ATHABASCA UNIVERSITY

AUDIO TELECONFERENCING: EXAMINATION OF INSTRUCTIONAL
STRATEGIES FOR TEACHERS OF ADULT LEARNERS

BY

DEBRA WALKER
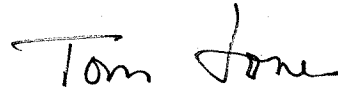
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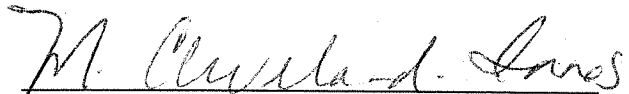
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The undersigned certify that they have read and recommend to the Athabasca

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TELECONFERENCING: EXAMINATION OF INSTRUCTIONAL STRATEGIES FOR

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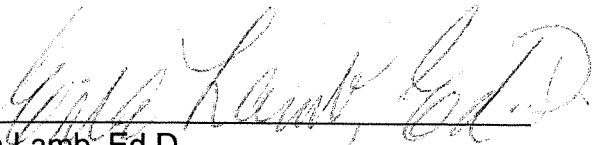requirements for the degree of MASTER OF DISTANCE EDUCATION.

_____
Tom Jones, Ph.D.
Supervisor

_____
Martha Cleveland-Innes, Ph.D.
Committee Member

_____
Eila Lamb, Ed.D.
Committee Member

Date: April, 2004

DEDICATION

The most important support to me has been my family, so I would like to dedicate my thesis to them. To my mother Catherine Scalzo, whose never-ending faith and encouragement kept me going many times when I thought I never could. In memory of my father, Benedict Scalzo, who always encouraged me to continue my education. I used to watch, as he would prepare for the training seminars he would do in the Northern communities. He instilled in me a sense of pride in how you prepared for what you taught, and the concept that learning could be fun. To my sister Maureen Scalzo and my nephew Jonathan Ciosek who especially supported me during the time that I did go back to school full-time. Finally, to my daughter, Ashley Walker, who from the moment she was born inspired me to always do my best and never give up on my dreams.

You are the wind beneath my wings.

ABSTRACT

This thesis examines instructional strategies available to teachers of students enrolled in college-level audio teleconferencing courses delivered by distance education. Using the techniques of qualitative research, this case study design explored student lived-experiences in an audio teleconferencing classroom. Using a questionnaire, focus groups, and personal interviews data were gathered, examined and analyzed. The findings were discussed under four categories: learning strategies, teaching strategies, positive experiences and negative experiences. Five clustered instructional strategy themes emerged as students expressed a need for visual stimulation, interaction, and effective communication, as well as competent teachers and operational technology. Practical implications of these results suggested ways in which adult educators can use audio teleconferencing technology effectively to enhance the learning experience for their students.

ACKNOWLEDGEMENTS

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CHAPTER I
INTRODUCTION

<u>The Purpose</u>

The purpose of this study is to examine the instructional strategies available for teachers of adult students enrolled in audio teleconferencing courses at a community college. As such, the results of this research will enable instructors to create a virtual classroom that will support the adult learner and enhance student satisfaction with distance education and audio teleconferencing.

Most colleges and universities today are attempting to stay ahead in the technology race by looking to develop and establish distance education programs that embrace higher-end video and computer systems. This trend towards the use of the newer technologies has left the lower-end delivery systems behind. Audio teleconferencing for example, "has become the forgotten 'voice' among distance learning technologies" (Hardy & Olcott, Jr., 1995, p. 44). The newer technologies do not necessarily guarantee greater access or support for the learner (Bates, 1997). Hardy and Olcott (1995) suggest that these new generation delivery systems are often highly produced, costly and ineffective in that they lack synchronous communication with their students. In spite of the move to the newer technologies, audio teleconferencing does remain "a viable and cost-effective alternative for most colleges and universities using distance education" (Burge & Howard, 1990, p. 3). It is important therefore for instructors and educational administrators alike to recognize the potential of audio teleconferencing to deliver a high-quality, interactive environment that can meet the learning needs of distance education students.

While recognizing its potential, we need to also assess its shortfalls. Hardy and Olcott (1995) present research that suggests students who participate in distance learning programs perform at academic levels equal to traditional campus learners. However, they suggest that these performance studies are offset by research that identifies dissatisfaction of faculty and students regarding "interaction, technical coordination, support services, and training" (p.45). Student satisfaction in distance education, as in any other classroom, is critical to the success of the course because it influences other variables. For example, student satisfaction would result in lower attrition rates, enrollment in other courses, referrals to other students, and a greater commitment to the program (Biner, et al., 1997).

Understanding the learner and the approaches and strategies, which he/she uses, is essential to student satisfaction and successful programs. Yet, few studies consider adult learner preferences with respect to effective instructional practices when delivering a course through distance education (Gee, 1990; Diaz et al., 1999; Yuliang & Ginther, 1999).

The Learner

Simpson (2000) asks the question, "What skills, personal qualities and values does anyone need to become a successful student in open and distance learning? (p. 10). To answer this question the learner needs to be examined. Different developmental stages of life depict different learning abilities. Recognizing the characteristics of adult learners, understanding their learning needs, and just what influences them to participate in the learning experience will help educators support and improve the process.

Educational literature addresses different characteristics of the adult distance education learner. It is however possible to identify some commonalities. Rogers and Cranton (1989, as cited in Qureshi, et al., 2002) suggest there are seven characteristics that are common to many distance learners. Adult students by definition are mature, and express a value of learning by the fact that they are enrolled in the life long learning process. These learners are experienced, and come to the classroom with set intentions; they are motivated. Adult students frequently prefer to take a more active role in their learning. The students are realistic in the sense that they have expectations about the education itself. Employment, families, social lives create competing interests or commitments for them. Finally, they have set patterns of learning that they have developed or are naturally acquired.

Neeley et al. (1998) suggest that because of their many commitments adult distance education students are also adaptable. They propose that there are costs to enrolling in distance education courses for students. These costs are not just measured in dollars but in time and work as well. To offset these costs, students want flexibility of course times and materials. So, while balancing work, family and school, these students actually prefer the distance format to the more inflexible traditional classroom.

However, to be an effective teacher, it is important to understand not only the characteristics of the learner but also that students learn information in different ways.

<u>The Strategies</u>

Can adult students compensate when the instructional medium doesn't match their individual learning style? McKeachie (1995) suggests, "learning styles can become learning strategies" (p. 2).

"The important thing to remember is that what are

called "learning styles" are preferences and habits

of learning that have been learned, and that everyone

is capable of going beyond the particular "style"

preferred at the time. Regardless of their learning

"styles", students can learn strategies that enable

them to be effective when taught by methods that

are not compatible with their preferred "style" (p. 2).

Adult educators need to focus on choosing instructional strategies that will engage their learners in an active learning experience. Hardy and Olcott (1995) suggest that audio teleconferencing is distinctively suited to facilitating the type of interaction that distance education students want. It can provide a balance between the adult's need for autonomy and his/her reliance on support, guidance or interaction from the teacher. The role of the instructor in audio teleconferencing therefore is to create a learner-centered environment that is both responsive and anticipatory to the majority of adult needs (Moore, 1973).

Many strategies used in a traditional, face-to-face environment can be utilized in a live, audio teleconferencing course to help create this environment. Examples of effective instructional techniques would include lectures, guest lecturers, group work, handouts, videos, assignments, presentations, as well as in-class tests and exams.

Miller (1996) suggests that technology can further improve the presentation of knowledge to students and facilitate learning. Electronic mail can encourage participation in discussions or class activities, while the World Wide Web can give students access to information resources that are learner directed not just teacher directed. Both technologies tear down geographic barriers that previously had isolated students, and had reduced their access to information, other students, as well as the instructor.

Thinking about different learning styles/preferences can direct adult educators to use different instructional strategies in the audio teleconferencing classroom.

The Problem

Our community college in Northwestern Ontario offers distance education courses using many different technologies: print, audio- and video- teleconferencing, and computer conferencing. As not all distance education sites can access 2-way video teleconferencing, and computer online courses are as expensive to develop as print –based courses, our college uses audio teleconferencing most often to provide the most effective and cost efficient mode of delivering distance education. Since it is not always possible to match delivery methods with student preferences, it becomes a challenge to accommodate those learning styles and develop the appropriate strategies to help them in the virtual classroom. Understanding what type of approaches the learner takes and the context in which they learn is therefore essential to a satisfied distance education learning experience.

<u>Research Questions</u>

      This thesis will examine the experience of adult learners enrolled in audio teleconferencing courses at a post-secondary educational institution in Northwestern Ontario.

1.   What perceptions do our students have of audio teleconferencing instructional strategies?

2.   What types of instructional strategies can we develop to help students adjust to the audio teleconferencing classroom and create a positive, equivalent learning experience?

3.   How can we foster and support deep learning in an audio teleconferencing environment?

The answers to these questions will help educators facilitate learning in adult participants enrolled in audio teleconferencing courses. They will also lay the foundation for future research to improve learning effectiveness for adults taking distance education courses.

<u>Limitations</u>

      Since this study will involve students of relatively small sample sizes enrolled in chosen courses, the findings can't be generalized beyond the sample group. However, they do have the potential for 'reader or user generalizibility' (as discussed in Chapter V) or to raise questions for future exploratory research studies.

One of the limitations in using survey/questionnaire tools to gather data is the willingness of the subjects to respond to the inquiry, respond in a timely manner and to respond truthfully.

Delimitations

Six teachers agreed to allow their classes to take part in the study. Only twenty-one students volunteered to take part in the initial presentation phase (Phase I) of the study. A "Blackboard" (online discussion board) focus group was created to provide an opportunity for all one hundred and eighteen students in all six courses (including the eighteen subjects from phase one) to answer three questions in an attempt to gather more data. Students were able to post comments in Blackboard by name or anonymously. This second phase was built into the study for two reasons: first to increase the number of students in an already small sample size, and secondly to provide a means for asking more open-ended questions in the hope of obtaining greater perspectives.

In order to encourage students to take part in the study, the researcher made it clear to the students that anonymity of questionnaires, focus groups and in-depth interviews would be maintained, involvement in the study would not be mandatory, and no marks would be given or taken away for their participation.

Definition of Terms

For the purpose of this thesis the following terms warrant definition:

Andragogy: The teaching of adults.

Audio teleconference: A teleconference involving transmission of voices only.

Audio graphic teleconference: A teleconference involving transmission of voice plus a graphic display on a computer screen or overhead tablet.

Blackboard: Blackboard is a registered trade name for Blackboard Inc. It is an e-Learning software platform used at Confederation College, which provides an online discussion board, a site for posting documents, grades and class announcements, as well as links to chosen websites.

Case study: An in-depth analysis and systematic description of a group of similar students to promote understanding of educational practices.

Case study design: Intensive exploration of a single unit of study, such as a group of students.

Cognitive styles: Cognitive styles refer to the favored or characteristic way in which an individual processes information.

Deep learning: Focus on meaning.

Learner-centered education: Education that focuses on the needs of the learner. Direction flows from the bottom-up (learner), rather than top-down (instructor).

Learning styles: Learning styles relate more to the practical or specific application aspect of acquiring knowledge.

Surface learning: Focus on recognition.

Telewriter: audio-graphic enhancement of audio teleconferencing. It is comparable to an electronic blackboard. Images produced by a light pen on a tablet onto a television screen.

Virtual classroom: The virtual classroom allows students and/or instructors in remote communities to participate in a learning environment connected by technology that is audio, video or computer mediated.

Summary

       The purpose of this study is to examine the instructional strategies available for teachers of adult students enrolled in audio teleconferencing courses at a community college. Understanding what types of strategies an adult student prefers or finds helpful in an audio teleconferencing experience could help distance educators determine what instructional tools/ resources would work best in the distance classroom for their individual learners. An awareness of what the adult learner brings to the virtual desk can help the instructor/ facilitator provide for those individual differences, enhance the distance education experience for each participant, and increase student satisfaction. The next chapter presents a review of current literature related to audio teleconferencing technology and instructional strategies for the adult learner.

CHAPTER II
REVIEW OF RELATED LITERATURE

Distance Education

      Distance education has been defined from many different perspectives in the

past few years. Globalization, changes in our society and technology are challenging

these traditional definitions. Simonson et al. (2003) suggest that the characteristics

of distance education can provide a basis for a more contemporary vision.

Identifying four components of distance education, they define it as "institution-

based, formal education, where the learning group is separated, and where

interactive telecommunications systems are used to connect learners, resources,

and instructors" (p. 28).

      The need for the inclusion of distance education programs into an educational

institution's mandate is often related to its expanded mission to meet the learning

needs of off-campus adult students (Offerman, 1987, as cited in Hardy and Olcott

Jr., 1995). In an attempt to meet this goal, colleges and universities have had to

attend to the challenge and provide telecommunications-based instruction while

maintaining academic standards in a quality-driven, cost-effective way. Some people

believe that the best response to this challenge is in the use of the newer

technologies (Paul & Brindley, 1996). However, while Tony Bates (1997) suggests

that the newer technologies (computer-based) do present a promise of greater

interaction, enhanced opportunities, and global access to courses, he warns us "not

to get carried away by the hype" (p. 93).

<u>A Framework of Delivery Systems</u>

What then are the options? Well, institutions can and do choose from a number of alternative delivery systems. Garrison (1985) suggested, "distance education can be structured into three generations of technological innovation - correspondence, teleconferencing and computers" (p. 235). His taxonomy of educational technologies and media identified shifts in the delivery of distance education courses over time, and provides a framework for looking at distance learning. Each of these forms facilitates two-way communication as opposed to the 'ancillary media' such as print materials and audiocassettes that support one-way communication only.

<u>Audio Teleconferencing</u>

Garrison (1990) suggests there is a growing recognition for the importance of two-way communication in the distance educational process. He proposes audio teleconferencing provides effective support of the educational transaction because it has the unique ability to maintain teacher-student interaction and control over the learning process, as well as provide learner-learner interaction at a distance.

Garrison (1989) identifies some of the defining advantages of audio teleconferencing. First, audio teleconferencing is a group instruction method. This makes it easier for both students and teachers to identify and be comfortable with it. Secondly, students who are not satisfied with an independent study method adapt more quickly in this two-way communication media. A third advantage of audio teleconferencing is its technological simplicity. Its accessibility through a telephone system makes it easy and familiar for teachers and students to use.

From an institutional perspective, all these advantages make audio teleconferencing a practical and cost-effective alternative for most colleges and universities using distance education. Garrison (1990) suggests a further benefit of teleconferencing is the interaction opportunities it provides. He suggests that the "vast majority of teleconferencing is directed toward adult learners" (p.19).

The Adult

While not the first to use the term, Malcolm Knowles popularized the concept of andragogy, in an attempt to differentiate the way adults learn from the way children learn. His theory rests on two principles of learning: the learner constructs knowledge; and, it is an interactive process that involves "interpretation, integration and transformation of one's experiential world" (Pratt, 1993, pp 16-17). From this theory base have come certain procedures and practices that make up a distinguishing form of education - one that facilitates learning rather than directs it. Andragogy encourages instructors to focus more on the process of education using strategies such as presentations, case studies, journals, or essays. Encouraging the learner to identify resources and then develop strategies to use those resources in achieving their objectives puts the individual at the center of education, and supports this belief of learner-centered education.

Pratt (1993) suggests however that while andragogy gives adult educators an understanding of adults as learners, it does little to clarify our understanding of the process of learning.

Technology and the Learning Process

Garrison's above-mentioned 1985 model of three generations of distance education provides a framework for examining the relationship between distance education and learning styles.

