

**STUDENT-TEACHER RAPPORT
IN VIDEO-CONFERENCING**

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Dedication

To my parents, Hazel and Adrian Hart, who always taught me that I could do anything if I put my mind to it.
To my husband, Kevin, who was always there with support and encouragement throughout my studies. Your turn is next!
Thank-you for believing in me.

Abstract

Education and delivery methods of this education to students are always changing. To teach students in geographically separated locations, many technologies are being used and one of these technologies is video-conferencing. However, the human element of education must neither be lost nor forgotten as we continue with new ways of educating students of the future. That is, the value of the student-instructor relationship and the critical role it plays in effective teaching and learning must be retained by distance educators. To develop a deeper understanding of the relationship between instructors and students of a video-conferenced classroom is the goal of this study.

This case study of student-teacher rapport in video-conferencing was conducted over a six-week summer course. Data were collected by questionnaire, student and instructor interviews, and class observations from both sites. From these primarily qualitative research techniques, several recurring themes emerged. All of these were central to the establishment and perceptions of an instructor-student rapport. Some of these areas were crucial to this video-conferencing case study and will serve to assist future educators.

The primary result of this case study was that very little rapport was established between the instructor and his students and it was perceived by the instructor and the students that this scant amount of rapport was sufficient. The paramount themes which were revealed include: the lack of name knowledge on the part of the instructor and the students' perception that this was acceptable; the technological problems; the question-asking procedures; and the amount of side-chatter and other off-task behaviours. All of these factors compounded to suppress the existence of an instructor-student rapport in this course. Recommendations for distance educators are included.

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CHAPTER I THE PROBLEM

Introduction

Education and the manner in which it is delivered to students are continually evolving. Many technologies are being employed to provide instruction to students in geographically separated settings. One of these technologies is video-conferencing.

As we proceed with new ways of educating students in the future, it is increasingly important to remember the human element of education. That is, distance educators must keep in mind the value of the student-instructor relationship and the crucial role it plays in effective teaching and learning. The goal of this study is to develop a deeper understanding of the relationship between instructors and students of a video-conferenced classroom.

Rationale

... The central issue [of a distance education classroom] remains the same as it has always been in the traditional classroom: the quality of the relationship and interaction between the teacher and the learner, and amongst the learners. However, our current lack of empirical knowledge of what happens between the distance learner and those responsible for program delivery who teach, grade and assist them is a major problem that affects the quality of programs. Distance educators acknowledge that they lack structured descriptions of what such helpers actually do and do not do and how their actions impact on student learning. (Burge, Howard, and Ironside, 1991, p. 5)

These remarks suggest the need for research into the area of student-instructor relations in distance education. The delivery of courses through distance education is growing at both the high school and post-secondary levels

as well as in terms of the technologies used. For instance, since 1987 Alberta Education has conducted distance education pilot projects and between 1987 and 1989, 40 schools became pilot sites for the development of new ways to extend high school education to students: 28 of these schools were in the south and 12 were in the north (Distance Learning, 1989).

According to D. Pon, the Distance Learning Implementation Consultant for the Alberta Distance Learning Centre in Barrhead, these projects were funded by a grant specifically designed to assist small high schools (i.e., fewer than 150 students) in developing a distance education program (personal communication, January 31, 1996). Last year (1994-1995), 118 schools received this funding and thus were offering distance education programs. This year (1995-1996), the grant was amalgamated with the instructional block therefore, statistics of the number of schools involved are not being kept. However, D. Pon estimates there to currently be 200 Albertan schools offering some form of distance education program (personal communication, January 31, 1996). The types of distance learning which are used vary from school to school and may include computer-assisted instruction and audio-graphic instruction but not likely video-conferencing due to the expense involved. These, and other types, of distance education will be discussed more fully in the next chapter.

At the post-secondary level, television is being used regularly for distance delivery of undergraduate courses in Saskatchewan and British Columbia (Bates, A.W., 1993). In the 1992-1993 school year, the University of Victoria offered 27 undergraduate courses using broadcast television programming, the University of British Columbia offered 11 courses, and Simon Fraser University offered 16 telecourses (Bates, A.W., 1993). According to A. Grant, in Alberta, an excellent reflection of the changing times

is evident in the 1991 name change of the “Alberta Correspondence School” to the “Alberta Distance Learning Centre” (personal communication, May, 1994). There are many different forms that distance education can take, ranging from correspondence to video-conferenced courses. Bates, A.W. (1993, p. 14) concludes that “instructional television has been widely and successfully used for undergraduate teaching, and its use is increasing.” [emphasis added]

The distance education field is growing and it is precisely because of this growth that determining the creation and perceptions of student-teacher rapport is increasingly important as well. As the quotation at the beginning of this section indicates, it is the quality of the relationship between the student and the instructor which is the central issue of any distance delivered classroom. Yet, there is a definite lack of empirical studies focussing on this topic. Therefore, I believe now is the time to conduct this kind of study to fill this empirical gap.

The reason for conducting this study in a qualitative manner lies in the term “rapport” itself. This is an abstract concept which consists of many elements, including “relationship”, “harmony”, “interaction”, and “compatibility”, all of which are extremely difficult to quantify. Even if a measurement of the degree to which rapport occurs could be made, it might still ignore the “quality” factor. That is, it would overlook that component of the “effectiveness” of this relationship in terms of teaching and learning. Therefore, by immersing myself in the video-conferencing atmosphere, observing interactions, interviewing both students and the instructor, and administering a questionnaire to the students, I hope to determine those elements that contribute to the creation and perceptions of effective rapport.

Purpose of the Study

I propose to conduct a qualitative study of the creation and perceptions of rapport between the instructor and students involved in a video-conferenced form of distance education. This study will be concerned with adult, post-secondary students. However, to protect the confidentiality of the participants, neither the course content nor the institutions involved will be divulged. The purpose of this study is to explore the dynamics of effective teaching with special attention to student-teacher rapport, within the particular setting of the video-conferenced, distance education classroom.

The research question is: "How did one interactive video-conferencing instructor and a class of students establish and perceive an effective rapport in both sites of a video-conferenced classroom?" Through the use of qualitative methods I hope to describe and accurately portray the events within this video-conferencing classroom. These included the instructor's efforts to develop an effective rapport, and/or the students' involvement in, and perceptions of, the creation of this rapport. Therefore, the ultimate goal was to consider both sides of the student-instructor relationship to determine: firstly, if the instructor perceived that effective rapport had been established; secondly, if the students perceived that an effective rapport had been established; thirdly, how the instructor understood this to have or have not occurred; and fourthly, how the students understood this to have or have not occurred. That is, for the latter two goals, which practices or techniques contributed to this occurrence so that recommendations for future courses could be made.

Limitations of the Study

There are a few limitations to be stated with regard to this study.

Firstly, since this study was conducted between two post-secondary education facilities, all results and conclusions have a limited application to post-secondary institutions and the education of adult students. Secondly, along with studying only two sites and one course, the class size was small and was not randomly chosen and only one instructor was involved. Thus, there is no generalizability to other distance education programs, students nor instructors. However, through their exposure to rich, detailed descriptions of the situation, readers may be able to draw conclusions of their own about the applicability of my discussion and conclusions to their unique situation.

Assumptions

Although I have created a characterization of rapport, it is really a construct for rapport. Therefore, I am assuming that one can infer the abstract concept of rapport through observations of people's behaviours, interviewing both students and the instructor, and by surveying student perceptions. I am also assuming that rapport is crucial for effective instruction.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

This discussion will focus upon the video-conferenced form of distance education while also attempting to define effective teaching and most specifically the establishment of teacher-student rapport within this particular context. I will define distance education and then provide a brief discussion of the various types of distance education. This preliminary discussion will lead to a thorough elaboration of video-conferencing which will become the primary focus of this document.

