, C. P. (1992). Educational technology: A review of the research. Washington, DC.: Association for Educational Communications and Technology.

U. S. Congress, Office of Technology Assessment, (1989). Linking for learning: A new course for education. Washington, DC: Congress of the United States. (ERIC Document Reproduction Service No. ED 310765).

Wagner, E. D. (1993). Variables affecting distance education program success. Educational Technology, 33,(4), 28-32.

Willis, B. (1989). Distance-delivered instruction: Making it work. Educational Technology, 29,(7), 46-47.

Willis, B. (Ed.) (1994). Distance education: Strategies and tools. Englewood Cliffs, NJ: Educational Technology Publications.

Wolcott, L. L. (1995). The distance teacher as reflective practitioner.
Educational Technology, 35,(1), 39-43.

Ziggerell, J. (1984). Distance education: An information age Approach to adult education. (Information Series No. 283). Clearinghouse on Adult, Career, and vocational education, The national center for research in vocational education.