James and Gardner (1995) suggest that the way an individual learner reacts to the overall learning environment constructs his/her own learning style. They suggest a model of learning styles that has three separate but interrelated dimensions: perceptual, cognitive and the affective mode. The perceptual dimension is defined as how the learner attends to information/stimuli, such as speech, movement or any of the five senses. The cognitive component represents the learner's usual way of processing the information. Regardless of the terms used by various researchers to discuss this mode, such as global versus analytical or right versus left-brain, they "can be used interchangeably as opposite ends of the same continuum" (Ehrman, 1990, as cited in James and Gardner, 1995). One end of the continuum would portray a learner, who prefers more general, simultaneous, and deductive processes, while the other end of the scale would prefer detailed, step-by-step, abstract and inductive processes. Both dimensions are essential to the learner. The affective dimension of learning style relates to the emotion and value placed on attending to information. While not directly observable, it is often inferred from how the learner interacts with the environment. For example, in the social setting, some students prefer to learn with a partner, alone, or in a group (James & Gardner, 1995).

In distance education it is important that teachers think about how interaction will occur, and how to prepare experiences that will "promote effective and efficient learning" (Simonson, et. al., 2003).

<u>Attending to Learning Styles in Distance Education</u>

While individual learners have their own preferred ways of perceiving, organizing and retaining information, they will approach each new learning task in a way that is most comfortable for them. Verduin and Clark (1991) suggest "those designing distance education should, moreover, pay attention to differences among adults – in individual learning styles, preferences for acquiring new knowledge and skills, and levels of maturity or ways of responding to new learning situations" (p. 32). Adult educators need to consider different learning styles, and design strategies that encompass those modes of learning in the audio teleconferencing environment. For example, they may offer choices in an assignment such as writing an essay, making a presentation or being part of a group project. Recognizing that students differ in their learning styles will help educators realize that their strategies/ approaches to learning in the audio teleconferencing classroom can change from class to class, experience to experience, learner to learner.

Instructors should encourage deep, rather than surface, approaches to learning in their virtual classrooms. Deep and surface approaches to study are derived from the work of Marton and Saljo (1976) - "deep processors" versus "surface processors". The student strives to gain a personal understanding when using a deep approach to learning, while a surface approach is an attempt to avoid failure, or remember the information should they be asked questions about it (Marton & Saljo, 1984). As educators, we need to encourage our students to adopt a deep

approach to learning by developing instructional resources/strategies that creates an interactive learning environment for them, gives choices, discusses expectations, facilitates rather than directs, and be accessible when needed.

James and Gardner (1995) present examples of how educators can incorporate a variety of elements that speak to the three dimensions in their model of learning styles. For example, they suggest, "it is easy to add visual material (drawing, graphs, or pictures) to any printed materials" in order to attend to the perceptual modality (p. 28). Providing print-based materials and small group discussions can enhance the auditory modality. Audio, visual (pictures and print), discussion, or hands-on elements can address the perceptual mode of learning. Providing opportunities for active participation in audio teleconferences among different sites, and chunking content into small units for presentation and delivery attends to the cognitive aspect of learning (James & Gardner, 1995). Dwyer (1990) suggests that instructional strategies should be designed that address various individual learning styles "so that [the activities] can be efficiently utilized by broad bands of learners possessing similar learner-related characteristics" (p. 222).

<u>Summary</u>

Knowledge of adult learning styles can only help adult educators support our students' approaches to learning in the virtual classroom. The opportunities for creating and encouraging such instructional strategies in distance education are many. Hardy and Olcott, Jr. (1995) suggest, "many activities normally conducted in a traditional, lecture-based classroom can be used in an audio conference course" (p.46). The challenge is to determine which instructional strategies can be used in audio teleconferencing to meet the needs of the adult learner.

CHAPTER III
METHODOLOGY

The purpose of this chapter is to outline the research design. The chapter identifies the methodological approach, and provides an overview of the study. The setting and sample is described. The procedures, which were used for the collection and analysis of the data, are discussed.

Approach

Qualitative research is about process rather than outcome. The research itself is interested in how people make sense of their lives and the meaning they give to their lived experiences. It is descriptive in nature in that the researcher attempts to gain understanding through the words gathered, and then builds concepts from that data (Merriam, 1988 as cited in Creswell, 1998). The findings are not generalized in the same way as those from quantitative studies. Understanding the meanings of the phenomenon gives insights that can be applied more generally.

Using the techniques of qualitative research, this is a case study design that chose to explore three research questions focusing on instructional strategies for adult learners. Garrison (1990) suggests, "little attention has been given to the teaching/learning process and to understanding the essential nature of an educational learning experience" (p. 14). The perceptions of students who are living that educational learning experience can provide insights for adult educators. This study's design was established to enable the researcher to consider the audio teleconferencing experience from the student's perspective in an attempt to examine and identify instructional strategies available for teachers of adult learners.

Structure of the Study

The study was divided into three phases. Phase I involved students being invited to present a topic in class first by audio teleconferencing, and then repeating the presentation face-to-face at their site. After making their presentations, students were asked to complete a Presentation Questionnaire. The purpose of this phase was to gather data related to research question number three "How can we foster and support deep learning in an audio teleconferencing environment?"

The second Phase attempted to increase the sample size and involved students being invited to post comments on a Blackboard discussion board. Students were asked three questions about instructional strategies and positive and negative experiences with audio teleconferencing. The purpose of this phase was to gather comments related to research question number two "What types of instructional strategies can we develop to help students adjust to the audio teleconferencing classroom and create a positive, equivalent learning experience?"

After all data were reviewed, the researcher developed a third phase to obtain a broader picture of students' perceptions. Two students were randomly chosen to participate individually in an in-depth interview. Questions were semi-structured and conversational. The purpose of this phase was to gather further comments related to research question number two "What types of strategies can we develop to help students adjust to the audio teleconferencing classroom and create a positive, equivalent learning experience?"

All three phases were designed to gather data on research question number one "What perceptions do our students have of audio teleconferencing instructional

strategies?" Each phase will be described in greater detail in the 'Procedure' and 'Instrumentation' sections of this chapter.

<u>Participants</u>

A convenience sample of students enrolled in part-time day and evening audio teleconference distance education courses at a community college in Northwestern Ontario became the potential subjects.

Six teachers gave consent for their students to participate in Phase I of this study. One class dropped out after the initial announcement in class. Twenty-one students in five classes submitted signed consent forms. Nine completed questionnaires were returned to the researcher. Of the nine respondents, there were six that had taken an audio teleconferencing class before and three who had not. Among the group of respondents there were 5 females and 4 males. Students ranged in age from 19 to 49 years, with 5 identifying themselves in the 19-29 year range, 2 in the 30-39 year range, and 2 in the 40-49 year range. Geographically, 2 of the students lived in Central Ontario, 3 in Thunder Bay and the remaining 4 students called in from regional audio teleconference sites in Northwestern Ontario.

In Phase II of this study, 118 students in six classes were invited to post comments on discussion boards set up on the college Blackboard. Fifteen students participated and posted comments on the three questions asked. No demographic information was obtained in this phase.

<u>Procedure</u>

The proposal for this study was submitted and approved by the Athabasca University Research Ethics Board to ensure protection of the human subjects involved in this research. Letters were sent to the Academic Directors at

Confederation College seeking their support for the study, and their willingness to allow access to the distance education courses and students. Formal letters of support were received from both (see Appendix A).

Teachers of day and evening part-time audio teleconferencing courses at Confederation College were approached and gave consent for the students in their classes to take part in this research project (see Appendix B). A written invitation to take part in the study was then distributed to each student in the class by the Distance Education Department at the college (see Appendix C). In addition, all students were informed of the study by an announcement during one of their first audio teleconferencing classes. Students expressing interest in Phase I of the study were asked to complete the "Information" and Consent to Participate" form by mail in prepaid return envelopes. All students were encouraged to call the researcher if they had any questions or concerns about the study. It was clearly communicated to all students that participation in the study was strictly a voluntary activity for which no marks would be given or taken away.

Once the researcher received the signed consent forms, a research package (see Appendix D) was sent to each individual's home address. The package consisted of a "Thank You" letter, a "How to Give an Awesome Presentation" handout, and a handout entitled "The Principles of Teaching and Learning". Students were encouraged to read the handouts and use them as 'teaching tips' to guide and help them with giving their presentations on-line. A question on the Presentation Questionnaire asked for students' opinion on how helpful the tools were. The "Student Presentation Questionnaire" (see Appendix E) and a stamped return

envelope was included in the package. Students were instructed not to put their return address on this envelope in order to maintain confidentiality.

During the remainder of the semester students, who volunteered for the study, were expected to book a time with their instructor in which to make their presentations (by audio teleconference and then face-to-face).

Eight weeks into the semester the students who had completed their presentations were reminded in class by their instructors to complete and send in questionnaires. At this time a memo that described the second phase of the research study was sent to all students enrolled in a participating audio teleconferencing class. This memo announced the setting up of "Blackboard Focus Groups" (see Appendix F). All students enrolled in a part-time course at the college had access to the Blackboard website. Six groups had to be established as each class had to post on their own class Blackboard site. Only the students in the class and the researcher had access to the posting site. Students were encouraged to share their thoughts about their audio teleconferencing experiences. A handout that provided posting instructions entitled "Getting Started with Blackboard" (see Appendix E) accompanied the announcement.

Twelve weeks into the semester a reminder to access Blackboard was mailed to the home address of all students enrolled in a participating audio teleconferencing class (see Appendix G). The researcher went on-line in the audio teleconferencing classrooms to remind students who had completed their presentations to submit completed questionnaires.

Two students were randomly selected for follow-up interviews with the researcher after the questionnaire (Phase I) and discussion board data (Phase II) had been analyzed. The interview questions were guided by themes and questions arising from the review of the data, specifically asking for feedback on perceptions, strategies and technologies that would enhance audio teleconferencing.

Instrumentation

Two structured self-report instruments were developed for use in this study. A teaching colleague and a small group of students (three) from a previous semester reviewed a draft of both instruments prior to their use. Revisions were made as recommended.

Phase I of the study used a questionnaire (see Appendix D) that combined eight questions in which response alternatives were specified by the researcher (strongly agree to strongly disagree), as well as eight open-ended questions which allowed the participants to respond in their own words. The questionnaire was a highly structured with fixed choice and open ended questions. Students were asked to provide demographic information: age, gender, previous experience with audio teleconferencing, as well as type and location of classroom.

The second self-report questionnaire used in Phase II of the study was posted on the college Blackboard. Students enrolled in any of the six classes could access the Discussion Board any time at their convenience. They were asked to comment on any or all of the following three open-ended (focused), structured questions:

1. What types of teaching strategies or classroom supports do you think would help you learn in an audio teleconferencing classroom?

2. Can you describe a specific example of something that a teacher, fellow student or you yourself used that has helped you learn in an audio teleconferencing classroom in the past?

3. Can you describe a specific example of a strategy or support that presented a barrier to or discouraged your learning in an audio teleconferencing classroom in the past?

To ensure anonymity of the participants in the study, students were informed not to include their names on the questionnaire, and to post comments on the Discussion Board in Blackboard anonymously.

In Phase III a log sheet (see Appendix H) was created to guide and record responses of follow-up telephone interviews. Ten open-ended, semi-structured questions were developed to conduct the interview, but candid comments not directly pertaining to the categories of information sought were noted and recorded.

Once all the data from the questionnaires and discussion boards had been gathered, the researcher examined and manually analyzed the information. Following Tesch's (1990, as cited in Creswell, 1994) eight steps, the content was reviewed in detail, sorted into categories, color-coded and coded. First, the researcher read through all the transcripts with care to get a sense of all the comments. One document, the presentation questionnaire was reviewed first. The researcher looked for meanings in the comments and wrote notes on the sides of the papers. The remaining documents from the focus groups and interviews were reviewed in the same manner. The researcher then broke the data into topics/segments, carefully examining them and comparing them for similarities and

dissimilarities in an attempt to determine the themes within the data and the meaning those themes have. Topics were abbreviated as codes and written next to each segment of text. The next step was to look at those topics and identify categories. The categories chosen were teaching strategies, learning strategies, positive experiences and negative experiences. Continued analysis and abbreviation of codes developed sub codes. The coding scheme developed from data analysis by the researcher is presented in Figure 1.

A. Teaching Strategies 　　1. Methods 　　2. Characteristics	C. Positive Experiences 　　1. Strategies that foster learning 　　2. The environment
B. Learning Strategies 　　1. Methods 　　2. Characteristics	D. Negative Experiences 　　1. Barriers to learning 　　2. The environment

Figure 1. Coding scheme for students' perceptions of audio teleconferencing class.

Summary

The research methodology had been outlined in this chapter. A case study design using a questionnaire, focus groups, and personal interviews was used to examine the instructional strategies used in the audio teleconferencing classroom. The qualitative methodology used allowed the researcher to consider the lived experience from a student's perspective. The structure and overview of the study, setting and sample, procedures and data analysis have been discussed. The findings of the study are described in the following chapter.

CHAPTER IV
FINDINGS

Introduction

       The purpose of this study was to examine the instructional strategies

available for teachers of adult students enrolled in audio teleconferencing courses.

Two methods of data collection were initially devised. The focus of inquiry was on

the perceptions of those students and the instructional resources/methods that

would foster deep learning in a virtual environment. To achieve this purpose,

participants enrolled in six part-time distance courses were asked to give a

presentation in class, first by audio teleconference and then by face-to-face

methods. Students who agreed to perform these activities were asked to complete a

questionnaire that included additional questions, which identified demographic

information following the presentation. All six classes were invited to take part in

Blackboard discussion focus groups where further information on teaching

strategies, positive and negative experiences was gathered. Table 1 shows the

response rate for the two collection methods and the final sample.

Table 1

Response Rate by Collection Methods and Final Sample

	Potential Subjects	No. of Responses	Response Rate
Classroom	21	9	43%
Blackboard	118	15	13%
Final Sample	118	24	20%

The final sample of 24 students (20%) represents only a small portion of learners taking part-time courses through distance education at the college.

After the data from the questionnaire and Blackboard focus groups were analyzed, two students from the six courses were randomly chosen and approached to take part in one in-depth interview each. The first student (IS-1) was a Registered Practical Nursing student taking her first part-time elective course in the evening by distance (and audio teleconferencing). The second student (IS-2) was a part-time Paramedic student taking his entire program part-time through Distance Education, which included using audio teleconferencing.

Data Analysis

The data collected during the study (see Appendices I, J, K) will be reported in this chapter under the four topics: teaching strategies, learning strategies, positive experiences and negative experiences. Understanding the types of instructional strategies that adult learners prefer or would use and their perceptions of those experiences enhances the education process and provides student support in an audio teleconferencing environment. The findings are discussed as they relate to each of the four topics.

Teaching Strategies

What teaching strategies did the participants in this study prefer? The data related to this topic has been sub-divided into two categories: Methods and Characteristics.

Methods. The first part of the presentation questionnaire (see Appendix E) required the subjects to circle the response that best described their agreement with the statements regarding the delivery of material in class by both an audio

teleconferencing and face-to-face delivery. On a scale ranging from "Strongly Agree" to "Strongly Disagree", students responded to eight statements related to teaching their topic in a presentation format. The statements were specific and referred to the use of a teaching guide that outlined learning and presentation tips, as well as access and availability of materials used to teach the topic. The last three statements addressed the ease or difficulty in presenting in an audio teleconference versus a face-to-face environment. The results are presented in Table 2.

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Table 2

Class Presentation: Instructional Strategies Ratings

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Was teaching Guide Helpful?	1	6	2		
2. How to obtain materials in f2f		9			
3. Materials available/ accessible in f2f	2	5		2	
4. How to obtain materials in audio	1	8			
5. Materials available/ accessible in audio	2	7			
6. Easy to teach f2f	2	6	1		
7. Easy to teach audio		4	1	4	
8. Alter strategies in audio vs. f2f	4	5			

As shown in Table 2, most subjects found the teaching guide helpful in preparation for their presentation (#1) and teaching materials and equipment easy to obtain in both environments (#2, 3, 4, 5). Eight of the nine student respondents found it easy to teach in the face-to-face environment (#6). The results were different for the audio teleconferencing method, as an equal number of students (four and four) found it easy and difficult (#7). All students felt teaching strategies would have to be altered in an audio teleconferencing classroom versus face-to-face (#8).