The next section will explore the question, what is effective teaching? Some relevant literature will be examined to respond to this question.

The final section of this review, will link these two main areas, thereby developing a theoretical account of instructor-student rapport within the video-conferencing form of distance education.

Distance Education

Definition

According to Willis (1993, p. 4) "distance education takes place when a teacher and student(s) are separated by physical distance, and technology (i.e., voice, video, data and print) is used to bridge the gap". Other authors offer a more narrow definition and add the element of real-time. Roberge, Roberts, Simand, and Ostendorf (1990, p. 1) define distance education as "a delivery of live, real-time instruction to a person or persons who are physically remote or located at a distance from the instructor."

The importance of live, real-time instruction is embedded within the role

of interaction. Although this will be discussed more fully in a forthcoming section, suffice it to say: "... where the author of the idea and the student attempting to understand it are not connected in a dialogue, they are more likely to be separated by technology rather than linked by it." (Dahl, 1991, p. 108). The previously quoted definition by Roberge, Roberts, Simand & Ostendorf (1990) implies that "the meaning of 'distance education' [is moved] from the narrow definition of education by correspondence, to a broader definition that encompasses technology-based instruction" (Ellis, 1989, p. 1).

Another word for live, real-time instruction is 'synchronous' which contrasts with 'asynchronous' to mean "at the same time" (Laurillard, 1993, p. 270). Synchronous, in distance education, refers to those communications whereby the instructor and students are involved at the same time (Laurillard, 1993). The aforementioned definition by Roberge, Roberts, Simand & Ostendorf (1990) is very narrow and would apply to the video-conferencing form of distance education. However, for the purposes of this study, the broader distance education definition by Willis will be used. It includes the idea that the instruction may not always be delivered at the same time as when the students receive these lessons and still recognizes the developments in technology that serve to link instructors and students in distance education.

Types

A variety of distance education technologies will be briefly described in the following sections. The purpose of this investigation is to provide a background to the distance learning field and thereby provide a framework within which a particular mode, video-conferencing, can be examined. It begins with a brief discussion of the non-live, non-real-time forms of educational technologies such as computer-assisted instruction, audiocassettes, videotapes, videodiscs, facsimile technology (Aman, 1989), correspondence

courses, broadcast television (James, Schimeck & Travers, 1987) and radio (Verduin & Clark, 1991).

Computer-Assisted Instruction

Computer-Assisted Instruction (CAI), or Computer-Assisted Learning (CAL), uses the computer as the primary instructional delivery system. It involves the use of a computer as a teaching machine (Verduin & Clark, 1991). Each student works independently on a computer terminal and is able to work at his or her own pace (Bates, A.W., 1993). More precisely, CAI is defined as “the name given to a teaching process which makes extensive use of a computer in presenting, testing and interacting with the student” (Armstrong, 1980, p. 3).

“The instructional unit is presented through the computer to the student, and as the student interacts with the presentation, learning occurs” (Verduin & Clark, 1991, p. 74). Some software programs are available which provide feedback to, and interaction with, the student. There are programs which encourage learning through the use of simulation, problem-solving, games and drill and practice (Norenberg & Lundblad, 1987). According to Heinich, Molenda and Russell (1985), there are six modes of computer-assisted instruction: drill and practice, tutorial, gaming, simulation, discovery, and problem-solving.

Drill and practice and tutorial modes are basically question-and-answer formats. Tutorials simulate the likely responses of a tutor through “branching” answers to learner behaviour. This branching allows each student to have different responses and thus receive different sequences or levels of instruction. Computer games related to an educational topic may be incorporated into a learning environment. Simulations take a real-world situation and reduce it to its essential elements to create a system whose

behaviour varies in response to each condition created by the learner's responses. Discovery learning requires the student to empirically develop rules or procedures using inductive logic so as to explain evidence in a data base. Problem-solving using a computer involves the student first defining the problem and then changing variables or otherwise searching for a solution using computer calculation and arrangement of data. (Heinich, Molenda & Russell, 1985) Thus, the amount of feedback and interaction provided is dependent upon the type of software programming that is available within given subject areas.

Computers facilitate self-paced individualized learning (Desberg, 1994; Lauzon & Moore, 1989; Verduin & Clark, 1991). Computer-assisted instruction can give students immediate positive reinforcement and feedback (Desberg, 1994; Verduin & Clark, 1991). With the addition of graphics, electronic print and sometimes sound in the learning situation, the computer can be made multimedia (Bates, A.W., 1993; Verduin & Clark, 1991). Also, microcomputers using software on disks permit learners to control their time and length of study and to a degree the amount of interactivity during instruction by having quick access to particular sections of the instructional units (Verduin & Clark, 1991). Computer simulations can be used to train and to evaluate learners when the real-life counterpart is inadvisable or expensive such as in medicine, aviation and engineering (Verduin & Clark, 1991). Other advantages of CAI include that CAI can maintain student progress by providing on-screen assistance to a student who is having difficulty (Desberg, 1994). The student does not have to wait for the teacher's help. Not only does CAI provide feedback for individual students, but it can diagnose learning problems and prescribe other software lessons (Desberg, 1994; Lauzon & Moore, 1989). Also, computers are infinitely patient, unlike human beings, and

they lower the emotional risk involved in learning (Desberg, 1994). That is, mistakes are between the student and the computer and the student does not have to be embarrassed by his/her errors. The learning experience occurs in a safe and secure atmosphere (Lauzon & Moore, 1989). CAI, by providing practice in answering questions, can improve test-taking skills (Desberg, 1994). Since there is a loss of anxiety and the gain of novelty, student motivation can be increased through the use of game formats (Desberg, 1994). Papert (1993) adds another advantage of CAI to the list: neutrality. In other words, the computer is not subject to biased perceptions related to race, gender, social class or personal history on the part of either the teacher or the student (Lauzon & Moore, 1989; Papert, 1993).

The greatest disadvantages in considering the use of CAI are the cost and time considerations (Bates, A.W., 1993; Desberg, 1994; Heinich, Molenda, & Russell, 1985). Quality software is expensive to develop. One good hour of CAI may take anywhere from 100 to 300 hours to prepare; thus, publishers charge high prices (Desberg, 1994). Further limitations include the lack of instructional software (Desberg, 1994), especially for adults; the computer's reinforcement of program designers' tendency to use lower-level cognitive objectives when developing instructional materials; and the great amount of time and effort to design materials that cannot be purchased elsewhere (Heinich, Molenda, & Russell, 1985). Also, according to Desberg (1994), computers can be difficult to use: many students do not know how to type and may even have problems reading, and some teachers are computer-phobic. The computer has limitations. Many CAI programs stress what the computer can do well rather than what the student needs (Desberg, 1994). There are poorly designed CAI programs that look and sound terrific but do not teach the specific skill or topic that the student needs to learn (Bates, A.W.,

1993; Desberg, 1994). They may be just bad books or flashcard drills that have a large amount of text on the screen and require the student to press the return key to turn the page (Bates, A.W., 1993; Desberg, 1994).

Audiocassettes

The audiocassette can include the spoken word, music (instrumental and voice), natural sounds, and sound effects (Schweir & Misanchuk, 1993). Audiocassette tapes are generally utilized in two ways: firstly, for limited student involvement whereby the student listens to a lecture; and secondly, for interactive student involvement whereby the student answers questions or otherwise responds at particular intervals on the tape (Norenberg & Lundblad, 1987). Personal contact and immediate interaction are lacking when this method of distance delivery is being used.

Audiocassettes are used a great deal by the British Open University, the Spanish Distance Teaching University, and the University of Waterloo in Ontario (Bates, A.W., 1993). The British Open University uses audiocassettes due to their low cost and the fact that instructors can still control their course. Students like the convenience and informality offered by audiocassettes (Verduin & Clark, 1991).