The second half of the presentation questionnaire asked subjects to make comments in response to seven questions. Two questions specifically asked which teaching strategies they did use in their presentations. Student responses showed a variety of methods:

Face-to-face:

S4 "Group involvement, Q&A, with eye contact, scenarios" (#4)

S6 "I used the active involvement of the learner. Enhances learning because I felt that we could get more in the topic with discussion and doing projects." (#6)

Audio teleconferencing:

S5 "Used a handout which our group sent to different locations ahead of time" (#22)

S8 "Lecture, relate topic to paramedicine." (#24)

Two further questions asked which strategies would respondents have used if they had more time or support. Again they identified a variety of teaching methods used in both audio and face-to-face classrooms:

Face-to-face:

S1 "Visual aids ie. Blackboard, overheads" (#9)

S2 "PowerPoint would be an amazing tool that would make presentation easier." (#10)

S3 "I would have like to use a slide presentation. You can include a lot of information and go through in a limited amount of time." (#11)

Audio teleconferencing:

S1 "Perhaps ad-libbing adding personal stories to personalize the information and keep the listener's interest." (#26)

S3 "I would like to send my slide show to those at the other sites to see what I was actually talking about." (#28)

S5 " More opportunity to have class participation. More handouts, quizzes, statistics." (#30)

Looking at the responses for these four questions collectively, students did identify similar instructional strategies used to present in both environments such as handouts, group work and class participation. However, a few students referred to visual strategies, such as "eye contact and facial expressions" more often in the face-to-face environment (S1 #1), while some in the audio teleconferencing classroom identified audio modalities, such as "slow, precise pronunciation" (S1 #18). Yet, when asked what instructional strategies they would like to use to support their presentation in their respective classrooms, both environments identified a need for more visuals such as "Blackboard" (#9), "PowerPoint" (#16), "Telewriter" (#29), and "video tapes of lectures" (#34).

Characteristics. In reviewing the comments on the Presentation

Questionnaire and those posted by the Blackboard Focus Groups, characteristics of

instructional strategies used in various audio teleconferencing environments were

presented by students. Subjects recognized differences in approaches that some

teachers used in their virtual classrooms. Those instructors that encouraged

interaction, and provided visualization or used story-like imagery in their audio

classroom provided excellent support:

> S9 "It was a definite learning experience. XXX has an excellent
> style to the presentation of his lectures and let's you get involved
> with comments and questions. (#69)

> S10 "One of my teachers used to make analogies to common things
> so that we would could visualize (in our heads) and/or understand
> a little easier." (#71).

> S17 " When an instructor actively picks people to answer questions
> or asks then for their opinion. When you are sitting all alone in a
> room it is very easy to get side tracked by thinking of other things.
> By doing this, it not only makes you pay attention more closely but
> it gets you actively involved in the class, you tend to retain more and
> get more out of class." (#96)

> The second student in the in-depth interview supported these comments

when he explained that:

> "A good instructor passes along knowledge of the subject
> verbally as opposed to visually because with audio you can't
> see. So I've had good instructors that describe things very
> well and I can understand it. But I've had bad instructors that
> can't explain it or read from the book and that is bad." (IS-2 #145)

Learning Strategies

What learning skills did the participants in this study use? The data related to

this topic has been sub-divided into two categories: Methods and Characteristics.

Methods. When asked for additional comments in completing the

Presentation Questionnaire, one subject said "Great learning tool for me." (#68).

What strategies did students find helpful in their approach to learning? A few of the

responses identified learning practices that the students themselves found useful in

the audio teleconferencing environment:

> S11 "One strategy which works for me is when the instructor uses
> analogies in relation to the idea they want to get across. Also I liked
> it when the instructor or other students presented relavent stories
> which was associated to the subject we were discussing." (#78)

> S13 "I am very pleased with the presentations. I do enjoy knowing
> what is going to be presented the following week so I am able to
> possibly review some of it ahead of time. It really helps to
> understand the subject." (#75)

> S14 "I found the CDs and website info provided with our texts very
> beneficial when reviewing for quizzes. I went on-line and did the
> test and used the flashcards provided on the websites." (#76)

> SI-2 "We used Blackboard in class. It was a valuable learning tool
> for me. You can communicate with other students on the discussion
> board. You can talk to the teacher. When I did miss my class, I
> could get the notes from there." (#155)

As evident in these comments, students liked approaches to learning that

were accessible, interactive, social, and related to everyday experiences.

Characteristics. The last two questions in the Presentation Questionnaire

asked subjects what characteristics they thought learners in the face-to-face and

audio classrooms needed to have in order to be successful in learning the content.

Table 3 presents the results.

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Table 3

Learner Characteristics in the Face-to-Face versus Audio Teleconferencing

Classrooms

Classroom	Characteristics
Face-to-Face	Good visual and auditory recall
	Comprehensive note taking
	Ambitious and interested in the topic
	Attentive and ask questions
	Aware of their learning style
	Good listening skills
	Participation
	Desire to learn
	Presentation qualities (not boring)
Audio Teleconferencing	Excellent auditory, recall and listening skills
	Comprehensive note taking
	Attentive and not afraid to ask questions
	Identify study skills best for success
	Independent learning skills
	Participation
	Good, clear communication
	Interest in the topic
	Desire to learn
	Ability to focus on learning (only using sense of hearing)
	Strong, clear voice

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At first glance, dissimilarity may be seen between the two environments as a few

students associate visual characteristics with face-to-face, and auditory with audio

teleconferencing. However, careful analysis of the responses reveals that most of

the characteristics are similar for both: note taking, attentiveness, asking questions,

learning styles, listening skills, participation and interest in the topic.

<u>Positive Experiences</u>

What positive experiences related to learning in the audio teleconferencing classroom did the participants in this study identify? The data related to this topic has been sub-divided into two categories: Strategies that Foster Learning, and the Environment.

<u>Strategies that Foster Learning</u>. Students' perceptions of instructional strategies that were positive experiences for them in the learning process were evident across all three collection methods: Presentation Questionnaire, Blackboard Focus Groups and In-depth Interviews:

> S4 "First we learn, then we write, then when we present we further reinforce our memory. So, Yes I think it helped me learn the topic at hand better." (#38)

> S12 "I do believe that I have been fortunate to have had excellent teachers and that they have managed to utilize all their educational tools to better educate me. Excellent review sheets, allowing us to tape the sessions, and simply breaking it down to lay-men terms. (#79)

> SI-2 "I like being able to ask questions of other students as well as the teacher." (#138)

<u>The Environment</u>. Similar perceptions of positive experiences being helpful were also seen in reference to the environment:

> S19 "The teacher and other students were all from different sites and we were discussing strategies. It was beneficial for me to hear how other people have their unique ways of retaining information. Ideas were good and diverse and I adopted them to use for my own studying." (#98)
> S20 "When teachers are familiar with equipment and prepared for class, it makes the learning experience much more positive and enjoyable." (#111)

> S23 " The one class we had was audio, the teacher started it by giving us pictures of each other and her. This helped me see the other students at the other site." (#110)

SI-1 "It brings all different people together, even though we're 100 miles a part and not under one roof." (#121)

Positive learning experiences can enhance the student's learning while

negative experiences can become barriers to the learning process.

<u>Negative Experiences</u>

What negative experiences did the participants in this study identify? The

data related to this topic has been sub-divided into two categories: Barriers to

Learning, and Environment.

<u>Barriers to Learning</u>. Students' perceptions about lack of personal and

instructional strategies in the audio teleconferencing classroom were identified as

barriers to student learning:

S6 "I think that presenting over audio-conferencing does not help me learn. I feel that I learnt more just doing the assignment. Presenting face-to-face halps to learn the materials better, because more can be done." (#40)

SI-1 "There was a lot less visual stimulation. Not like in the class where the teacher shows us overheads. There was less interpersonal communication because of speaking over the mike. It goes back to monopolizing the conversation. All student need to have a turn." (#124)

<u>The Environment</u>. Students were able to describe specific examples of

negative experiences in relation to the environment.

S11 "One class we heard someone snoring because of an open mike. Quite funny but annoying." (#73)

S17 "The largest barrier for audio/teleconferencing is the quality of the lines. It is EXTREMELY frustrating when you have paid for a course and you cannot understand what anyone is saying." (#99)

S19 "The teacher/instructor was late and new to the equipment and was uncomfortable with the technology. Her voice was quiet and we had trouble hearing her." (#101)

SI-1 "There was a lot of noise sometimes. And if one person monopolizes the discussion then the students out at the site can't

concentrate and are not taking part. The other thing is that there
needs to be one mike per person." (#123)

Further analysis of the data gathered from the Blackboard discussion boards

identified specific examples of both positive and negative experiences that were

categorized. Results are presented in Table 4.

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Table 4

Comparison of Categorized Positive and Negative Experiences in an Audio

Teleconferencing Classroom

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Positive Experiences	Negative Experiences
Analogies *	Teacher reading from the text *
Review sheets	Students arriving late for class *
Tapes of sessions	Tapes that were ordered arrive late
Wise utilization of time	Wasting time in class
Teacher familiarity with equipment *	Teacher unfamiliar with equipment *
Peer discussions *	Background noise heard on-line
Class preparation	i.e. Snoring, Hockey on TV
Handouts	students 'chattering' *
Teacher directs in-class questions	Speaker phone – bought my own,
Communication with teacher and	no headset
other students by email *	Lack of visuals *
Prompt return of email or phone	Poor quality of the lines
calls	Not enough microphones in room*
Small group projects	Classroom disruptions
Presentations *	Students monopolized conversation
Photos of "faceless students" *	Poor teacher control in class *
When equipment worked	Course materials arrived late
properly *	Equipment breakdown *
Used Blackboard for notes or	Boredom *
discussion groups	Feeling separated from teacher
Being treated as adult learners	and other students

_____

Note: * denotes response recorded more than once

Being able to compare the categorized experiences at a glance allowed the researcher to identify themes. The main themes regarding positive experiences included teaching style and control, feelings of connection and interaction, learning strategies, communication and the environment. Perceptions of negative experiences had similar themes such as teaching style and control, lack of connectedness and visuals, boredom, technical difficulties and poor equipment.

<u>Summary</u>

Data were collected by means of three methods: a Presentation Questionnaire, Blackboard Focus Groups and two In-depth Interviews. The data gathered were classified according to four main topics and the findings describe the students' perceptions in each of these areas. Students found it easier to present in a face-to-face versus audio teleconferencing environment. While they used a variety of instructional strategies when making their presentation, a few students felt they used the visual methods more with face-to-face then audio teleconferencing. However, they identified a need for more visual supports when teaching in both environments. Students also recognized different approaches used by their teachers in their virtual classrooms, and felt supported by those instructors who encouraged interaction, provided visualization and used imagery in their lectures.

Further analysis of the data identified specific instructional strategies students themselves found helpful in their approaches to learning, such as accessibility, interaction, social context and having class content related to everyday experiences. Respondents chose characteristics that they felt a learner should have in order to be successful. Those characteristics were similar for students in both audio and traditional classrooms.

In the last two focus group questions, respondents expressed appreciation for positive experiences that fostered learning and concern about the frustrations they felt with negative experiences that created barriers to learning. The findings and their implications are discussed further in the following chapters.

CHAPTER V
DISCUSSION, IMPLICATIONS AND SUGGESTIONS

<u>Introduction</u>

A qualitative case study design seeks to focus on a particular situation, provide descriptive data, and bring meaning and insight to the reader (Merriam, 1988). This study used Tesch's (1990) eight steps to categorize and code the textual data gathered through questionnaires, focus groups and in-depth interviews. In the editing analysis, the researcher read through the data looking for meaningful segments to sort and organize. The analysis was guided by two concerns: 1. to secure accurate information about the personal experiences of the subjects in the study, and 2. to develop an understanding of the phenomenon being examined (Mauch & Birch, 1998).

In this chapter the results of the findings are presented with respect to the insights gained from analysis of data regarding adult students' perceptions of instructional strategies used in their audio teleconferencing courses. In addition, implications for implementing those strategies and suggestions for further research will be discussed.

<u>Limitations of the Findings</u>

There are a few conditions that must be kept in mind when discussing the results of the study. First, it is important to clarify the type and size of the sample. The results of this study describe the responses of 24 students, enrolled in six courses, belonging to two programs, at one college. The in-depth interviews were done with two students randomly chosen from that pool of subjects and did not add to the sample size. Only nine out of twenty-one students (43%) who signed consents

at the beginning of the study actually submitted completed questionnaires. Of the 118 students enrolled in the six courses involved in the study, only 15 (13%) posted comments. It is not known why students chose not to respond, however in an attempt to counterbalance the low response rates this researcher made the assumption that those who responded did so in an honest way that gave personal meaning to each response.

Another condition that can limit the findings is the fact that the researcher was also the recorder and interpreter of the data. As a recorder and gatherer of data, the researcher ensured accuracy of notes and information by transcribing comments word for word and checking and rechecking the typed data. Blackboard discussion group comments were copied as written from the site to a Word document file to ensure correctness of responses. To make sure both phone interviews were recorded exactly, the students were told the researcher would proceed slowly and repeat comments. The process of qualitative research is by nature inductive, that is to say that the researcher builds categories, concepts and themes from details and comments of the study (Creswell, 1994).

Credibility of the Study

Creswell (1994) suggests it important to address the concepts of validity and reliability in a qualitative study but the researcher must present these concepts within the accepted methodology of qualitative inquiry. No attempt has been made to generalize the findings to other distance education students or audio teleconferencing courses at other colleges. Merriam (1988) defines external validity as being "concerned with the extent to which the findings of one study can be applied to other situations" (p. 173). She goes on to suggest that we can look at

generalization not in the traditional (quantitative) sense but rather in a way that reflects the assumptions of qualitative design. We can then look at what the reader is trying to learn from the case study, and allow them to apply what they want to their own situations. Merriam (1988) calls this "reader or user generalizability". To increase the possibility that this case study's findings can be generalized in this sense, this researcher has attempted to provide the reader with a rich, detailed, contextual description of the study.

Reliability in qualitative design is thought of in terms such as 'dependability' and 'consistency' as it looks to describe and explain rather than replicate the same results (Merriam, 1988). In an attempt to achieve rigor and improve this study's chances of replication, this researcher has maintained honesty and openness in presentation of the study's purpose to students, thoroughness in collecting and analysis of data and strict adherence to the underlying process of qualitative case study design when categorizing, coding and clustering data.

Despite the constraints and the concerns about generalization, the findings are informative and worthy of discussion.

<u>Discussion of Findings</u>

The summary of results has been organized in terms of this study's three research questions:

1. What perceptions do our students have of audio teleconferencing instructional strategies?

2. What types of instructional strategies can we develop to help them adjust to the audio teleconferencing classroom and create a positive, equivalent learning experience?

3. How can we foster and support deep learning in an audio teleconferencing environment?

<u>Research Question #1</u>

What perceptions do our students have of audio teleconferencing instructional strategies?

By exploring the positive and negative experiences that students have had in the past it is hoped we could learn how to make audio conferencing an equivalent, more rewarding learning experience for them in the future.

All students in this study were adult learners enrolled in either part-time or full-time, day and evening courses at a community college. The non-academic demands on the students such as families and jobs were not known; however, all six courses involved in the research were part of two post-secondary health programs delivered part-time through distance education. These programs are not available for face-to-face delivery in their home communities. Therefore, students were motivated to take the courses through distance if they want to access these post-secondary education programs. Colleges are motivated to deliver these programs as they are mandated to meet the educational needs of their rural and regional communities. Hardy and Olcott (1995) suggest that, the need for instruction with limited availability of traditional methods makes audio teleconferencing a viable, instructional approach. They further put forward that students who participate in distance learning programs perform at academic levels equal to traditional campus learners. However, they explain that these performance studies are offset by research that identifies dissatisfaction of students regarding issues around delivery.

Students in this study gave some insight into these issues by providing specific examples of experiences in the audio teleconferencing environment that they felt either enhanced their learning or created barriers.

One student, in describing a positive experience, talked about having had excellent teachers who utilized great teaching and communication tools to enrich his/her learning (S12 #79). Another student focused on interaction in the classroom, and how beneficial it was to listen to other students and share ideas (S19 #98). A third student explained how the audio teleconference brought people together even though they were actually miles apart (SI-1 #121). Garrison (1989) says that the advantage of audio teleconferencing is the quality of the interaction and support it can afford. The positive experiences that these students referred to are testaments to Garrison's comments.

Students also identified negative experiences that created barriers to learning. Specific examples focused on less visual stimulation and interpersonal communication (SI-1 #124), poor quality of the telephone lines (S17 # 99), hearing too much noise during an audio teleconference session (SI-1 #123) and an inexperienced teacher (S19 #101). One student in particular noted that presenting in the face-to-face environment helped him/her to learn the material better, because more could be done in that classroom than in the audio teleconferencing classroom (S6 #40). This supported the data gathered in the Presentation Questionnaire where students suggested that it was easier to teach in the face-to-face environment than in the audio classroom (Table 2). Hardy and Olcott (1995) suggest that given a

choice, most students would prefer traditional face-to-face instruction perhaps because it is their "only instructional frame of reference" (p. 45).

As educators, we need to help our students make that successful transition to distance education and facilitate positive learning experiences for them.

Research Question #2

What types of instructional strategies can we develop to help students adjust to the audio teleconferencing classroom and create a positive, equivalent learning experience?

Hardy and Olcott (1995) suggest that not all, but many, educational activities presented in a traditional classroom can be used in audio teleconferencing courses. In the questionnaires and focus groups, students were asked to comment on what types of strategies they themselves would use or found helpful.

The Presentation Questionnaire gathered comments on presenting an assignment in class by audio teleconference. Students were asked to present first by audio teleconference then repeat the presentation to their site (face to face). In answering the survey, students provided insight into the types of strategies they did use or would use if they had more time or support. Students presenting felt it was easier to teach in the face-to-face classroom than by audio. They felt strongly that their strategies would have to be altered when presenting in an audio teleconferencing environment. Hardy and Olcott (1995) propose that because audio teleconferencing does lack a visual component it creates a greater challenge when teaching. They suggest that sometimes teachers can counteract this by simply helping students to overcome what they call "mike fright".

When students were asked in the Presentation Questionnaire what strategies they would like to use in the audio classroom, they identified three themes: visual stimulation, interaction and communication skills. They suggested using strategies such as "Blackboard for round-the-table discussions" (S2 #27), "slide shows so that other sites could see what I was actually talking about" (S3 #28), "more opportunity for class participation" (S5 #30), "a lot more feed back" (S6 #31), and "ad-libbing adding personal stories to keep the listener's interest" (S1 #26).

The focus groups were asked what supports as well as teaching strategies they thought would help them learn in an audio teleconferencing classroom. They also identified visual strategies, interaction, and communication when they suggested strategies such as the telewriter (S19 #95), discussion (S16 #92) and analogies (S10 371). Analysis of the findings identified two further themes: competent teacher and operational technology. Students made comments about teachers who are "knowledgeable and utilize time well" (S15 #80), "very familiar with the equipment & blackboard and have stimulated and encouraged discussion" (S16 #92). They also expressed their frustrations with technology that did not operate properly with comments such as "overhead mics were horrible as they either did not work at all or they picked up the most minute noises magnifying them over the airways." (S21 #113) and "We were hindered by a lack of microphones and overhead microphones that were not operational" (S20 #102).

Hardy and Olcott (1990) suggest that the aim of audio teleconferencing "is to produce high-quality interaction, facilitate student autonomy and interdependence in the learning process, and foster a commitment by faculty to a

rich learning experience" (p.53). The strategies identified by students in this study

are grounded in the research of Hardy and Olcotte (1990) which was just discussed,

as well as Sweet (2000), Miller (1996), Burge and Howard (1990), Garrison (1990),

and Garrison (1989).

Sweet (2000) says that distance educators are increasingly combining media

to enhance interaction. Students in this study talked about the use of Blackboard (SI-

2 #155), videotapes (S23 #115), and even websites on the Internet (S23 #105) to

support their learning.

Miller (1996) suggests that technology can go beyond the goal of just

providing knowledge to students to becoming a tool of empowerment that increases

their access to knowledge, the teacher and other students in a student driven way.

Students in this study supported this by saying "I found the CDs and website info

provided with our texts very beneficial when reviewing for quizzes" (S14 #76), and

"Blackboard should be of good use with VERY course offered. This would allow the

student to feel more apart of a classroom and would allow for better communication

between the teacher & their students & between the students themselves" (S17

#94).

Burge and Howard (1990) discussed suggestions to enhance students'

comfort with audio teleconferencing. Three recommendations that they made in their

study were similar to supports the students of this study identified. First, Burge and

Howard (1990) suggested improvements to the technical structure. Students in this

study commented on frustrations with equipment that did not work properly (S20

#102), and poor quality of the lines (S17 #99). Secondly, Burge and Howard (1990)

suggested the development of an on-line etiquette or protocol that would allow for better discussions. One student commented on "a lot of noise at times, and problems if one person monopolizing the conversation' (SI-1 #123). Finally, Burge and Howard (1990) recommended an alternative to the lack of visual cues in interactions by suggesting photos and bios of each student be sent to others to enhance the social aspect of the class and create a more cohesive group. Students in this study talked about how such strategies as "photos of 'faceless students" provided by the teacher were really good" (S21 #108).

Garrison (1989) suggests that audio teleconferencing "facilitates and supports distance learning" as it is "a group instructional method that simulates the traditional classroom setting" (p.68). Garrison addresses that two-way exchange characteristic again in 1990 when he suggests "it brings students together in a group for dialogue and support" (p. 22). Students in this study support the importance of that support in their comments such as "It would be great to have more interaction and stimulation with the other students (S24 #106), and "The teacher also asked us questions in class. It made me pay attention and also feel part of the class" (S23 #110).

Analyzing the responses of students in this study, the researcher developed an understanding of how they perceived their audio teleconferencing classroom experiences. It is hoped that their comments can provide an insight for the reader into the design of future learning experiences.

Research Question #3

How can we foster and support deep learning in an audio teleconferencing environment?

The researcher read and reread the students' comments related to positive and negative experiences, as well as teaching and learning strategies in an attempt to formulate themes that truly reflected the meaning of the students' comments. Five clustered teaching/earning strategy themes emerged as students expressed a need for visual stimulation, interaction, and effective communication, as well as competent teachers and operational technology. A pictorial representation of the instructional strategy themes is presented in Figure 1.
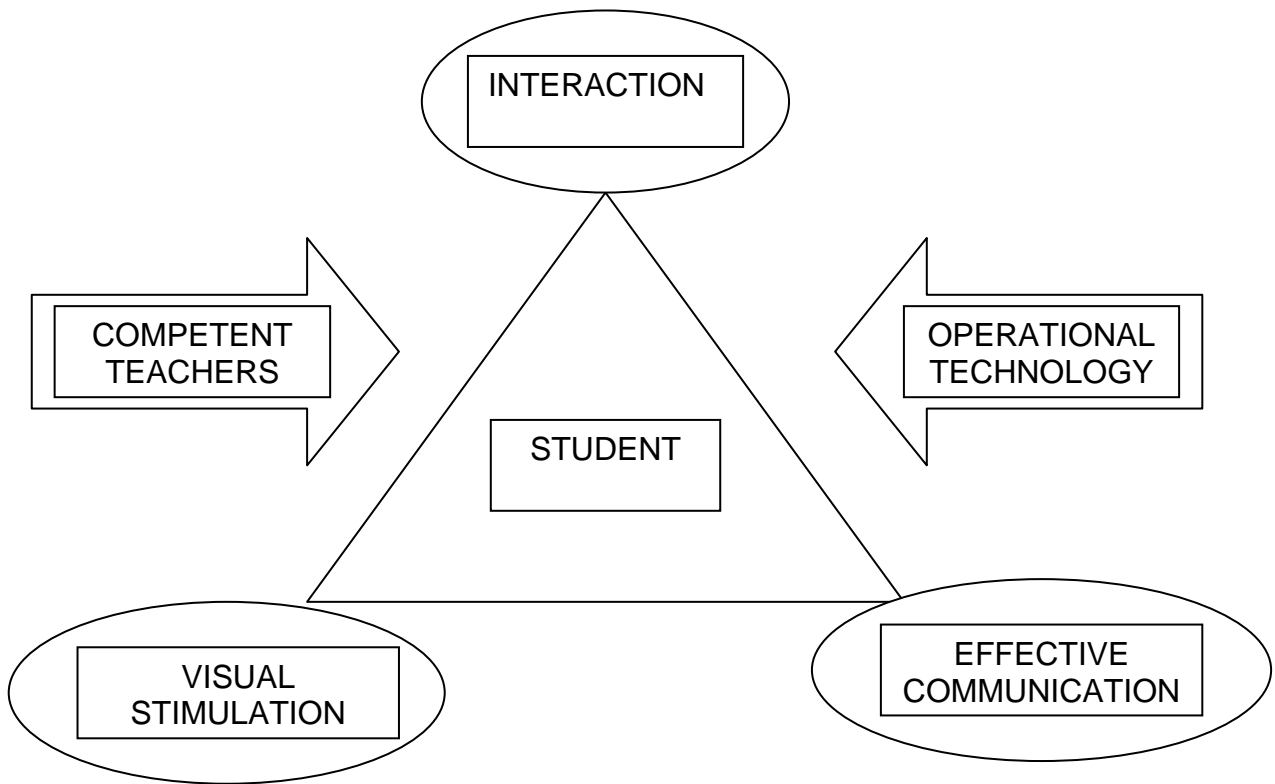
Figure 2. Pictorial representation of the instructional strategy themes

An effective audio teleconferencing class is not just about lectures or verbally giving out information while students take notes or fill in the answers in a pre-packaged study guide. It should be about providing a framework that will enhance

understanding and meaning for the learner. The five teaching/earning strategy themes identified by students in this study create that framework.

Visual Simulation

Visual aids are useful tools to supplement the voice only aspect of audio teleconferencing, and are an important characteristic of a quality learning experience. Visuals provide a concrete reference for concepts and ideas, helping the student to connect the spoken word to those ideas and developing an understanding of the material (Simonson, et al., 2003). Students in this study identified a need for visual stimulation to support them in the audio teleconferencing environment. Suggestions included the use of a telewriter (S4 #29), CDs produced by teachers with course materials on them (S15 #90), handouts (S17 #96), and photos of other students (S21 #103).

Interaction

Hardy and Olcott (1995) suggest that audio teleconferencing is well suited to facilitating interaction among students, and an "important factor in effective distance teaching is continuous interaction between students and instructor and among students" (p.47). These researchers recognize lecture, seminar and round-table discussion as examples of formats that may provide a high level of interaction in an audio teleconferencing classroom. Students in this study support Hardy and Olcott's (1995) research, as they themselves identify interaction as an essential instructional strategy that would enhance understanding in the audio teleconferencing classroom. One student described a discussion with peers as an example of something that helped his/her learning in the audio environment, "sometimes you just need to reach

out & call or e-mail someone. You not only get another persons point of view but you're also learning in the process" (S17 #96). Learning becomes a shared event.

Effective Communication

Communication was the third theme that emerged from analysis of students' comments. Fowler and Wackerbarth (1980, as cited in Garrison, 1990) suggest that in comparison to face-to-face, audio teleconferencing is "effective for information exchange, discussion of ideas, problem solving, some negotiations, and interviewing" (p.17). Students in this study found a teacher's ability to use analogies (S10 #71), question and answer periods (S17 #96) and group meetings with members at different sites (S23 #110) beneficial.

Competent Teachers

The role of the adult educator in an audio teleconferencing classroom is to facilitate the learning process and create a learner-centered environment. Instructional strategies therefore should be chosen based on the needs of the student. Students in this study some key characteristics that they felt defined an effective teacher. Effective teaching requires knowledge of the subject matter. One student noted that "one of my past teachers made a horrible habit for constantly reading out of the text for the duration of each and every class" (S10 #72). An effective teacher creates an environment that promotes learning. A student in the focus group suggested that good knowledge of equipment, encouraging discussion and classroom control of noise and interruptions were important characteristics of an effective teacher (S16 #93).

Operational Technology

Hardy and Ocott (1995) suggest, "all successful distance learning programs ensure the technical dependability of the delivery medium" (p. 49). Problems can

and do occur, but it is the responsibility of the teacher and the educational institution to ensure proper operation of the audio teleconferencing system. Students in this study identified technology as the fifth teaching/learning theme that enhances understanding and supports learning in the audio classroom. "The largest barrier for audio/teleconferencing is the quality of the lines" (S17 #99). "The technical difficulties" (SI-2 #140).

Five teaching/learning strategy themes were identified in this study that foster or create barriers to learning in an audio teleconferencing environment.

<u>Learning Styles</u>

How can adult educators enhance and support deep learning in an audio teleconferencing classroom? James and Gardner (1995) suggest a model of learning styles that has "three distinct but interconnected dimensions" (p. 20). These three dimensions include the perceptual, cognitive and affective modes of learning. Hardy and Olcott (1995) suggest that educators respect individual learning differences but be supportive of all students. The best way to learn is different for each student. Some students are visual learners and learn best by seeing a demonstration or examining a situation. Other students learn from listening or talking things through. While others learn best in groups relating to other students. Regardless, when teaching/learning strategies are presented in more than one learning domain/dimension, the chances for learning and retaining information is greatly increased. Dwyer (1990) suggests "instructional experiences can be carefully designed and developed so that they can be efficiently utilized by broad bands of learners possessing similar learner-related characteristics" (p.222). Instructional strategies can be designed and organized according to James and Gardner's (1995)

model of learning styles (dimensions): perceptual, cognitive and affective. See

Figure 2 for a list of instructional strategies organized to learning style.