Other advantages include the ease with which they can be transported (Bates, A.W., 1993) and used. They easily fit in a pocket or a purse and can be listened to while exercising or while driving. They are inexpensive and easy to produce and distribute (Bates, A.W., 1993; Sopal, 1989). Also, students have control over the time of day and week in which they study as well as the speed with which they progress (Sopal, 1989; Verduin & Clark, 1991). Flexibility and ease of manipulation allow students to control their own learning (Sopal, 1989; Verduin & Clark, 1991). They can be rewound, fast-forwarded and thus, used for skimming and reviewing (Sopal, 1989). Also, students are typically

familiar with the use of audiocassettes and are at ease with its use (Sopal, 1989). The complexity of the material available on an audiocassette can be at a high level since students have the flexibility to stop and review material as necessary (Verduin & Clark, 1991).

The disadvantages include the need for playback equipment and the need for a production and distribution system. It is difficult to achieve rapid movement from one section of the tape to another and to engage in in-depth didactic conversation on audiocassette. (Verduin & Clark, 1991) They also have the limitations of being one-way communication and lacking visual dynamism (Bates, A.W., 1993).

Videotapes

The most common medium for storing and retrieving television programming is the videotape (Schwier & Misanchuk, 1993). In the early 1970s, a minor revolution occurred as video cassette recorders (VCR's) entered the educational marketplace (Schwier & Misanchuk, 1993). Today, there are two formats of the 1/2 inch size of video cassettes dominating the market - Beta and VHS. VHS dominates the home market. Although Beta has been eliminated from the home market, a professional format of Beta is an industry standard for electronic news gathering and offers excellent quality for transfer to other tape formats or disc (Schwier & Misanchuk, 1993).

Videotaped lessons can be recorded from a classroom instruction setting or from a studio production (Aman, 1989; Wall, 1986). In either case, there is no student interaction required. Students simply watch and listen to a lecture and have limited involvement. Any program developed for one-way broadcast can also be put on video cassette (Verduin & Clark, 1991).

The advantages of video cassettes are similar to those of audiocassettes (Verduin & Clark, 1991) and broadcast television (Sopal, 1989). Videotapes

are easier to manipulate than film (Verduin & Clark, 1991). They also provide the learner with convenience and flexibility in terms of when the student chooses to study (Verduin & Clark, 1991). Their biggest advantage is the control the student has over their own learning (Sopal, 1989). The student can watch when and as often as desired and is able to have partial replays of the material. Video cassettes are inexpensive (Wall, 1986) and can be used to record broadcast television programming (Sopal, 1989). This medium is appreciated and enjoyed by most students (Sopal, 1989). The main disadvantage is that it is a one-way method of communication (Verduin & Clark, 1991).

Videodiscs

Videodiscs are similar to compact discs in that they are metal discs with information laser-etched onto the surface which is in turn read by a disc player's laser beam (Norenberg & Lundblad, 1987). However, that is where the similarity ends. The disc may be 30.5 centimetres (12 inches) or 20.25 centimetres (8 inches) in size and looks like a long-play record (Schwier & Misanchuk, 1993) only it is brilliant-silver in colour (Sopal, 1989). Its information is displayed on a monitor. Interaction with the information can occur when this system is linked to a microcomputer (Norenberg & Lundblad, 1987). Therefore, videodiscs combine the power of television with the flexibility of a computer (Schwier & Misanchuk, 1993). Technology is rapidly changing; it is likely that in the future, as these discs decrease in size, they will increase in usage and become a routine part of the computer.

A record-like disc stores frames of information located in microscopic pits (Schwier & Misanchuk, 1993). A series of these pits, read in sequence, yield a frame and each frame can be thought of as a frame of a motion picture (Schwier & Misanchuk, 1993). Using a videodisc system, a frame can be

retrieved individually to produce a still picture or in a series to produce a motion picture. Videodiscs currently hold about 54,000 frames per side (Schwier & Misanchuk, 1993) which is enough room for about one hour of colour visuals with sound or several thousand pages of text (Heinich, Molenda & Russell, 1985). Thus, 108,000 frames in total may be stored on a single disc, that is, 108,000 still pictures (Schwier & Misanchuk, 1993). Using this technology, most of the great works of art available for study could be reproduced and stored on the same disc and a Art History instructor could house a complete collection on an office shelf in the space equal to that of one long play album (Schwier & Misanchuk, 1993).

According to Verduin & Clark (1991), there are four levels of interaction possible with the use of videodiscs. In level 1, a videodisc player and monitor are linked for simple functions of play, stop, record, rewind and others. This is commonly performed with video cassettes in educational settings. In level 2, a simple microprocessing unit is included in the videodisc player which makes simple branching, in the instructional process, possible. In level 3, an external computer interfaces with the videodisc player and this makes flexible prescriptive branching, based on user input, possible. Finally, in level 4, data could be down-loaded from the videodisc into the computer, modified and then returned to an erasable videodisc along with compressed digital storage of video and audio signals to increase capacity. This fourth level will not likely be available for another few years but then it should increase videodisc usage in distance education by making master discs less expensive to create.

Interactive videodiscs allow for individualized, self-paced instruction and may be more convenient, depending upon access to a videodisc player, than videotapes (Verduin & Clark, 1991). A videodisc lasts indefinitely with proper care (Schwier & Misanchuk, 1993; Sopal, 1989; Verduin & Clark, 1991) or

until it becomes obsolete and can be used for keeping records and gathering research data during instruction. The main drawback to videodisc usage is cost. Creating master discs is expensive and minimum quantities must be prepared just to bring the unit cost to an acceptable level (Schwier & Misanchuk, 1993; Verduin & Clark, 1991). Also, the videodisc players and computer systems needed to use this medium add to the initial cost of using a videodisc. (Verduin & Clark, 1991).

Facsimile Technology

To provide a printed copy of materials to the instructor and the students at another location, a facsimile (FAX) machine may be used. Optical scanners use electronic signals to convert materials on pages and transmit this information to and from various sites (Norenberg & Lundblad, 1987). There is, once again, a lack of interpersonal communications when using this method. There can, however, be prompt feedback and instructor-handwritten communications on the student's submitted work when a facsimile is used.

Correspondence Courses

The combination of the printed word and the postal system as a medium of two-way communication was the first technology of distance education (Garrison, 1985). Print is still the major medium of delivering educational materials (Bates, A.W., 1993; Garrison, 1985; Verduin & Clark, 1991). Print has many advantages as an instructional medium. Correspondence materials have the advantages of being standardized, in that they require no special equipment on the part of the learner; portable, in that they can be carried around and read in any number of locations; and dense, in that, a great deal of information can be packaged into a small space (Bates, A.W., 1993). Also, printed materials are familiar and inexpensive (Verduin & Clark, 1991). Their format allows readers to access any section, in any order, for any length of

time (Verduin & Clark, 1991). A highly developed postal service makes distribution easy in most countries (Verduin & Clark, 1991). However, this form of two-way communication is dependent upon the mail service and, thus, the feedback can be delayed (Garrison, 1985). Currently, there are Alberta school regions which utilize facsimile machines to accelerate this process. Also, print courses are the only medium that can be used without additional equipment, anytime and anywhere there is a light source available (Verduin & Clark, 1991).

A disadvantage of print is that it can only provide a vicarious experience of reality and some aspects of reality are not easily portrayed in print such as taste and smell. However, these are also limitations of audiovisual technologies. In these instances, if the reader does not have the background experiences to understand concrete illustrations or reality-based arguments provided by the instructor, they may have difficulties learning the material. Similarly, if their proficiency in written language is low, they may have problems learning by print. The speed of interaction is another difficulty in correspondence study at a distance. In the print-only mode, feedback may be slow to arrive and the student may have already proceeded on to a new topic and lost interest in the response to the previous questions. The use of a telephone, either for a conversation or to deliver a facsimile, can combat this problem by allowing immediate interaction between the instructor and the student. (Verduin & Clark, 1991)

Broadcast Television

In broadcast television, the signal is beamed through the air to television receivers without the use of wires or cables (Verduin & Clark, 1991). Television is extensively used world-wide for education and training. In the United States, the primary use of one-way television is to simply relay a

standard classroom situation from a main campus to other sites (Bates, A.W., 1993).