Handouts
Question & Answer
Small Group Discussions
e-Learning Platforms
Audio and Videos Tapes

Study Guides
Presentation
Feedback/ Discussion
Case Studies
Computer

Group Discussions
Role Playing
Peer Support/ Tutor
Photos
Bios

Perceptual

Cognitive

Affective
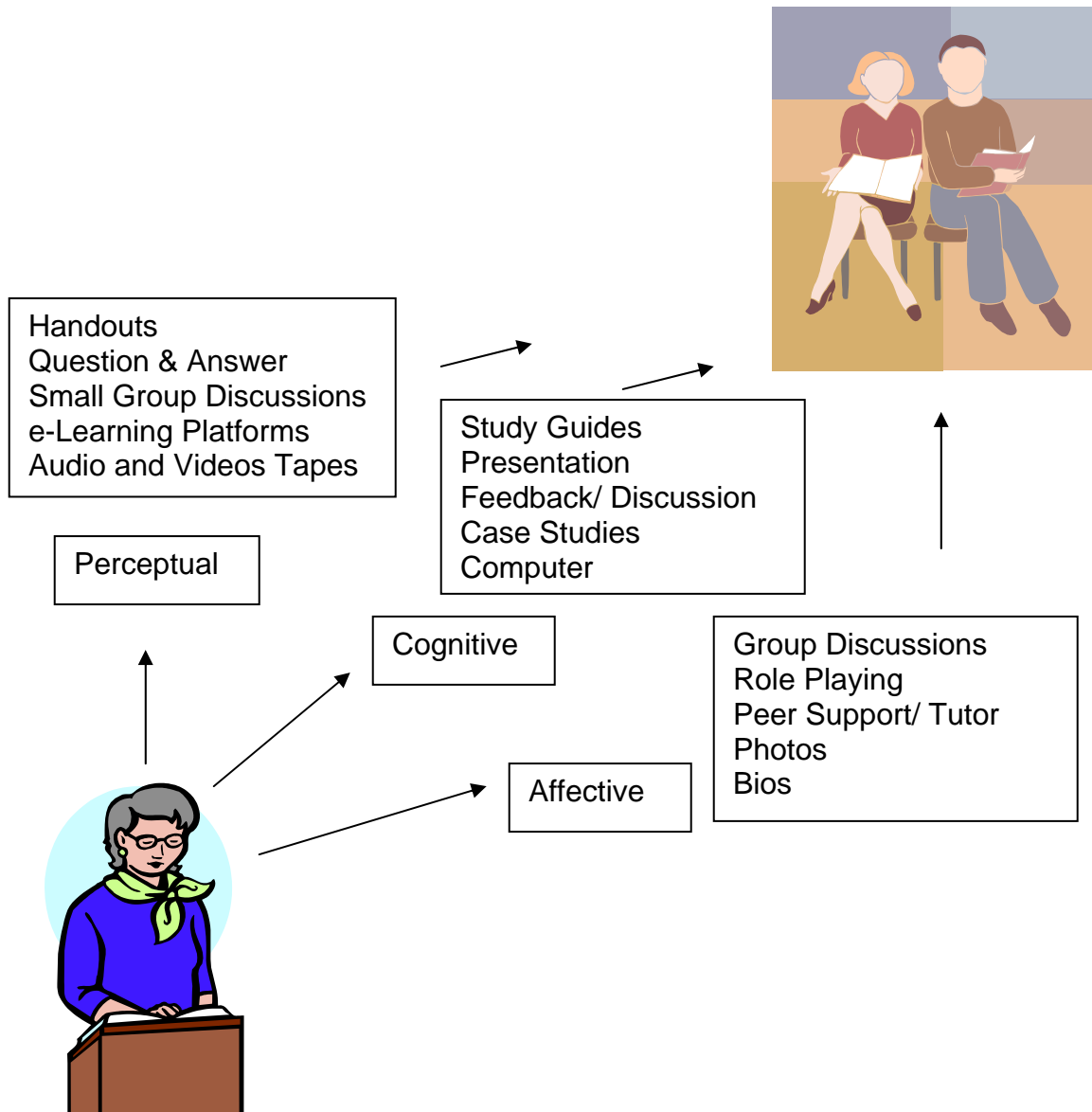
Figure 3. Instructional strategies by learning styles dimensions

Students in this study were asked to present an assignment in class, first by

audio teleconference then repeat the presentation to their site (face to face). Was

this an effective instructional strategy that enhanced understanding and meaning (deep learning) in the audio teleconferencing classroom?

The perceptual dimension identifies the ways a student "assimilates information" (James and Gardner, 1995, p. 20). The presentation of content in the audio teleconferencing classroom allowed students to perceive, give meaning to, organize and deliver it to his/her fellow classmates. In this study, students were able to communicate the information they had learned and get feedback (interactive) from others. Cognitively, the students had to figure out (information processing) the content and be able to explain it to their fellow students. The affective mode "encompasses aspects of personality that relate to attention, emotion, and valuing" (James and Gardner, 1995, p. 21). The presentation allowed expression of those attitudes, values and emotions. The social setting is important to the student and they can get satisfaction from other learners or can prefer to work alone.

Students in this study were asked if the presentation session helped them learn the material they presented. Eight out of nine students agreed that it did. "Very useful. Yes I think presenting info further cements it in a person's mind as sensory pathways are enhanced ie. Visual and auditory" (S1 #35). And "Forced into total understanding of topic in detail, to be prepared for questions" (S9 #44).

Implications

The findings of this study contribute to the body of knowledge on instructional strategies that will support the adult learner in an audio teleconferencing classroom. Effective teaching in an audio teleconferencing environment requires the teacher to have knowledge of the subject matter, as well as an understanding of the learning needs of his/her students. The teaching/learning process involves dynamic

interaction between the teacher, learner, materials/resources and the learning

environment. Dick and Carey (1990) suggest that teaching is a process in which

every one of these components is critical to successful learning. Being able to gain

insight into this process from a student's perspective is a crucial task for the adult

educator. The findings of this study can help in presenting that deeper

understanding, and in providing practical guidelines for that teaching process. Table

5 presents advice for teachers based on the instructional strategy themes developed

in this study.

_____

Table 5. <u>Essential advice for audio teleconferencing teachers by instructional
strategy themes</u>
_____

VISUAL STIMULATION	Provide any handouts to students at all sites before the scheduled class to ensure participants have the printed materials for class.
	Provide pictures of self and fellow students (class picture of one or more at each site) at the beginning of the course.
	Use e-learning platforms such as Blackboard or WebCT to post documents, announcements, or send emails.
	Use telewriter during class to highlight key points of discussion.
	Use other visual technologies such as study guides, flashcards, quizzes, videos, CDs, or DVDs to assist participants to prepare for a session or study afterwards.
INTERACTION	Encourage students to explore different sources of information, such as the Internet, libraries or other students.
	Set up discussion boards on an e-learning platform or group projects.
	Bring in guest speakers.
	Focus beginning of each class with discussion of "Questions of the Day" to promote opinion sharing.

EFFECTIVE COMMUNICATION	Speak clearly and slowly. Do not read from the textbook. Schedule and facilitate group activities to deliver content during classroom sessions. Encourage students at different sites to communicate with each other during group work, round table discussions or presentation style activities. Personalize the information (give examples) and encourage students to share life experiences to keep the class interest. Use analogies and frame comments in a familiar context (storytelling). Provide positive feedback. Return phone calls and emails in a timely manner. Initiate regular emails to students to maintain ongoing contact with them. Ask for regular feedback on class delivery.
COMPETENT TEACHERS	Provide the rules or guidelines (in writing and verbally) on classroom etiquette that discuss such things as noise, interruptions, taking turns to talk. Control topic of conversation by relating it, or redirecting back to course content. Change your presentation/ delivery style for variety and maintain student's interest (i.e. lecture, then round table discussions, then short quiz). This is especially important if your audio class is three hours long.
OPERATIONAL TECHNOLOGY	Become familiar with all audio teleconferencing equipment and use of e-learning platforms (i.e. Blackboard) that will be used in the course. Before you teach, ensure all equipment and visual aids are in place and are functioning properly.

_____

<u>Suggestions</u>

The perceptions gathered in this study provide a foundation of instructional strategies on which new and seasoned distance educators can build their audio teleconferencing classroom and improve their personal instructional resources. Further research is needed to expand on these findings. Suggestions for expanded study are:

1. Strategies discussed in this research provide a unique pattern of design that can be adjusted to meet the needs of the individual student, the content and the teacher. Students in the study did identify positive experiences that suggested that some distance teachers do already provide appropriate and helpful supports in the classroom. Teachers' perceptions on instructional strategies could be the topic for another study on effective teaching in an audio teleconferencing environment.

2. These findings provide college administrators with the information they need to support their teachers in the virtual classroom, and at the same time meet their mandate to provide high-quality education in this high-tech, low-funded, global environment. Further study could investigate other teaching supports including recognition of the extra time commitment, inadequate technology, technological fads or the negative attitudes towards distance teaching.

3. It is not fully understood from the results of this study 'why' students felt it was easier to teach in face-to-face than in the audio teleconferencing classroom. It may be 'mike fright' or 'lack of variation in instructional frame of reference' as earlier discussed, however further research is needed to identify those

underlying reasons and the influences they have on students presenting by audio.

4. Newer technologies provide the teacher with greater opportunities to offer current and alternative strategies and supports in their audio teleconferencing classroom. Further research could investigate how to include basic skills development for teachers and students who are unfamiliar or uncomfortable with these third (computer, such as email and website) and fourth generation (such as virtual reality and video desktop) media. Other research could examine the impact that these newer technologies do have on students when incorporated into the instructional design.

5. Considering the importance of student satisfaction as an outcome variable in distance education, conducting research aimed at identifying its determinants would be highly useful in a practical sense. Traditional and distance education class evaluation forms are distributed at the end of the course. In a 1998 paper, Matthew Champagne likened evaluation systems currently used by instructors to autopsies. "Once the class is over, they attempt to discern what went wrong" (p. 89). In face-to-face classrooms, instructors have the opportunity to gather on-going verbal and non-verbal feedback from their students. In distance education, this ability ranges in difficulty depending on the medium used. Further research could utilize evaluation tools given at the beginning and end of courses to look deeper into the effectiveness of instructional strategies as determinants of student success and satisfaction.

Summary

        This chapter has discussed the findings of this study with respect to the

insights gained from data analysis, regarding adult students perceptions of

instructional strategies used in audio teleconferencing courses. Implications for

implementing those strategies and suggestions for further research have been

discussed. This study lays the foundation for further research.

CHAPTER V
REFLECTION AND CONCLUSION

<u>Personal Reflections on the Study</u>

Completing this thesis has been a challenging yet equally rewarding experience for the researcher. This journey did not start with the registration of this study, but rather with the very first audio teleconferencing class taught by the researcher at a community college in Northwestern Ontario. This research is a labour of love that is the cumulative effect of every audio teleconferencing course and student that this researcher has taught. A greater in-sight into the perceptions and learning needs of past, present and hopefully future adult students enrolled in distance education courses has developed through this exploration.

Merriam (1988) suggested that case study research has a pragmatic justification.

> "A *pragmatic* justification emphasizes the applied
> nature of the case study research. As a method it
> can be advocated on grounds that it is more useful,
> more appropriate, more workable than other research
> designs for a given situation. Knowledge produced by
> case study would then be judged on the extent to which
> it is understandable and applicable – thus a pragmatic
> conception of truth undergirds this approach." (p.20)

It is the hope of this researcher that the findings of this study will offer practical suggestions that will help teachers and colleges alike to create audio virtual

classrooms that will support the adult learner, foster deep learning and ultimately enhance student satisfaction with distance education. Through the application of this study's findings, distance educators and administrators have an opportunity to create this environment and enhance learning in a positive way.

Conclusion

Devries and Tella (1998) answered the question "Just how important a role does faculty member development play in the success of distance education?" by saying "the key to success in distance learning is the teacher. If the teacher is good, the technology can become almost transparent" (Summary section, para. 1).

Miller (1996) suggests that "technology is an enabler, a collection of tools and, like knowledge, a means to an end" (p. 42). It is important to keep the technology in perspective (Miller, 1996; Bates, 1997).

Students look forward to and greatly appreciate teachers who can provide a learner-centered environment, a learning experience that is rich in audio and visual cues, interactive, social, technically supported by other media and designed for the adult learner. Adult educators can create such an environment that is seamless in delivery and transparent in technology without taking away the essence of distance education.

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APPENDICES

Appendix A – Letters of Support from Debbie Sargent and Don Lovisa

Appendix B – Participation Request letter to Teachers

Appendix C – "Information" and "Consent to Participate" in a Research Project Form

Appendix D – Information Package to students

Appendix E – Student Presentation Questionnaire

Appendix F – Blackboard Focus Groups letter

Appendix G – Blackboard Focus Groups reminder memo

Appendix H – Log sheet for follow-up telephone interviews

Appendix I - Student Presentation Questionnaire with results tabulated

Appendix J - Blackboard focus groups posted comments

Appendix K - Both student presentations – In-depth telephone interviews:
 SI-1 (K) and SI -2 (J)

APPENDIX A

Letters of Support from Debbie Sargent and Don Lovisa

April 30, 2003

AU Graduate Student Research Funds Committee
C/O Janice Green, Secretary
Athabasca University

To whom this may concern:

Re: Debra Walker

This letter verifies my support of the funding request of Debra Walker, a student registered in the Master of Distance Education Program at Athabasca University.

Confederation College supports Debra's efforts in expanding the knowledge necessary to effectively deliver distance education programs in Canada. As we expand our distance education program offerings, I am optimistic that the work that Debra is doing will only improve the quality of the course/program delivery.

Confederation College will continue to support Debra's efforts by providing the necessary office space and supplies for her to complete her work. We are also able to provide a reasonable amount of typing support as available through the School of Health and Community Services.

Thank you for considering Debra for the funding that she is requesting and I look forward to the outcomes of the research she is completing.

Sincerely,

Debbie Sargent, Academic Director
School of Health and Community Services

May 1, 2003

Debra Walker
Professor, Practical Nursing
Confederation College
Thunder Bay, Ontario

Dear Debra:

It is with great pleasure that I write this letter of support for your continued studies in distance education. I wish to confirm our support for your examination of instructional strategies available for teachers of adult students enrolled in audio teleconferencing courses at the community college level. The expected result of this research enabling teachers to create a virtual classroom that will support the adult learner and enhance student satisfaction with distance education will be of great value to Confederation College faculty.

To that end, our Distance Education department will provide support with regards to the use of technology, technical assistance, and access to the appropriate resources to ensure your success.

Yours truly,

Don Lovisa

Don Lovisa, Academic Director
School of Access and Literacy

c.c. Director, Community Education

APPENDIX B

Participation Request letter to Teachers

July 4, 2003

Dear Distance Education part-time instructors:

I am writing this letter to request your participation in a research project that I am conducting this fall 2003.

I am currently enrolled in Athabasca University's Master of Distance Education program and working on my thesis titled: "AUDIO TELECONFERENCING: SUPPORT FOR THE ADULT LEARNER"

This project has support from Debbie Sargent, Academic Director, School of Health and Community Services and Don Lovisa, Academic Director, School of Access and Literacy. At this time, it also has been given conditional approval by Athabasca University's Research Ethics Board. However, one of the conditions of this approval is to use students from someone else's class in my project, as well as my own.

To participate, you would be required to have or be willing to include a teaching assignment as part of the evaluation in the course that you teach. Students that volunteer for the project are asked to make two teaching presentations in class rather than one: face-to-face and via audio teleconferencing. Evaluation forms will gather data on their perceptions of their performance as an instructor of the content they delivered. A focus group conducted at the end of the course will be open to all students in the class, and will hopefully gather more data on their perceptions as a student in the class.

The purpose of this study is to examine the learning strategies used by adult students enrolled in audio teleconferencing courses at a community college. As such, the results of this research will enable teachers to create a virtual classroom that will support the adult learner and enhance student satisfaction with distance education.

If you are willing to participate and would like further information, please call me at (work) 475-6668 or (home) 473-4992.

I thank you for considering this request.

Sincerely,

Debra Walker

APPENDIX C

"Information" and "Consent to Participate" in a Research Project Form

<p align="center">"Information" and "Consent to Participate" in a Research Project</p>

Title of the project: AUDIO TELECONFERENCING: SUPPORT FOR THE ADULT LEARNER

Contact Information:
Researcher: Debra Walker   Supervisor: Tom Jones
   1. Master of Distance Education Program

Athabasca University
1 University Drive
Athabasca, AB T9S 3A3
Canada.
1-800-788-9041 ext. 6180

Invitation: As a student enrolled in Confederation College's Distance Education part-time day or evening course this fall semester, you are invited to participate in a research project.
The research assignment is to deliver a presentation about one of the topics described in your course, or already identified assignment via audio teleconferencing to your fellow classmates.