In 1973, the Alberta government developed the Alberta Educational Communications Corporation, commonly referred to as ACCESS. Primarily, its role is to provide delivery technologies such as satellite transmission, video-taping and radio transmission (Mugridge & Kaufman, 1986). In other words, it provides multimedia educational communications services to the province (Gall & Hill, 1988). ACCESS was designed to be interorganizational where its main role is to complement the total educational enterprise in Alberta. The role of the corporation is to provide programming services, production services and acquire educational materials (Mugridge & Kaufmann, 1986). Athabasca University uses ACCESS programming to supplement its course offerings.

According to L. McMillan, the Programming Assistant for ACCESS, during the summer of 1995, the ACCESS network was privatized and thus, no longer receives any government funding to operate. Although, a government operating grant is no longer provided, Alberta Education still purchases air time for the curriculum programming. The legal name was changed from "Alberta Educational Communications Corporation" to "Learning and Skills Television of Alberta" and the shortened version was altered from "ACCESS Network" to "ACCESS The Education Station". Its role has remained as the provider of the province's educational broadcasting. They broadcast from 6:00 a.m. to 1:00 a.m. daily and include: preschool programming, curriculum programming for grades kindergarten to 12, and telecourses for Athabasca University and for the Southern Alberta Institute of Technology (S.A.I.T.). They also offer general interest programming with a learning objective such as an episode on learning to use a computer. From 1:00 a.m. to 6:00 a.m. on Tuesday's and Thursday's, curriculum instruction is available for teachers to

record to preview information or to use in the classroom. (personal communication, February 28, 1996)

At the British Open University, printed material provides the 'core' elements of a given course, and the television programs provide the extra, unique, learning materials that a distant learner may not, otherwise, be able to access. These 'extras' may include laboratory experiments, human behaviour, animation and models (Bates, A.W., 1993).

Broadcast television is very weak with regard to student and instructor control. The broadcast cannot be reviewed, is uninterrupted and is given at the same pace for all students (Sopal, 1989). However, since most homes have a VCR, recording the broadcast on a timer can overcome the limitations of set times and the lack of review. Production, distribution and transmission of television programming can be a complex process with the possibility of many problems which would result in poor or disrupted service (Verduin & Clark, 1991). Television broadcasting has very high start-up and overhead costs (Sopal, 1989; Verduin & Clark, 1991). With the exception of call-in programs, television's greatest limitation is that it is a one-way method of communication (Sopal, 1989; Verduin & Clark, 1991). Other disadvantages include the lack of feedback it provides, and the fact that it is not suitable for analysis of processes or situations, for reflection or deep processing of information, nor for development of abstract thinking skills (Sopal, 1989).

The advantages of broadcast television are that it is good for: encouraging individual interpretations, stimulating creative thinking, providing an overview or synthesis of ideas, story telling, modelling learning processes, rousing awareness, and developing skills of evaluation (Sopal, 1989). The one greatest advantage of broadcast television is that virtually every home in Canada has a television set and thus can receive some forms of educational

programming (Sopal, 1989).

Radio

Although, radio was invented at the turn of the century, AM channels were not allocated to educational uses until 1940. FM radio, invented in 1935, began to replace AM educational broadcasts starting in the 1950s. In many nations, radio is still being used for adult education and it is growing quickly in some developing nations. For instance, in countries with low literacy rates, radio is an important medium because it can replace print to some extent. (Verduin & Clark, 1991)

In developed nations, most people have individual access to a radio but in developing nations, 30 to 40 people may listen to one radio. Unreliable postal and telephone services in developing countries make radio a logical alternative. (Verduin & Clark, 1991)

With the privatization of ACCESS came the splitting of the television and radio components. According to S. Cross, Receptionist/Secretary for CKUA Radio Foundation, the radio portion of ACCESS is now called the "CKUA Radio Foundation" and offers a limited amount of educational programming. Currently, Athabasca University courses in the Humanities such as a music history course called "Ragtime to Rolling Stones", a French language course, and an environmental course are offered through CKUA radio broadcasts. The total educational broadcasting for these courses is six hours per week. At this time, no other Alberta institutions offer courses through radio broadcasts. (personal communication, February 28, 1996)

The advantages of radio include: easy access, relatively low cost (Sopal, 1989), immediate availability, and the possibility of changing content quickly if necessary. Radio broadcasting is the most cost-effective technology for reaching mass audiences. The drawbacks are that some people do not learn

well by radio. Listeners may easily become distracted if the program is too long or if the language used is too difficult. The lack of a visual component and the generally noninteractive nature of radio are other disadvantages. (Verduin & Clark, 1991)

Once again, notice the lack of interpersonal communications and interaction in utilizing each of the aforementioned methods of distance education. Unlike the previous discussions of distance delivery methods, each of the technologies to follow will be involved in the delivery of live, real-time instruction between learners and an instructor who are located at a distance from one another.

Audio-conferencing

“Education by telephone” is basically what is meant by audio-conferencing (Ellis, 1989, p. 2). The teacher and learners are connected by voice only through the use of telephone lines. This can be done using a telephone company’s conference call service or, more likely for education, by using a bridge to connect the various sites.

A ‘conference call’ is a “telephone or radio conversation connected to more than two persons at different locations” (The New Lexicon, 1988, p. 204). A ‘bridge’ is a sophisticated teleconferencing device which links groups of people easily and quickly through regular telephone lines. Thus, any individuals at any telephone location can participate in a teleconference by dialing the bridge’s telephone number at a specific predetermined time. Given this definition of a ‘bridge’, ‘bridging’ is the action of connecting together a series of telephone lines so that all of the people involved may hear and talk to one another.

A more detailed definition of audio-conferencing is offered by Ellis (1989, p. 3):

Educational audio teleconferencing is the practice of using audio conferencing to simultaneously teach groups of learners in multiple remote locations using a conference bridge and teleconference station equipment.

Introduced into Canada in the mid-seventies and firmly established in four provinces by the eighties, educational teleconferencing is now in use in every province in Canada (Ellis, 1989). In Canada, audio-conferencing is used substantially as a part of distance teaching (Bates, A.W., 1993). Contact North in Ontario, the Open Learning Agency in British Columbia (Bates, A.W., 1993), the University of Calgary, Tele New Brunswick, Network Nova Scotia, Memorial University Telecourse Network and the Lethbridge Community College all make extensive use of audio-conferencing.

The general strengths of audio-conferencing include the group interaction, and subsequent learner support (Burge & Roberts, 1993). At a practical level, this form of distance education is available anywhere there is a telephone (Burge & Roberts, 1993). It is readily available, adaptable and uses inexpensive equipment (Aman, 1989). Among its weaknesses are the lack of visual contact with others (Bates, A.W., 1993; Garrison, 1985), occasional poor sound quality (Bates, A.W., 1993) and the possibility for interaction only during scheduled times which thereby breaks the continuity of instruction (Garrison, 1985). Especially for those students using a telephone at home, it can be a tiring medium (Bates, A.W., 1993).

Audio-graphic Conferencing

The same components necessary for an audio-conference are also needed for an audio-graphic conference: a telephone, telephone lines and a bridging service (Burge & Roberts, 1993). Additionally, a standard computer with a modem, keyboard, and a specially-equipped colour monitor (Burge & Roberts, 1993) and the necessary software are required at each site. Many

higher education subjects being taught require visual enhancement over the audio-conferencing technology. In these instances, audio-graphic conferencing is the natural extension to be used (Ellis, 1989). It can provide voice plus shared screens for textual and graphic information.