Description of Research: The purpose of this study is to examine the learning strategies available for adult students enrolled in audio teleconferencing courses at a community college.
If you agree to take part in this study, you will be asked to deliver two teaching presentations on specific topic approved by your instructor in class rather then just the one: face-to-face and by audio teleconferencing. I will give you directions for your presentations along with principles of teaching and learning, and an instructional design framework (ways to deliver the information).
You will be asked to complete a questionnaire that will gather data on your thoughts about your performance as an instructor of the content you delivered.
I will also be inviting all students in the class to take part in a focus group after the course is over. This will give everyone opportunity to share their perceptions of the experience.

Risks and Benefits: Participation in this research study is strictly voluntary and no marks will be assigned or lost in the dual delivery method presentation. Teaching the course concepts will enhance your learning experiences. Active involvement in the process makes learning more meaningful.

Right to Refuse: You are being asked to participate in this research project. However, you will be able to withdraw at any time during the period in which data is being collected, without prejudice. You may refuse to answer any questions in the questionnaire or focus group setting.

Privacy, Confidentiality and Anonymity: Steps will be taken to respect your privacy in this study. No names will be required on questionnaires. All data will be stored in a locked cabinet at the college and will be shredded on completion of the analysis. Only the researcher will have access to the original data from this study. No names will be used in the research report, now or in the future.

"**All information will be held confidential, except when legislation or a professional code of conduct requires that it be reported**."

Results of the study: Will be made available to interested participants. Please indicate your interest below.

"I have read and understood the information contained in this letter, and I agree to participate in the study, on the understanding that I may refuse to answer certain questions, and I may withdraw during the data collection period."

_____   _____
Signature   Date

"I am interested in a copy of the results of this research project."   Yes _____   No_____

APPENDIX D

Information Package to students

This is just a note to say thank you for volunteering to take part in my research study.

You have consented to give an oral presentation in your class by audio teleconferencing and then face-to-face to your fellow classmates. Your teacher is aware of your participation in this research and understands that no marks will be assigned or lost in the dual delivery method of your presentation.

In this package, I have enclosed the following papers:

1. A handout on "How to Give an Awesome Presentation"
2. A handout on "The Principles of Teaching and Learning"
3. A request for personal information that I need to put into the methodology portion of my thesis. This is for a demographic picture of my subjects only. It does not require your name, only data about your age, where you live (Northwestern Ontario, Central Ontario, etc.), and have you taken an audio teleconferencing course before. This request will be attached to the questionnaire.
4. The questionnaire for you to complete after you make your presentation. A self addressed, stamped envelope is included for you to return this information to me.

If you have any questions about the presentation or the study, please feel free to contact me by phone at (807) 475-6668 (I have voice mail and can return calls if you leave a message), or by email at walker@confederationc.on.ca

The purpose of this study is to examine the learning strategies available for adult students who are enrolled in audio teleconferencing courses at a community college. Your participation is greatly appreciated and valued. Hopefully, the results of this research will enable teachers to create a virtual classroom that will support the adult learner and enhance student satisfaction with distance education.

Sincerely,

Debra Walker

How to Give an Awesome Presentation!!

Plan your presentation. ⇒ It improves the quality, makes your presentation more effective and saves you time.

To prepare yourself to give the best presentation in class, answer the following questions:

What is the purpose of the presentation?
What do you want your audience to learn? Presentations should be clear and concise to convey the main points efficiently and effectively.

Who is the audience?
Contact the teacher prior to your presentation and find out more about your audience. Use simple, direct language. Avoid jargon and highly technical terms. Be yourself. Personalize your presentation by sharing your experiences. Involve students in your presentation. Respond to their questions.

What information does the audience need?
⇒Introduction. Body. Conclusion.
⇒Tell them what you are going to say. Say it. Then, tell them what you said.
⇒Content should be presented in a logical fashion. Stick to the facts – stay on topic. Use examples to clarify points that you want to make.

In what room/ space will you be giving your presentation?
Check it out before your presentation. Where will you stand/ sit to give your presentation? If you are using audio-teleconferencing unit, how does it work?

What is the best way to present the information?
There is no one best way to present your information. It depends on the kind of presentation, the size of the group, and the characteristics of the room.
Check on availability of equipment you may need, or what is present in the room. You can use the following methods by themselves or in a combination to get your points across:
⇒Lecture, Overheads, Handouts, Power Point, Videos, Flipcharts
⇒Be creative, organized and stick to the time allotted.

Practice! Practice! Practice!
The more you practice, the more familiar you become with the material in your presentation. This will decrease your nervousness. The more you rehearse, the more confident you become.
Above all – have fun. Teaching, and learning, should be relaxed and enjoyable. Don't forget to SMILE!

Principles of Teaching and Learning

1. Teachers' knowledge of the subject matter is essential to the implementation of important teaching tasks ⇒Teachers who know their subject matter thoroughly can be more effective.

2. Active involvement of the learner enhances learning ⇒The learner needs to work with and apply new material to past knowledge and to everyday life. Some of the methods that encourage active learning in the classroom are: discussion, practice sessions, structured exercises, team projects, and research projects.

3. Interaction between teachers and students is the most important factor in student motivation and involvement ⇒This often enhances students' intellectual commitment and provides valuable role modeling.

4. Students benefit from taking responsibility for their learning ⇒Students are more motivated when they take control of their own learning.

5. There are many roads to learning ⇒Understand that each student has unique strengths and weaknesses related to the ways in which they approach learning. Providing a variety of learning activities for a class enables them to choose the activity that is the most effective for them at the moment.

6. Expect more and you will achieve more ⇒Convey to your students that you believe in their ability to succeed.

7. Learning is enhanced in an atmosphere of cooperation ⇒The opportunity to share ideas without threat of ridicule and the freedom to respond to the ideas of others increases complexity of thinking and deepens understanding.

8. Material must be meaningful ⇒New material will be more easily learned if the learner is helped to see its relationship to what s/he already knows, and is seen as relevant to his or her own problems and experiences.

9. Both teaching and learning are enhanced by descriptive feedback ⇒Without feedback neither learner nor teacher can improve because they will not know what they need to know or if they are meeting objectives. Correct responses should be immediately reinforced to increase the "permanence" of learning. A smile or comment to let the learner know he or she has successfully completed the task is especially good. Awareness of successful completion is, in itself, the most effective of all reinforces.

10. Critical feedback is only useful if the learner has alternatives to pursue ⇒There is no use giving teachers or students feedback about their performances unless they can do something about it, i.e. unless they have some alternative course of action or behavior.

11. Time plus energy equals learning ⇒Teachers who arrive a little before the scheduled time and stay around for a few minutes afterward provide opportunities for valuable interaction between students and teachers. Students must learn how to organize their time so that they can find time to study.

12. Experience usually improves teaching ⇒Effectiveness is increased for teachers who obtain feedback about their teaching and who are flexible enough to modify their methods in response to that feedback.

APPENDIX E

Student Presentation Questionnaire

Student Presentation Questionnaire

Directions: Please complete the following questionnaire after giving your presentation in class.

For questions 1 to 8, just circle the response that best describes your agreement with the statements regarding the delivery of your material. Questions 9 to 16 are simply asking for your comments and may recorded in point form.

To maintain anonymity, please put completed form in the self-addressed stamped envelope provided. Forms will not be analyzed until completion of all presentations in class.

1. The teaching guide provided by the researcher gave me some helpful information on teaching and learning principles that I could use to help me teach the topic or unit.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

2. I know how to obtain any of the materials or equipment that I need to help me teach the topic or unit in the **face-to-face classroom**.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

3. All the materials and equipment that I needed to teach the unit in the **face-to-face classroom** environment were <u>available to me and easy to access</u>.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

4. I know how to obtain any of the materials or equipment that I need to help me teach the topic or unit in the **audio teleconferencing classroom**.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

5. All the materials and equipment that I needed to teach the topic or unit in the **audio teleconferencing classroom** environment were <u>available to me and easy to access</u>.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

6. I found the topic or unit easy to teach in the face-to-face classroom.

   Strongly   Agree   No Opinion   Disagree   Strongly
   Agree   Disagree

7. I found the topic or unit easy to teach in the audio teleconferencing classroom.

Strongly   Agree   No Opinion   Disagree   Strongly
Agree   Disagree

8. Teaching strategies have to be altered when presenting information in an audio teleconferencing classroom versus a face-to-face classroom.

Strongly   Agree   No Opinion   Disagree   Strongly
Agree   Disagree

9. What teaching strategies did you use in giving today's presentation in the **face-to-face classroom**?

_____

_____

_____

_____

10. If you had more time, or support what teaching strategies would you like to use or would find helpful in giving a presentation in a **face-to-face classroom**?

_____

_____

_____

_____

11. What teaching strategies did you use in giving today's presentation in **the audio teleconferencing classroom**?

_____

_____

_____

_____

12. If you had more time, or support what teaching strategies would you like to use or would find helpful in giving a presentation in an **audio teleconferencing classroom**?

_____

_____

_____

_____

13. How useful was today's presentation session in helping you learn the material? Do you think presenting information helps you learn it better?

_____

_____

_____

14. What characteristics do you think learners in the **face-to-face classroom** must have in order to be successful in learning the content?

_____

_____

_____

15. What characteristics do you think learners in the **audio teleconferencing classroom** must have in order to be successful in learning the content?

_____

_____

_____

16. Additional comments?

_____

_____

_____

_____

Demographic Information

The following information will be used to describe the subjects in my study. I will present this information in the "Methodology Section" of my research paper:

Please circle the appropriate answer:

Have you ever taken an audio teleconference course before?   Yes   No

Male/ Female

Age Group:
        19-29
        30-39
        40-49
        50 and over

Location of classroom:
College campus
Contact North site
Other _____

Where do you live?
Thunder Bay
Northwestern Ontario
Northern Ontario
Central Ontario

Thank you for participating in this research project and for taking the time to complete this questionnaire.

APPENDIX F

Blackboard Focus Groups letter

Blackboard Focus Groups

Hello everyone.

My name is Debra Walker. I am currently doing a research project through Athabasca University entitled: AUDIO TELECONFERENCING: SUPPORT FOR THE ADULT LEARNER.

At the beginning of the semester I asked students enrolled in Confederation College's Distance Education audio teleconferencing courses to take part in my research. The first part of the study involves students volunteering to make a presentation by audio teleconference and then making the same presentation face-to-face in front of their classmates. Once done, each student will complete a questionnaire that will gather their thoughts about their performance, and the supports available to help them.

The second phase of the research project is to set up focus groups that allow all students enrolled in each of those classes to share their thoughts about the audio teleconferencing experiences. I will set up a discussion board in Blackboard for each course involved in my research. You are invited to post comments on these boards. All data will be held confidential and used solely for the purpose of the study. No student name will be used with the questionnaires or accompany data accessed from the discussion boards. Only the researcher (myself) will have access to all the original data from this study.

I am attaching a form that outlines how you can access your course on Blackboard for the purpose of this study. If you have any questions about Phase Two or accessing Blackboard please call me at (807) 475-6668.

Thank you for this opportunity and your participation in my research.

Sincerely,

Debra

See handout Getting Started with Blackboard – for Students

Getting Started with Blackboard – for Students

1. Connect to the Internet. If you are using a computer at the College, you are automatically connected.
2. Launch Internet Explorer.
3. Click in the Address Bar, and type the following:

   http://confederation.blackboard.com   (note the absence of www)
4. Click Go or press Enter.
5. When the Blackboard login screen appears, click the button labeled Login.
6. In the next screen, type your Username and Password.
   a. Your Username is the first part of your College e-mail address

      for example: cstudent
   b. Your initial password is your 14 digit student number

      You should change the password during your first session.
   c. Click the Login button.
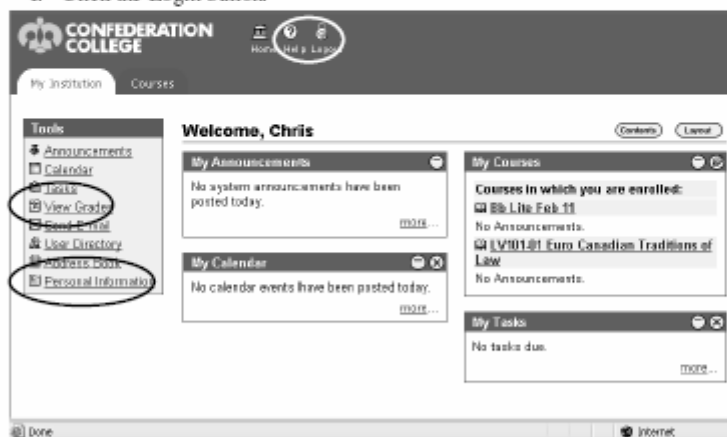
7. Take a moment and look around the My Institution page.
8. In the list of Tools, choose View Grades.

   Choose a course and you can see any grades entered.
9. Click the Tab marked My Institution and choose Personal Information | Change Password.

   Type your new password twice, and click the Submit button.
10. When finished with your Blackboard session, click Logout.

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APPENDIX G

Blackboard Focus Groups reminder memo

Blackboard Focus Groups

This note is just a quick reminder from Debra Walker about the Blackboard Focus groups that I have set up in regards to my research project through Athabasca University entitled: AUDIO TELECONFERENCING: SUPPORT FOR THE ADULT LEARNER.

The second phase of my research project is well under way.

If you have not already signed on to Blackboard and posted your comments please take a few minutes to do so now.

REMEMBER:

⇒ Your user name is the first part of your college email address. That would be the first initial of your first name and the first 7 letters in your last name. Example: dwalker.
⇒ Your password is the 14 digit number assigned to you on your admit to lecture form. You can change your password once you access the Blackboard course.
⇒ If you are enrolled in more than one course, you can make comments in whatever course you are enrolled. Example: AB300 or GE144.
⇒ Once into the course Blackboard, click on the Discussion Board on the left side panel. There are three questions you can comment on.
⇒ You can post anonymously.
⇒ You can access Blackboard at any time, day or night.
⇒ All data will be held confidential and used solely for the purpose of the study. No student name will be used with the questionnaires or accompany data accessed from the discussion boards. Only the researcher (myself) will have access to all the original data from this study.

If you have any questions about Phase Two or accessing Blackboard please call me at (807) 475-6668 and leave a message
       OR
Call Joe Donlon at 1-800- 563-9435. He can help you or connect you to the Computer Help desk at ext. 6488.

Thank you again for this opportunity and your participation in my research. I do hope to submit a summary of my research to the College to help with future delivery of audio courses and the support of our adult learners. Your comments can make a difference.

Sincerely,

Debra
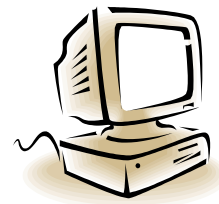
APPENDIX H

Log sheet for follow-up telephone interviews

Student Presentation – In-depth Interview

1. What expectations if any did you have about taking an audio teleconferencing course?
2. How many have you taken?
3. What did you find you liked the most about the teleconference?
4. What did you find you liked the least about the teleconference?
5. How do you find audio teleconference courses differ from regular f2f classes?
6. Do you think that in audio teleconferences most students get a chance to say something or if they really wanted to say something that they'd have a chance to do that?
7. What kinds of teaching or learning strategies, such as handouts or lecture notes do you think would help you in the in the audio teleconference classroom?
8. Do you think the use of other technologies, like emails and Blackboard, used at the same time, as the course would be helpful?
9. How do you feel bout seeing or not seeing the teacher in the classroom with you? Does it affect your learning?
10. What advice would you have for your teacher or for a new teacher who is about to teach a course by teleconference?

That completes all the questions I have, do you have any questions or comments? Thank you for taking the time, I really appreciate your help.