Whereas audio-conferencing is simply a relay of voices, audio-graphic conferencing, as the name implies, also has a visual or graphic component sent to the sites via a computer modem. As described by Ellis (1989, p. 3):

the Audiographic Teleconference is the use of data or video images with the standard multi-point educational audio teleconference such that the instructor has two interactive capabilities. Voice interaction and visual interaction.

This visual content can be sent on either the same telephone line as the audio component or a separate line (Ellis, 1989). If only one-line link is used, there can be no voice transmission while a visual image is being viewed. In other words, while a diagram or other observable item is on display to the venues, the teacher is unable to speak about that which is being presented. This can be a major detriment to a single line transmission.

There are many advantages of audio-graphic teaching (Barker, 1990). It is low cost in terms of hardware, software and maintenance and is easy to learn and operate. It allows for local control of the teacher and the curriculum and permits teacher-student interaction. Instruction can originate from any participating site. Computer-generated visuals can be activated by any class member be that the instructor or a student. It uses regular telephone lines to transmit which makes it possible for linkages with practically every school if they have the necessary equipment.

However, there are disadvantages as well (Barker, 1992). The motion of video images is not possible (Barker, 1990; Burge & Roberts, 1993). The people involved can not see one another. Noise on the telephone lines can

cause interference in the voice transmissions and transmission costs for long distance can be expensive. The image displayed on the computer screen is limited to the size of the computer screen unless additional hardware costs are invested. Also, teachers require additional training to instruct using the system.

Computer Conferencing

Computer conferencing uses individual computer terminals and modems to transmit and receive text (Burge & Roberts, 1993). It permits two-way transfer of information among computer users (Verduin & Clark, 1991). Standard telephone lines link the terminals and software, loaded into the "host" mainframe computer, and connect the individual computers into an interactive conference (Burge & Roberts, 1993). Computer conferencing provides a meeting place without physical or temporal boundaries (Lauzon & Moore, 1989). Unlike audio-conferencing and audio-graphic conferencing, only text and graphics are distributed among the teacher and learners in a computer conferenced class. Currently, neither voice nor video are transmitted using the computer conferenced technology. However, according to Dr. D. Burnett, University of Lethbridge Professor, with the advent of the Internet, World Wide Web, the rapidly changing technology, and appropriate software, video can be transmitted and voice will soon be transmittable as well (personal communication, February 27, 1996).

Students can be located all over the world as long as they, or their school site, are willing to pay the long distance charges for their time (Burge & Roberts, 1993; James, Schimeck & Travers, 1987). Again, with increasing use of the Internet, long distance charges may not be an issue (Burnett, D. personal communication, February 27, 1995). Currently, in computer conferencing, the people involved cannot see nor hear one another; in a way,

this may promote equality of opportunity (Burge & Roberts, 1993). Once again, Dr. Burnett submits that with the use of a camera the size of a golf ball sitting on top of each computer monitor, students will be able to see one another as well (personal communication, February 27, 1995).

Dr. D. Burnett, University of Lethbridge Professor, has been teaching a 4000 level Education course via computer conferencing but using the Internet and World Wide Web as the venue. A course Web site was created and a new section of it is made accessible on a weekly basis, as a student might attend a class on a weekly basis to be provided with new course material. Assignments are submitted through electronic mail, graded and returned in the same manner. Comments are typed along with the grade so feedback is provided. The instructor may never physically meet the students and vice versa and students may never physically meet one another either. However, students are able to communicate via e-mail with each other and the instructor. (personal communication, February 27, 1996).

Computer conferencing provides asynchronous communication among the students and the instructor which, in turn, facilitates more interaction among all class members - students, instructors, guest lecturers and any other person involved in the course (Lauzon & Moore, 1989). This increased interaction provides new opportunities for distance education. Multiparty brainstorming sessions, group projects and collaboration, continuation of classroom discussions and peer learning are a few ways that class members can become more involved in their learning (Lauzon & Moore, 1989). The increased capacity for communication can assist in the development of a sense of community and, through frequent communication and interaction, students develop a cooperative atmosphere characterized by democratic principles and mutual support (Lauzon & Moore, 1989). Another advantage is

the convenience of having the classroom open all day, everyday. Therefore, students can control their own learning interaction and study when it best suits their schedule (Lauzon & Moore, 1989; Burnett D. personal communication, February 27, 1996). From the instructor's perspective, their are other advantages. For instance, e-mail can provide an alternative to conventional office hours (Lauzon & Moore, 1989; Burnett, D. personal communication, February 27, 1996). If the instructor is prompt at responding to e-mail, students can benefit as well. Students can ask questions at any time and instructors can provide prompt feedback at any time. Also, a textbook and paper (instructor handouts or student notepaper), and their respective costs, are not required (Burnett, D. personal communication, February 27, 1996). Currently if a person can find the Web site, s/he can complete the activities of the course and learn for the sake of learning without paying the tuition fee; however, then neither university accreditation nor instructor assistance is provided (Burnett, D. personal communication, February 27, 1996).

Some disadvantages may include the lack of availability or accessibility to computers (Burnett, D. personal communication, February 27, 1996), or the reluctance of some students and their families to occupy the home telephone for extended time periods (James, Schimeck & Travers, 1987). In the case of rural communities, where party lines may still be in use, extensive modem usage would tie up party lines and thereby inconvenience many other users (James, Schimeck & Travers, 1987). In addition, if another person picks up the receiver while the party line is engaged with computer modems, the computer will become disconnected. Also, students frequently resist computer conferencing because of anxiety and lack of confidence in their ability to master a computer (Lauzon & Moore, 1989). Dr. Burnett suggests that the

computer conferencing student should be adventurous and willing to try this technology (personal communication, February 27, 1996). Class members may also be overwhelmed at the amount of material they are required to read - not only text materials but conference messages (Lauzon & Moore, 1989). Some students may have difficulties following a variety of on-going discussions and deciding when to respond (Lauzon & Moore, 1989). Other students have health and fatigue concerns related to prolonged computer usage and bifocal or trifocal wearers may have difficulty reading the computer screen (Lauzon & Moore, 1989). Other disadvantages, as related by Dr. Burnett, include: some technological problems with sending electronic mail and difficulties becoming connected with the Internet since lines become "plugged" with large numbers of Internet users; feedback is not instantaneous; no longer interacting in real time with real people so the human element is missing; lack of knowledge about who is on the receiving end and people may be dishonest in relating information about themselves over e-mail; and, for now at least, the interaction is not verbal but rather limited to text, pictures and video.

Video-conferencing

Television, generally, is a familiar source of information, entertainment, and advertising that a large majority of people consume rather passively. However, new concepts of television may change how people think of this medium. For instance, broadcast or cable television, a rented video cassette tape, a program created with a home camcorder, or playing a video game, are all considered different means of television usage. In each case, operators are actively choosing how to use the television and, in the case of home video recording, may even be creating their own media. Therefore, the passive television watcher can become an active program director (Lochte, 1993). Rather than the familiar one-way medium, a two-way interpersonal

communication device, more like a telephone, is how the television can function (Lochte, 1993).

A main difference among systems is whether they can link visually with one other site or many other sites. If a system can share live video with only one other site, it is called point-to-point network (Ostendorf, 1991). Thus, a point-to-point network is only between two locations (Burge, Wilson & Mehler, 1984). If all sites can link with more than one location and can receive video from all sites, it is called a multipoint network (Ostendorf, 1991). Thus, the linking of three or more locations would be involved in a multipoint network (Burge, Wilson & Mehler, 1984). A point-to-multipoint allows many locations to receive the same picture from the origination site and the origination site can only see one other location at a time (Ostendorf, 1991), unless a split screen is used to view all sites at once. This case study involves point-to-point video-conferencing.

Expansion of the live classroom, to include students at several locations simultaneously in an environment where everyone involved can see, hear, and communicate with everyone else, can be done with video-conferencing. In this way, interactive technology can link the concepts of the traditional classroom with distance education (Lochte, 1993). Burge and Roberts (1993, p. 59) describe video-conferencing as “symmetrically interactive voice and moving image between two or more sites. It can be ‘full motion’ or ‘compressed’”. Each audio and video signal is made up of “bits” which represent the information being transmitted; “compression” is a process which decreases this number of bits, or the amount of data, needed to make-up the original video and audio signals. The result is more efficient use of the telephone network. Thus, video-conferencing is a means of communication over distance which uses cameras, television monitors, microphones and loud-speakers,

together with telephone lines, to produce interactive audio and video signals.

On the one hand, “full motion” gives the illusion of natural motion as we generally see on television and there must be a full television channel (equivalent to approximately 1,200 telephone lines) to transmit such a signal (Burge & Roberts, 1993). G. Berg (personal communication, January 29, 1996), Coordinator of Audio Visual Technologies at the University of Lethbridge, confirms this information and he added that one frame of video acquires one megabyte of space on a hard drive. A frame is one complete video image (Iuppa, 1984). Thus, one minute of full motion video would require two gigabytes of hard drive space to be stored. Thus it is conceivable that a full television channel would be equal to about 1,200 telephone lines. On the other hand, “compressed video” squeezes information together and thereby uses anywhere from two to 24 digital telephone lines to transmit a signal. The result is a loss of clarity or the naturalness generally associated with television; the fewer phone lines used, the more jerky the picture appears. In other words, the natural motion of the picture is lost when fewer telephone lines are used to transmit information. The signal can be transmitted from one venue to another in a variety of ways: satellite, twisted pair copper lines, microwave (Lochte, 1993), or fibre optic cable.

Interaction. ‘Interactivity’, according to Laurillard (1993), involves feedback on what the student does; in other words, the system’s information should change as a result of the student’s actions. For example, neither a book nor a videotape would be considered interactive because neither of them is capable of changing when they are either, respectively, read or rewound (Laurillard, 1993). In each of these cases, the medium cannot provide feedback on the actions of the student.

‘Interactive’ is a term which implies a form of two-way communication

(Lochte, 1993). An example of interaction common in the broadcast and cable business is the use of live satellite transmission often seen on the nightly news (Lochte, 1993). Canadian Broadcasting Corporation (CBC) Prime Time News often has guests connected from other cities via audio and video links. With this arrangement, there can be two-way voice, video and data transmission. It is this type of communication and television environment that is achievable in the classroom, linking students with other students and with a teacher in various, geographically-separate locations. This is the type of interactive video-conferencing, otherwise known as interactive television, that this research will investigate.

Lochte (1993) cautions potential video-conference users that this technology will probably never be a suitable alternative to a good teacher interacting in person with motivated students and it should not even be considered as such. However, due to the economics of education, Lochte (1993) states, this optimal condition will not always be permitted.

There really is no single "best" method of distance education technology. A full distance education system should perhaps consist of many modes to suit the varying needs of different groups of students and instructors as well as consider varying cost factors. Therefore, although the discussion up to this point has appeared to lead into a single "best" method, this is not the case. Rather, out of several viable options, I have chosen to study the video-conferencing form of distance education.

The next section of this review of relevant literature will focus upon effective teaching in a general sense, then on the establishment of teacher-student rapport and, finally, on what is known about the relationship between rapport and teaching effectiveness in distance delivery.

Effective Teaching

This section deals with effective teaching in a general sense across all levels of education and disciplines of instruction, thus, specific age-related and contextual information is deliberately omitted. However, for those interested readers, generally Brophy (all years) deals with basic skills instruction in elementary and secondary grades. Broad generalizations, made in the next section, will be extrapolated to the specific group of adult students in the unique context of a post-secondary video-conferenced environment.

Effective instruction is that which “enables students to acquire specified skills, knowledge and attitudes” (Dick & Reiser, 1989, p. 2). It is also instruction that is enjoyable for the students (Dick & Reiser, 1989). “Teacher effectiveness” is a term which, in most definitions, includes such ideas as promoting students’ affective and personal development as well as their mastery of the curriculum (Brophy, 1986). It has been long recognized by teachers, principals and teacher educators that classroom management skills are essential to teaching success (Brophy, 1982a). By this, Brophy (1982a) is not simply referring to student attention and time on task but, rather, student achievement in basic skills. The classroom activities are systematically planned by teachers who provide effective instruction (Dick & Reiser, 1989). In a nutshell, good learning environments are created when teachers organize and manage their classrooms effectively (Brophy, 1982a).

Classroom Management

Often the term “classroom management” shares connotations with other terms such as “discipline”, “control” and implies setting and enforcing stern limits so as to halt unacceptable behaviour (Brophy, 1982a). “This connotation is unfortunate because research on classroom management

regularly indicates the need to stress prevention over remediation” (Brophy, 1982a, p. 20). Brophy (1982a) goes on to stress the importance of planning, organizing, and maintaining an engaging learning environment.

Effective classroom management is composed of two components: the reactive response to student misconduct, which is only a minor element, and active teacher planning and decision-making, which focuses upon developing a functional physical environment, linking curriculum and instruction to student needs, and instituting efficient procedures for taking care of everyday housekeeping and logistics (Brophy, 1982a).

In a 1970 study by Kounin (as cited in Brophy, 1982a), neither grade nor subject levels were provided, researchers looked at two types of classrooms: one which was running smoothly, in an orderly manner and cooperative, and the other, chaotic, in which teachers were fighting to “keep the lid on”. Each classroom type was analyzed from videotaped recordings; Kounin and colleagues found that good classroom managers were not different from poor classroom managers in terms of their responses to student misbehaviour (as cited in Brophy, 1982a). However, effective classroom teachers systematically did things to minimize the frequency whereby students initially became disruptive. Three of these behaviours were listed as: “with-it-ness”, “overlapping-ness”, and “signal continuity and momentum in lessons” (as cited in Brophy, 1982a).

“With-it-ness” involves nipping problems in the bud; that is, before they escalate into major class disruptions (as cited in Brophy, 1982a). Being “with-it” is to be aware of the surroundings at all times so as to be able to detect unsuitable behaviour early and accurately (as cited in Brophy, 1982a). In other words, “with-it-ness” is being able to continuously monitor the entire classroom (Brophy, 1986).

“Overlapping-ness”, otherwise known as dovetailing, involves learning to do more than one task at a time without disrupting the natural flow in the classroom. For example, a teacher would confer with an individual student while still monitoring the rest of the students in the class (as cited in Brophy, 1982a; 1986).

With regard to “signal continuity and momentum in lessons”, the effective instructor is well-prepared and, therefore, able to move quickly through planned activities with minimal interruptions, confusion, backtracking, or false starts (as cited in Brophy, 1982a; 1982b; 1986). In this manner, students are attentive when there is a continuous academic “signal” to occupy their attention (Brophy, 1982b); problems tend to arise when students have no clear “signal” upon which to focus (as cited in Brophy, 1982a). Therefore, an instructor with a clearly developed lesson which effectively utilizes time and the students’ abilities to their fullest will have less difficulties with inappropriate student behaviours than the instructor who is not as well-planned and efficient with time and ability levels of the students.

The ultimate conclusion of Kounin’s 1970 study is that seemingly smooth, automatic, classroom functioning is the result of the work of successful managers who are well prepared and organized at the start of the school year (as cited in Brophy, 1982a; 1982b; 1986). In the early weeks of classes, the effective classroom manager spends a significant amount of time introducing, teaching, and following up on appropriate rules and procedures (as cited in Brophy, 1982a; 1982b; 1986).