Appendix I

Student Presentation Questionnaire with results tabulated

9 Students responded.

11. The teaching guide provided by the researcher gave me some helpful information on teaching and learning principles that I could use to help me teach the topic or unit.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1	6	2		

12. I know how to obtain any of the materials or equipment that I need to help me teach the topic or unit in the **face-to-face classroom**.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
	9			

13. All the materials and equipment that I needed to teach the unit in the **face-to-face classroom** environment were <u>available to me and easy to access</u>.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
2	5		2	

14. I know how to obtain any of the materials or equipment that I need to help me teach the topic or unit in the **audio teleconferencing classroom**.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1	8			

15. All the materials and equipment that I needed to teach the topic or unit in the **audio teleconferencing classroom** environment were <u>available to me and easy to access</u>.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
2	7			

16. I found the topic or unit easy to teach in the face-to-face classroom.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
2	6	1		

17. I found the topic or unit easy to teach in the audio teleconferencing classroom.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
	4	1	4	

18. Teaching strategies have to be altered when presenting information in an audio teleconferencing classroom versus a face-to-face classroom.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
4	5			

19. What teaching strategies did you use in giving today's presentation in the **face-to-face classroom**?

S1- Eye contact and more facial expressions
S2- In the face-to-face classroom I had better attention from the audience. Handouts were easier to dispense and it was easier to share statistics.
S3- In the face-to-face it is much easier to make a statement through visual guides like pictures, movies, slide show or even just hand gestures can indicate what you mean.
S4- group involvement, Q&A with eye contact, senerios
S5- Eye contact, hand gestures, Pictures from magazines
S6- I used the active involvement of the learner. enhances learning because I felt that we could get more into the topic with discussion and doing projects.
S7 - No comments written.
S8 - Ask students for responses to questions, lecture, relate topic to paramedicine.
S9 - Looked for confused expressions to detail articles or descriptions. Allowed better timing for any questions.

10. If you had more time, or support what teaching strategies would you like to use or would find helpful in giving a presentation in a **face-to-face classroom**?

S1- Visual aids ie. Blackboard, overheads
S2- Power point would be an amazing tool that would make presentations easier
S3- I would have like to use a slide show presentation. You can include a lot of information and go through in a limited amount of time
S4- No
S5- More visuals (newspaper clippings, articles, posters)
S6- If I had more time I would find that using materials would have been very helpful because there would be a better understanding of the topic.
S7- I would have used some visual aids.
S8 - Visual aids, eg. Power point
S9- Possibly overhead projector with illustrations.

11. What teaching strategies did you use in giving today's presentation in **the audio teleconferencing classroom?**

S1- Slow, precise pronunciation
S2- In the audio teleconference classroom we had to dispense handouts three weeks prior. It was harder to get responses from the audience and involve the entire group.
S3- Just to speak clearly, and note a few main points
S4- I used lecture style and Q&A formats
S5- Used a handout which our group sent to different locations ahead of time
S6- I knew about my subject so it made the presentation go a lot smoother. It was easier for people to listen.
S7- No comments written.
S8- Lecture, relate topic to paramedicine.
S9- Research papers and articles laid out. Extra notes laid out. Allowed time for questions or comments.

12. If you had more time, or support what teaching strategies would you like to use or would find helpful in giving a presentation in an **audio teleconferencing classroom**?

S1- Perhaps ad-libbing adding personal stories to personalize the information and keep the listener's interest
S2- I guess you could plug into a blackboard discussion for a round-the- table discussion after the presentation
S3- I would like to send my slide show to those at the other sites to see what I was actually talking about.

S4- I would have liked to use the telewriter and surveys to illustrate my point and have a firmer grasp on what to concentrate on.

S5- More opportunity to have class participation. More handouts, quizzes, statistics

S6- I would have liked to have a lot more feedback, and I guess that if there was more time that would have been able to happen.

S7- I may have used a telewriter if that option was available.

S8- Some type of media which enables student to see visual aids.

S9- Possibly taped segments of lectures such as XXX classes.

13. How useful was today's presentation session in helping you learn the material? Do you think presenting information helps you learn it better?

S1- Very useful. Yes I think presenting info further cements it in a person's mind as sensory pathways are enhanced ie. Visual and auditory

S2- Yes, the more you rehearse the material, you understand it better and remember it better.

S3- I believe presenting leaves an impression with you because it is being done by your peers instead of a teacher, also you want them to listen to yours so it is a sign of respect.

S4- First we learn, then we write, then when we present we further reinforce our memory. So, Yes I think it helped me learn the topic at hand better.

S5- It was very helpful looking up the info. By researching and presenting I was able to learn more about the topic.

S6- I think that presenting over audio-conferencing does not help me learn. I feel that I learnt more just doing the assignment. Presenting face-to-face helps to learn the materials better, because more can be done.

S7- Very useful and yes "teaching" definitely helps in learning material.

S8 - 1. Very useful. 2. Yes.

S9 - Forced into total understanding of topic in detail, to be prepared for questions.

14. What characteristics do you think learners in the **face-to-face classroom** must have in order to be successful in learning the content?

S1 - Good visual and auditory recall. Perhaps comprehensive note taking.

S2- The learner must be ambitious and interested in the topic. They must be attentive and ask questions when they do not understand. They should look through handouts prior to presentations.

S3- Attentive, ask questions, understanding

S4- Learners in face to face must be aware of their learning style. Be it audio, visual or motor type learning, some people who fidget, while disconcerting to presenters may actually be a learning aid.

S5- Good listening skills. Interest in the topic.

S6- Listening skills, visual skills, participation.

S7- They have the opportunity to see the presenter.
S8 - Rested. Interest in topic. Desire to learn.
S9 - Presentation qualities, not boring, not dragging on, and not one tone from start to finish.

15. What characteristics do you think learners in the **audio teleconferencing classroom** must have in order to be successful in learning the content?
S1 - excellent auditory recall and listening skills
S2 - ability to learn through auditory techniques and comprehensive note taking
S3 - The learners in the audio teleconferencing classroom must be very attentive and not be afraid to ask questions.
S4 - Attentive, questionable, understanding imagry or have a good imagination
S5 - In audio conferencing the learner needs to review, go through and evaluate what studying skills work best for success
S6 - Good independent learning skills. Good listening skills. Knowledge about the subject.
S7 - Good listening skills (big thing). Independence. Willing to get involved (participate). Good clear communication.
S8 - Interest in topic. Desire to learn. Ability to focus on learning (only using sense of hearing – other senses can take the students away from the task at hand).
S9 - Strong clear voice, ability to pronounce all words and a certain level of excitement of voice tone.

16. Additional comments?
S1 - Interesting experiment
S2- I found it much harder to teach the material via audio teleconference that the face-to-face presentation. It is always easier to be attentive when you actually see the material or the presenter.
S3- None at this time
S4- No comments written
S5- No comments written
S6- I just want to say that it is very hard to pay attention in audio conferencing if the teacher does not make things interesting.
S7- No comments written.S8- Gave me an insight on the difficulty that teachers must overcome. Great learning tool for me.
S9 - It was a definite learning experience. XXX has a excellent style to the presentation of his lectures and lets you get involved with comments and questions.

Appendix J

Blackboard focus groups posted comments

Questions for Blackboard Focus Groups:

1. What types of teaching strategies or classroom supports do you think would help you learn in an audio teleconferencing classroom?

2. Can you describe a specific example of something that a teacher, fellow student or you yourself used that has helped you learn in an audio teleconferencing classroom in the past?

3. Can you describe a specific example of a strategy or support that presented a barrier to or discouraged your learning in an audio teleconferencing classroom in the past?

Posted Comments:

AB104 (83&99) 1 respondent out of19

S10 Q1. The only thing I can think of that may enhance the learning in the audio teleconferencing classroom, would be to maybe utilize some type of video conferencing instead. This would make the learning experience a little easier and a little more personal.

S10 Q2. One of my teachers used to make analogies to common things so that we would could visualize (in our heads) and/or understand a little easier.

S10 Q3. One of my past teachers made a horrible habit for constantly reading out of the text for the duration of each and every class. This was very discouraging, as I could have just as easily read the book WORD FOR WORD on my own time instead of paying someone else to read it to me.

AB300 (83&99) 5 respondents out of 38

S11 Q1. A few subjects we recieved over the years were a bit boring. Maybe having a vidio conference once and awhile could break up the learning pattern. Or having a small break for three or four minutes in the middle of the lecture would work. Having two classes back to back tends to be a challenge. After being at work or having to be still at work with courses, 5pm to 10 or 11pm is not a good thing for the instructor and the student when the student falls asleep for a couple of minutes. One class we heard someone snoring because of an open mike. Quite funny but annoying.

S12 Q1. I must agree with the previous answer, a teleconference (live feed) with the teacher would be benificial now and then. Besides it would put a face to the voice that i keep hearing over the airways, making it a little more personal. If I can refer to XXX class, if he is anything like what he is at the labs we attend with him, I know we are missing a lot of information.

S13 Q1. Yes that was abit amusing with the snoring in the mike, but as it went on it wasn't so funny. I really don't feel that we need a 3 minute break, I would just as soon continue on and get it done. I do however work most of the time in a room all by myself with a speaker phone and it is great because it is easier for me to absorb the material presented. Being able to do it with a speaker phone at the base enables me to remain within the community. I am very pleased with the presentations. I do enjoy knowing what is going to be presented the following week so I am able to possibly review some of it ahead of time. It really helps to understand the subject when it is presented.

S14 Q1. I found the CDs and website info provided with our texts very beneficial when reviewing for quizzes. I went on-line and did the tests and used the flashcards provided on the websites. Especially good were Abnormal Psychology, A & P, and Sociology for Community Living. I find it easier to learn if I use the study guide questions and the website information provided. It was great doing the tests and finding out the marks immediately. If you didn't know the answer it would give you a hint where to find the answer. I also use other websites with exams to practise. It's almost like playing games.

S15 Q1. The problem is time to add more to our learning tasks. I think this could be a tool of great value, and help to those in isolation or just lost.

S11 Q2. One strategy which works for me is when the instructor uses analogies in relation to the idea they want to get across. Also I liked it when the instructor or other students presented relavent stories which was associated to the subject we were discussing.

S12 Q2. I must admit that I have no complaints on how the delivery of the courses have been given so far. I do believe that I have been fortunate to have had excellent teachers and that they have managed to utilize all their educational tools to better educate me. Excellent review sheets, allowing us to tape the sessions, and simply breaking it down to lay-men terms, thanks.

S13 & 14 Q2 no response

S15 Q2. XXX is one great instructor. He is very knowledgable and utilizes our time wisely. Being able to use comparisons when dealing with difficult areas is very

helpful. He has high expectations for us. I just hope that I am able to keep up to his standards. We are fortunate to be in his class.

S11 Q3 no response

S12 Q3. A few items which bothered me during my learning was.

- When people were talking about nothing relavent to the subject (wasting time)

- Instructors reading directly from the text. (I could read it on my own)

- Having a group presentation is a good learning strategy. Having to call or Email all over Ontario to make this presentation happen, was difficult.
- Having people arrive 5-10-15 minutes after the class has already started requiring the instructor to repeat the intro to the evening was somewhat discouraging. If late students could recieve this same info at the tail end of the class it would be better.

- Also a lot of students are on call or actually working during some of these lectures. Because of this situation they are required to leave and miss some of the lecture. Having a tape purchased and sent takes to long and has no benifit because the next two or three lessons and or exam has already taken place before it arrives. Maybe having the proctor tape it in each location is an idea.

P.S. I really enjoy participating in xxx's class. He has a excellent way of presenting his lectures. With xxx there is no need for a visual example or a break. With his analogies examples and his no wasteing time approach, its perfect.

S13 Q3. Wow, my hat goes of to the first guy or girl who replied to this question, because he nailed it all. There is nothing worst then to have someone disrupt the class when it has already been started and have the teacher try to bring him up to speed. One thing that I can recall that is irritating is the people on speaker phones, aren't you aware that you can be heard throughout the region and that you are interfering with class!!! I have paid my dues like everyone else to be educated by the teacher and not to listen in to 2 or 3 people who all of a sudden decided to talk about how their day was. What happen to common courtesy? I can recall one incident where I could hear a hockey game throughout the entire course, and I hate hockey!!!

S14 Q3. I use a speaker phone as many others do. I probably spent way more money than I had to to get a good one. It is not necessary to have everyone hear what is going on around you. A good phone has a mute button to enable the person to listen only. I works great and I can be heard well when I disable the mute button. I find it very irritating to use valuable time during class to hear someone tell us that they have worked so many years and done absolutely everything. And in their service it is "done this way." Several of our classes were interupted by the same person. We pay good money to hear our instructor tell us the proper way to do things. If the information is irrelevant, then it need not be included in our class.

S15 Q3. I believe the barriers to learning mostly is the lack of visuals on some subjects. We live in a world of great CD productions and my be this would help. Some course material should be developed on CD as well as class subjects in a clean CD format instead of tapes. The collages should develope some learning such as A&P in a CSI, CD assist approach. Some class handouts need to be improved also, the paramedic need and continue learning is not going to go away.

CS117 (84)   0 respondents
No comments

GE142 (83&99) 1 respondents out of 4

S16. Q1. I feel that more visual stimulation would be an excellent strategy in the audio teleconferencing classroom. There should also be more group stimulation and interaction with other students.

S16 Q2. I have had some teachers who are very familiar with the equipment & blackboard and have stimulated and encouraged discussion. These same teachers have also provided pre-work to the students to help prepare the students for class by familiarizing them with the day's class content.

S16. Q3. I have had teachers who are very unfamiliar with the equipment ie. unable to combine with other media such as showing students a video during presentations. I have also had teachers who have not encouraged discussion (have never logged on to blackboard) and do not attempt to minimize the noise that distracts s participant s as well as cuts out the teacher or speaker.

GE144 (83&99) 3 respondents out of 18

S17 Q1. I believe that a video conferenceing and/or the blackboad should be of good use with VERY course offered. This will allow the student to feel more apart of a classroom and would allow for better communication between the teacher & their students & between the students themselves.
I live is a fairly isolated cxommunity & I have only taken my courses via audioconferencing. They were not set up with the use of a blackboard or videoconfrecing, at times this makes learning very difficult. Sometimes you cannot hear or understand what is being said, therefore you miss out on what is being covered or the teacher is speaking too quickly & you onley get a bitof what is being discussed. At tiimes like that I often question what I am paying for.

S18 Q1. Study guides, the telewriter, self-testing activities.

S19 Q1. It is good to have some handouts ahead of time and the telewriter is good too if everyone has one. Some teachers have brought in tapes and guest speakers

from our field of study and that went over well. I like having the instructor there but it was good to get a working person giving us the insight and having an open forum. The instructor that verbally prompts the students in the various sites at the beginning of the class works good. It breaks the ice and gets people talking. I think most people appreciate what an audio conferencing can do and let people talk before interupting.

S17 Q2. I a couple of my courses certain instructors gave out handouts (when the topic covered was not available in out text book(s)). They would then cover this in an up coming class. This was extremely helpful in that it gave us all common ground, everyone was looking at the same thing. I found by doing this it lead to better topic discussions.
Secondly, when an instructor actively picks people to answer questions or asks then for their opinion. When you are sitting all alone in a room it is very easy to get side tracked by thinking of other things. By doing this, it not only makes you pay attention more closely but it gets you actively involved in the class, you tend to retain more and get more out of the classs.
Thirdly, discussion with your peers, sometimes you just need to reach out & call or e-mail someone. You not only get another persons point of view but you're also learning in the process.
And lastly by being able to get in touch with your instructor easily & efficiently. Whether it's by phone or e-mail. And most importantly for them to get back to you in a timely fashion.

S18 Q2. Doing the self-testing activities in the study guide. When the teacher emailed me back promptly.

S19 Q2. The teacher and other students were all from different sites and we were discussing strategies. It was beneficial for me to hear how other people have their unique ways of retaining information. Ideas were good and diverse and I adopted them to use for my own studying. This wouldn't have been available to me if I was doing it by Independent Study.

S17 Q3. The largest barrier for audio/teleconferencing is the quality of the lines. It is EXTREMELY frustrating when you have paid for a course and you cannot understand what anyone is saying. At times this is easily corected but not always. It is very frustrating whenyou have to have your volume on high to hear the instrcutor because their line might be coming through very low while evryone else is making you deaf because they are coming through LOUD & at times clear.
Secondly, when handouts are to be distributed some but not all students recieve them, this then leads to a delay in the class because now they have to be faxed to the people who are missing it.
Lastly, when an instructor if found at the last minute to teach a course. I was recently in a class where this happened & the instructor not only missed the 1st class but when he came for the 2nd (& so on) he was not sure what exactly the layout of the course was. This type of situation should not occur.

S18 Q3. When the materials for the course arrived late. The equipment – they need better audio-video equipment. It didn't always work right. Sometimes it was very hard to under stand. The sound was not clear on some occasions.

S19 Q3. A specific example of a strategy or support that presented a barrier/discouraged me: The teacher/instructor was late and new to the equipment and was uncomfortable with the technology. Her voice was quiet and we had trouble hearing her. It took a couple of classes for her comfort level to increase and it detracted from the material and content delivery. They should train the instructors in mock classes to ensure the students are getting what they paid for.

PN324 (99) 5 respondents out of 22

S20 Q1. I feel that the biggest drawback to the setup in our facility was the lack of "realtime" audio. We were hindered by a lack of microphones and overhead microphones that were not operational. The time delay in speaking also hindered interactive discussion. Technical difficulties with audio also played a part at times in increasing frustration. I think that because this was a first time experience for most of us, rules of conduct would be beneficial so that the group knows what is expected, how the system works and how to participate in a manner that maintains a sense of control in the classroom ie; raise hand and wait to be called upon before speaking.

S21 Q1. This was a difficult class for me as I am a very visual and hands on learner. To go from being able to see everyone around me, I had to visualize in my mind a face for all these voices I heard around me. Photographs were provided for us to see the other students but this was still difficult. As far as teaching strategies go, I think they were hit bang on in that photos were provided, silence and attention was for the most part maintained. This was very important as it was difficult for the out of town students to hear us through the chaos. The only thing I can think of that would have been helpful is more mics in the room. The overhead mics were a joke. There should have been 1-2 mics per desk so that there was more organization.

S22 Q1. I think the teleconferencing classrooms would have been better and will be better once the instructors are taught how to use the equipment properly. There were many disruptions in class time due to the eqipment not working properly. Once all the overhead mics are in place it will be better. As for teaching strategies... the instructors did stress the importance of remaing quiet throughout the course and espescially when audio was in place. Disrespect, and talking out of turn from fellow students makes it hard for the rest of the class.

S23 Q1. I think I am a visual learner so what would help me in the audio class would be some visual things like handouts, a good textbook that is easy to follow, when the teacher gives examples that I can relate to, and even websites on the internet that I can check out before going to class.
This is neat. The Blackboard. These discussion boards are great way to talk and if

there were more documents, handouts here that I could get into whenever I wanted to that would help too.

Besides seeing things I like to have discussions in class. As long as the teacher or someone controls it so that not jus tone person is saying everthing all the time.

S24 Q1. More visual stimulation would be great. I don't consider myself to be an auditory learner and I am easily distracted by other stimuli in the classroom. It would also be great to have more interaction and stimulation with the other students. I think that may have benefited the students in Kenora who appeared to be completely tuned out or sleeping at times. I can't blame them.

S20 Q2. I found that the small group project conducted via audio conferencing ("star phone") provided an opportunity to work outside the box. It introduced us to a situation that we will face in our career, that being conducting meaningful consultation with others without the benefit of being face to face. The traditional non verbal cues that we rely upon in normal conversation were obviously lacking and it created a situation where clear concise conversation was required to make our points. I think this made us more attentive to detail and also allowed for courteous discussions.

S21 Q2. Photos of "faceless students" provided by the teacher were really good. One to one mic while doing class presentations was nice b/c we didn't have to repeat everything we said while waiting for the mic to be passed to us.
Active listening skills were enhanced for many of us.

S22 Q2. I can't really think of one specific example that has helped me learn. But I can say that it was nice to communicate with the Kenora group, and that their input into classroom dicussion was an asset to my learning experience. This would not have been possible with out tele conferencing.

S23 Q2. The one class that we had that was audio, the teacher started it by giving us pictures of each other and her. This helped me see the other students at the other site.
We had to do a presentation in class. The first time we just presented by ourself, but the second time we did it in a group. We even had group meetings by the audio classroom. That was different. I got to feel closer to the students in the other site because of the meetings. We even did a discussion board for our group on Blackboard. That was good. Hard at first, but the more I used it the easier it got. The teacher also asked us questions in class. It made me pay attention and also feel part of the class.

S24 Q2. I have had some teachers who are very familiar with the equipment and use of the blackboard. There are also some teachers who have provided us with pre-work, which helps to prepare us for class and in turn generate more discussion. When teachers are familiar with equipment and prepared for class, it makes the learnig experience much more positive and enjoyable.

S20 Q3. 2 barriers to positive learning come to mind. The first being the lack of attentiveness, and disrespectful background noise when others were talking. This created a problem with hearing what was being said over the speakers and I'm sure that the noise created in our room carried over the microphones and disrupted students on the other end. This first barrier I think goes hand in hand with technology that is in its evolutionary stage. Time delays in transmission, equipment failure, lack of experience with the equipment at times created frustration. As technology improves and becomes more a part of our daily communication strategies, this barrier will become less of an issue.

S21 Q3. I really did not enjoy audio conference in such a large class. There was too much disrespect amoung the students (ie. talking). However, in small groups working on projects through only audio conference, it was great b/c it was like talking on the phone or messager on the internet.
Equipment malfunction was very disrupting though we have grown used to this with new teachers constantly learning the equipment we sometimes have to help them with!
Overhead mics were horrible as they sither did not work at all or they picked up the most minute noises magnifying them over the airways.
Mostly though, I feel that smaller groups would be much more effective.

S22 Q3. A few barriers were the lack of instruction the teachers were given, classroom disruptions, and equipement breakdown. Once everyone becomes acustomed to tele conference routines, these barriers should be almost non existant. I really like the fact that I was able to interact with the other groups in Kenora. This is very new to our college and everything takes time.

S23 Q3. The equipment has to work and the teacher has to be organized. It is no good if I get the handout after the class. Class notes would help. The teacher would give us some notes in a handout, just brief comments but that helped. It was really hard to just listen and write what she said.
When the handouts or books are late coming that is a barrier.
Three hour classes just listening to the teacher talk are very hard and boring. It was good that the teacher would change things like writing notes sometimes, discussions sometimes. A video to see would be nice sometimes, but I don't know how that would work.

S24 Q3. Noise ie. people talking is extremely hinderent to the learning experience in the classroom. At times the noise level becomes so loud that it distracts participants as well as cuts out the speaker and teacher. The teachers need to express more the importance of raising your hand before speaking and allowing other people (especially Kenora) an equal oppurtunity to speak and answer questions in the classroom.

Appendix K

Both student presentations – In-depth telephone interviews:
SI-1 (K) and SI -2 (J)

January 2, 2004 1400 hours

This was a telephone interview as student preferred it rather than coming in to the office. The researcher (R) asked the student (S) to speak slowly as she was writing word for word what was said. The researcher explained that there were 10 questions and that it would take approximately 30 – 40 minutes to complete. To protect anonymity of the participant references to teachers, other students, or cities and towns have been changed.

R. What expectations if any did you have about taking an audio teleconferencing course?
S. I had thought that I would have had more interaction with other students in the other classroom
R. The distance education classroom?
S. Yes. Well, I didn't know what to expect actually. I hadn't done anything like that in high school, or any other courses.
R. Did you find you were guided in your course to talk to the other students?
S. Yes, for the most part. Some new teachers had not taught before by distance and did not always do that.
R. How many courses have you taken by audio teleconferencing?
S. 5 or 6 courses.
R. What did you find you liked the most about the teleconference?
S. It brings all different people together, even thought we're 100 miles apart and under one roof.
R. What did you find you liked the least about the teleconference?
S. A couple of things. Some teachers were not familiar with the equipment. The acoustics were bad sometimes, especially when everyone was not being quiet.
R. It made it hard to hear?
S. Yes, It was hard to hear. There was a lot of noise sometimes. And if one person monopolizes the discussion then the students out at the site can't concentrate and are not taking part. The other thing is that there needs to be one mike per person. In one of the classrooms we had, there was one mike per person. In another class, the overhead mikes didn't work and the teacher had to bring her mike to the students in the class so that the site students could hear us.
R. How do you find audio teleconference courses differ from regular f2f classes?
S. There was a lot less visual stimulation. Not like in the class where the teacher shows us overheads. There was less interpersonal communication because of speaking over the mike. It goes back to monopolizing the conversation. All students need to have a turn.
R. Do you think that in audio teleconferences most students get a chance to say something or if they really wanted to say something that they'd have a chance to do that?
S. No. Some teachers allow students to monopolize the conversation.
R. How can they control this?

S. By laying down the rules at the beginning of the class. Raise your hand or have the teacher establish a pattern using all the sites. The teacher could go from site to site and ask people.

R. What if students are shy about answering questions?

S. If you ask them their opinion and help them with the answers. One of our teachers did that. Let them know in advance you will ask different people at different sites so they can prepare, and help them out if they're shy.

R. What kinds of teaching or learning strategies, such as handouts or lecture notes do you think would help you in the in the audio teleconference classroom?

S. More pre-work so you know what to expect for the following class. Handouts and lecture guides for sure. Allow everyone to be a little more focused. Cause easier to be distracted.

R. Especially at the different sites?

S. Oh yah.

R. How about group discussions, audio teleconferencing groups?

S. Yes, that's a great idea and it would help to get to know the other students at the other sites better. You don't have the opportunity to talk one to one with them in class. They may open up a bit more.

R. Do you think the use of other technologies, like emails and Blackboard, used at the same time, as the course would be helpful?

S. Definitely yes. Blackboard used at the same time as the course would be helpful. R. Did you like using Blackboard?

S. Yes. It helped to stay in contact with the other students.

R. How do you feel about seeing or not seeing the teacher in the classroom with you? Does it affect your learning?

S. Yes. I always had the teacher in the classroom with me. It must be hard at the site if only the teacher talks. The teacher needs to pull the site into the conversation.

R. What advice would you have for your teacher or for a new teacher who is about to teach a course by teleconference?

S. Allow equal opportunity for all students to speak. And get to know the equipment.

R. That completes all the questions I have, do you have any questions or comments?

S. Yes. One more thing, bring in an outside guest speaker from one of the sites. It would be good for the students there and make it interesting.

R. Thank you for taking the time to do this interview. I really appreciate your help.

Interview concluded at 1430 hours

Student Presentation – In-depth Interview S2 - J

January 5, 2004 1100 hours

This was a telephone interview as student was not able to come in to the office. The researcher (R) asked the student (S) to speak slowly as she was writing word for word what was said. The researcher explained that there were 10 questions and that it would take approximately 30 – 40 minutes to complete. To protect anonymity of the participant references to teachers, other students, or cities and towns have been changed.

R. What expectations if any did you have about taking an audio teleconferencing course?
S. I wanted to have access to a course, being in a distance program, from a facility other than Contact North. This was a big thing for me because of my job. I thought I could take a DE audio course from anywhere, as there was not Contact North site staffed here (small town). So I thought if would let me call in from the Base.
R. How many have you taken?
S. My whole program has been by audio except for one 2-way video course. So about 8 courses a year times 3 years.
R. What did you find you liked the most about the teleconference?
S. I think the interaction and accessibility. I like being able to ask questions of other students as well as the teacher.
R. Anything else.
S. Yes, I liked it when we did our presentations. It was more relaxed atmosphere. Not so formal.
R. What did you find you liked the least about the teleconference?
S. The technical difficulties, and the telephone. At first we did not have a speakerphone at the Base. If you did not have a speakerphone, the phone was stuck to your ear and it was uncomfortable.
R. Someone got you a speakerphone.
S. Yes, that made it better. The other thing was that sometimes at the sites there would be problems with background noises.
R. What kinds of noises?
S. People talking, dogs barking, kids crying.
R. Why was that?
S. If students called in from home, or if a site had a speakerphone that didn't have a mute button it picked up all the background noise.
R. How do you find audio teleconference courses differ from regular f2f classes?
S. Well there is positive and negative.
R. What was it positive?
S. A good instructor passes along knowledge of the subject verbally as opposed to visually because with audio you can't see. So I've had good instructors that describe things very well and I can understand it. But I've had bad instructors that can't explain it or read from the book and that is bad.

R. Is it boring?

S. Yes it can be boring as well if all they do is read from the book. It also depends on the course too.

R. In what way?

S. A and P, Anatomy and Physiology is improved more by 2way but if it can't be then examples are really important. Even in a face-to-face classroom you can get teachers that read from the book.

R. Do you think that in audio teleconferences most students get a chance to say something or if they really wanted to say something that they'd have a chance to do that?

S. I think so. It is a more relaxed atmosphere. The person doesn't know where the instructor is and can just jump in and interact more.

R. Can you explain that a little more?

S. If the instructor looks busy or not in a good/ receptive mood you might be afraid to ask a question. But not knowing that you can just jump in and ask.

R. What kinds of teaching or learning strategies, such as handouts or lecture notes do you think would help you in the in the audio teleconference classroom?

S. Some courses with handouts take too long to get so a system that gets the materials like handouts there in time would be great. Lecture notes would help also.

R. How about overviews?

S. Some teachers are reluctant because students won't go to class then but if I have to leave for any reason I can catch up.

R. Why would you have to leave class?

S. I work part-time as a paramedic and sometimes I can get a call to go and I have to leave right away.

R. How about group discussions or a presentation? Did you find the presentation we did in class helpful?

S. Yes. You get different points of view. But the negative side of that is sometimes it's too much info or the student can go off topic. You need someone to control it.

R. Like a moderator?

S. Yah. And the teacher should lay out the ground rules at the beginning of each class.

R. Do you think the use of other technologies, like emails and Blackboard, used at the same time, as the course would be helpful?

S. Can be. When implementing new technologies in education it takes a while to catch on. Some students are reluctant; some are gung ho. We used Blackboard in class. It was a valuable learning tool for me. You can communicate with other students on the discussion board. You can talk to the teacher. When I did miss my class, I could get the notes from there. I really liked it actually.

R. How do you feel bout seeing or not seeing the teacher in the classroom with you? Does it affect your learning?

S. Yes it does. I think it does. I try in my work schedule to try and get to the site where the instructor is at least every other week. Sometimes on line, I get bored. Especially is the instructor is not familiar with audio teleconferencing, or the

information is very dry. When the teacher is in front of me I try and pay attention more.

R. You miss that in audio?

S. I think so. I think the visual cues are missing on how class is going, who's paying attention.

R. How do you think the teacher could change that?

S. In one of my classes, the teacher went and asked students at each site questions. That makes it less boring, and you have to pay attention because you don't know when they will ask you.

R.   What advice would you have for your teacher or for a new teacher who is about to teach a course by teleconference?

S.   Use real world examples if you can. Don't' read from the book.

R. Let the students see what you are saying?

S. Exactly. And also relax and have fun. If they are not used to audio they can be nervous.

R. That completes all the questions I have, do you have any questions or comments?

S. Some students like to know in advance what is going on in class, so use lecture notes or give me all my assignments up front so I can work on them when I can. To me this is adult learning. Some teachers say if you miss a class or presentation they won't repeat it or give you the notes or assignments. That is not right. So flexibility would also be important. It boils down to being appreciated because we are adults. I think that's all I want to say.

R. Thank you for taking the time, I really appreciate your help.

S. You're welcome.

Interview concluded at 1142 hours