Generally, the more effective instructors showed more of three main behaviour clusters: behaviour that conveys purposefulness, teaching students how to behave appropriately, and teacher skills in diagnosing focus of attention (as cited in Brophy, 1982a). Generally, effective teachers strive for

the use of the maximum amount of available time for instruction and learning (as cited in Brophy, 1982a; 1982b; 1986). What is to be expected and what will not be tolerated is clearly stated by the effective teachers (as cited in Brophy, 1982a; 1982b; 1986). Although Brophy's comments are related to public schooling and children, the fact that he refers to instructors and teachers in general terms implies a relevance to all teaching locations, including effective teaching at the post-secondary level.

Student Learning

There are observable, stable, individual differences in teacher effectiveness (Brophy, 1982b). Effective teachers have the following attributes. They are sensitive to student concerns; monitor student confusion or inattention; use variations in voice, movement, and pacing; plan daily activities in consideration of the students; include lesson introductions and closures as well as efficient transitions and arrange desks for ease of attention (as cited in Brophy, 1982a; 1982b; 1986). They provide chances for practice and application in student learning while feedback and remedial instruction are also provided (Brophy, 1982b; 1986).

Students perceive effective teachers to be enthusiastic and thorough instructors, who strive to maintain a friendly, jovial, sociable, and affable classroom (Brophy, 1982b). In 1986, Brophy elaborated further on this earlier remark. He noted that pleasant and convivial classrooms tend to have high achievement gains as well, although extremely high scores on warmth and positive teacher-student relations are not necessarily associated with achievement gains. Perhaps a moderately, genial, amiable, and friendly classroom atmosphere would aid in the development of a congenial rapport between students and teachers.

Planning and organization cannot be stressed enough in the operation

of an effective teaching and learning environment. There appears to be an orderly knowledge base that merges teacher behaviour to student achievement, and the general consensus is that effective teaching requires the synchronization of many teaching skills tailored to specific situations instead of the continued performance of some generic “effective teaching behaviours” (Brophy, 1986). If this knowledge base is applied while maintaining these limits, then appropriate teaching should ensue.

Rapport

In the words of Caraway (1986, p. 231):

Teaching is a relationship. Regardless of what is viewed as indispensable to effective teaching, the essential aspect of the teaching situation is that it is a relationship between the teacher who is attempting to teach someone and the student who is attempting to learn. The relationship between teacher and student is a necessary--and never a contingent--dimension of the teaching situation. Any discussion of effective teaching must, therefore, include a consideration of this dimension of teaching.

As is evident from the previous discussion, effective teaching is a multidimensional activity and relationship. The student-teacher relationship is a necessary part of the teaching/learning situation but it is, by no means, the only dimension; nor is it the only necessary dimension (Caraway, 1986). Rather, it is a facet which seems to be generally ignored throughout the literature (Caraway, 1986) and is an area of particular interest to this author.

Definition

The term ‘rapport’ is difficult to define because it has many contributing elements and connotations. Etymologically, the word ‘rapport’ comes from “re” meaning “to bring back, refer to again” and “-apporter” from the Latin word ‘apportare’ which also means “to bring” (Klein, 1967, p. 1302, vol. II) or “to bring, carry to” (Klein, 1967, p. 94, vol. I). Onions, Friedrichsen, and Burchfield (1967, p. 739) concur with these basic findings, yet they take these broken

down forms to mean “relationship” and “connexion [sic]” when they are put together. However, Johnson (1979) believes that ‘rapport’ came from the French word ‘rappat’ which means “relation; reference; [and] proportion”. He goes on to state the first use of ‘rapport’ to be by the author Temple (n.d.) in the following sentence:

Tis obvious what *rapport* there is between the conceptions and languages in every country, and how great a difference this must make in the excellence of books.

In the *Webster’s Third New International Dictionary of the English Language*, Gove (1981) defines ‘rapport’ as a “relation characterized by harmony, conformity, accord or affinity; confidence of a subject in the operator ... with willingness to cooperate.”

Taken together, all of the above meanings point to the idea of a relationship, bringing together two or more people, which is distinguished by any or all of the following terms: “accord, harmony, sympathy, affinity, empathy, relation, fellowship, mutuality, compatibility, agreement, [and] understanding” (Landau & Bogus, 1987, p. 557).

I will adopt Williams’ (1988, p. 163) definition and assumptions of rapport as being a:

harmonious personal relationship, creating an atmosphere of mutual confidence. Rapport between child and tester is essential for valid ... educational assessment: rapport between child and teacher is essential for effective learning.

Interaction

For any kind of rapport to be created between individuals, interaction must first take place. In effect, there are two forms of interaction that can take place in education: firstly, individual interaction that is an isolated activity between the learner and the learning material, whether it is a textbook, a television program, or a computer simulation; secondly, social

interaction that occurs between two or more people regarding the learning material (Bates, 1990). Although both types of interaction are needed for learning (Bates, 1990), the latter is usually involved in the establishment of student-teacher rapport.

Interaction between the teacher and the student is a key factor in effective teaching (Cochran & Moodie, 1978). Teacher-student interactions, which serve to move the student to become a self-motivated learner, are where the actual value of teaching should lie (Cochran & Moodie, 1978). I believe that instructors should teach students how to be "life-long learners"; that is, how to find information on their own, to seek solutions to problems, and to strive to continually know more. To become a self-motivated learner is to have the internal incentive to acquire information.

Effective Teaching Using Video-conferencing

In contrast to the previous more general section on effective teaching as a whole, this segment will adapt these generalizations more specifically to the adult post-secondary student in a video-conferenced classroom environment. Although many of the forthcoming remarks are tailored to the distance education classroom, they, in many cases, will also apply to the traditional classroom instructor. This is because some of the basic foundations and skills of an effective teacher are transferable to a distance educator as well.

Classroom Management

"To a great extent, the success of any distance education effort rests squarely on the shoulders of the faculty" (Willis, 1993, p. 28). The teacher of a traditional classroom has several responsibilities which include organizing course content; understanding student needs; using relevant content examples; monitoring class progress; and modifying content delivery and use

of examples (Willis, 1993). Willis (1993) compares the distance education teacher to a traditional classroom instructor by noting that the former must accomplish the same tasks as the latter, but is even more challenged in this process.

Willis (1993) offers several tips for instructors to adapt their delivery systems to meet the needs of students. Adaptation is the key word. He encourages instructors to be sure the students are comfortable with the course communication patterns; to try to understand the student's backgrounds and life experiences (and to model this by sharing personal life stories); to be attuned to different communication styles and different cultural backgrounds; to encourage students to take an active role in the distance education course (and to emphasize their need for independent activity and responsibility for their own learning); and to assist students in learning the delivery technology (Lochte, 1993) so they, too, can deal with technical problems.

As in the traditional classroom, strategies should be developed by the instructor for student reinforcement, review, repetition and remediation. Instructors are challenged to remember the time element; be realistic in the assessment of how much content can be covered in one class, avoid long lectures; and use a variety of instructional techniques such as content presentations, discussions and student-centred exercises (Hayes, 1989). As well instructors are cautioned to be aware of the different learning styles of the students. It is more difficult for instructors to determine these differences when using distance delivery.

As with any effective teaching, it is a good idea for a distance educator to present course goals and objectives to the students both verbally and in written form (Holmberg, 1977; Willis, 1993). This is usually done during the

first class, provided the students have received their information packages. Then, subsequent classes should begin with a review of what has been previously covered and what will be covered in this class (Holmberg, 1977; Willis, 1993).

Some teaching strategies are more effective for distance delivery courses than others. Unlike the regular classroom teacher, the video-conference instructor must make the effort to humanize the course by focussing on the students rather than the delivery system. "To be effective, the technology of distance education should remain relatively transparent, allowing instructor and students to concentrate on the process of teaching and learning" (Willis, 1993, p. 4). Transparent technology is exemplified when neither the instructor nor the learner is conscious of video cameras and/or terminals. Instructors should try to use locally relevant examples to further exemplify the course content, personalize their involvement and, if at all possible, teach one class of the course from each site (Kitchen & Minnesota, 1992; Willis, 1993). Instructors should vary the pace of the course delivery (Kitchen & Minnesota, 1992; Willis, 1993). The speed should be faster for reviewing and slower for presenting new material. The use of these teaching strategies should lead to worthwhile experiences for the instructor as well as the students involved in distance delivery courses.

All of these techniques can go a long way towards ensuring that the students of a distance delivered course will not be hindered by changes to their learning environment. Knowledge of subject matter, preparation, organization, communication, interaction, and concern for students are crucial elements of any effective learning environment (Lochte, 1993).

As in traditional instruction, it is very important to be well-planned as an interactive video-conferencing instructor. Material should be conveniently

packaged for distribution. Before the start of the semester, all tests, handouts, and a detailed schedule should be printed and ready for distribution on certain dates (Lochte, 1993). Mail is one way to transport assignments, papers and exams back and forth between sites; a postmark can be stated as the deadline for submission (Lochte, 1993). Graded assignments can also be returned via the postal service (Lochte, 1993). With increasing use of the Internet, e-mail, and web pages, these may well become the more expedient means of submitting and returning course assignments. Using good visual aids will serve to illustrate content in lessons, focus the students' attention on appropriate points, and break up the monotony of staring at a television screen for an hour or more (Lochte, 1993).

Lochte (1993) stated that there are two qualities which separate the good interactive television instructors from the poor. Firstly, the good instructor is well-prepared; s/he has planned and organized each class long before entering the classroom. Secondly, s/he considers the needs of the students. Interactions are regularly planned to provide feedback to the instructor on the learning process, and to inform the students that the teacher cares about them and wants their involvement and input into the process (Lochte, 1993).

In general, if the teacher is well organized, and has planned more than s/he expects to cover, and makes the effort to interact with the students by whatever means, then distance delivery should be an interesting and effective experience (Lochte, 1993).

The distance delivery instructor must become a skilled facilitator as well as being the primary content provider (Holmberg, 1977; Willis, 1993). Instructional elements such as course content, technology, and individual student needs must be merged so that the teacher becomes both a facilitator

and a transmitter of knowledge. According to Willis (1993) several skills must be developed by distance educators if distant teaching is to be effective.

The teacher must model promptness in coming on line and insist that students are also prompt in this manner (Willis, 1993). This is comparable to students in a traditional classroom attending class on time.

A slow, clear, and natural style of speech is important for the delivery of a distance class. In other words, the teacher should avoid prepared speeches and reading as though from a script (Hayes, 1989). The delivery style should be of a spontaneous nature. The establishment and maintenance of an appropriate pace is important (Kitchen & Minnesota, 1992).

Also, to aid in this delivery process, it is worthwhile to use consistently effective visuals (Willis, 1993) and the instructor should include the transmission of visual images to all the students either by the television monitor or in their prepared packages. The pace of delivery should frequently be altered to maintain the interest of the students.

In each class session, the instructor should briefly summarize the concepts that have been presented (Willis, 1993). This is especially important when using class discussion techniques because it is difficult for some students to develop for themselves the main ideas of the class. Also, the instructor should be sure to seek and clarify common terms, clearly defining content-oriented vocabulary.

The instructor should be consistent in the use of authority. One idea is to have a democratic atmosphere where authority is shared (Willis, 1993). For instance, although dialogue is emphasized it is still important for the instructor to control the "verbal traffic" (Willis, 1993). The instructor can provide social and emotional support by integrating late participants and encouraging humour (Willis, 1993). The instructor should create a feeling of shared space

and history (Kitchen & Minnesota, 1989), and demonstrate appropriate behaviour, by being a role model for students (Willis, 1993).

If the instructor takes the time and energy to develop these aforementioned skills the results will more likely be rewarding to both the instructor and the students (Willis, 1993). Distance delivery courses generally require more time than a traditional course in the same subject and at the same level. Time is needed to understand and appreciate the students, to adapt content examples to the group, and to master effective use of the technology. (Acker & McCain, 1993; Hayes, 1989; Holmberg, 1977; Willis, 1993).

“Good teachers may have had a bad experience with ITV [interactive television], but bad ones will always fare poorly in the medium” (Lochte, 1993, p. 59).

When you are watching television, after ten minutes or so, do your eyes start wandering around the room focussing on anything and everything except the television set? If so, this explains why television programmers provide breaks every eight to ten minutes (Lochte, 1993, p. 16). This is an important concept for distance educators to consider. In distance delivery it probably means that students at a distance will only see what the teacher directs them to see and, every eight to ten minutes students will begin to look around the room regardless of what the instructor is doing (Lochte, 1993). To combat this phenomenon, the instructor’s presentations need visual variety; and if student attention still gets lost, instructors should quickly attempt to refocus their attention (Lochte, 1993). Greater variety in presentation techniques is needed for longer class periods (Lochte, 1993).

Another point made by Lochte (1993), is that television monitors do not reproduce the picture material exactly. Partially due to transmission and

partially due to receiver design, approximately ten percent of the border area can be lost with each televised transmission (Lochte, 1993). As a result, all information, being transmitted to students, must be positioned in the centre of the screen and should have a protective border as a safe area (Lochte, 1993).

Student Learning

Over the past several years, researchers have investigated distance teaching and evaluated student attitudes towards the use of distance education methods. This research has resulted in some fairly consistent conclusions. According to Willis (1993), distance education can be very effective if teaching techniques and delivery methods account for the needs, diversity, and context of the distance learners. "Meeting the instructional needs of students is the cornerstone of distance education, and the test by which all efforts in the field are judged" (Willis, 1993, p. 25). If the primary purpose of the student is to learn, the challenge for instructors is to motivate students (Holmberg, 1977), plan instruction, and demonstrate how to apply the information being taught (Willis, 1993). Students must be motivated, prepared for class, willing to ask questions, and familiar with the technology being used (Willis, 1993). Teachers must encourage these attributes to increase the amount of learning that occurs and the students' satisfaction (Willis, 1993)

There are fundamental principles which underscore how students learn. Burge and Roberts (1993) list the following principles as those which guide their practice. If students are free of undue stress, boredom, information overload, and are not occupied trying to second guess the teacher's objectives, they are able to learn. When their relevant past experiences are applied in the learning activities, their learning is assisted. The collaboration of teachers and learners to set directions, design and use activities and to assess outcomes

enhances the learning process. Seeing new ideas and practicing these ideas helps students to learn. When students have opportunities to learn by means of their preferred learning style, learning is augmented.

Rapport

Allocating time for teacher-student conferences is also an important component for consideration (Lochte, 1993). Conferences are specific time periods, outside of class time, where the instructor and student can freely discuss any aspect of the course. Burge and Roberts (1993) agree that appropriately used conferencing technologies can promote interaction between the learners and the teacher. Conferences are necessary to develop a personal rapport with the students (Lochte, 1993). Once again planning is essential for the conferencing process to be effective. At both sites simultaneously, the rooms must be available, as must be the student and the teacher. Also, other sites must be off the network to insure privacy (Lochte, 1993). If student-teacher conference time is scheduled into the master network schedule, then facilities will be available solely for this purpose and individual conferences can be scheduled into these time blocks (Lochte, 1993). If there are no conferences being held in one of these time spots, technicians can utilize this opportunity for maintenance, installation, testing, or demonstration and training (Lochte, 1993). Although video-conferences are preferable, it may be equally effective and easier to simply arrange a telephone call (Lochte, 1993).

It is desirable to travel to the remote sites at least once per site per semester (Lochte, 1993). In this way, teachers are able to personally meet students and provide all the sites with the opportunity to be at a distance from the instructor.

Interaction

Interaction and feedback are essential components of an effective

distance learning environment (Barker, 1992; Bates, 1984; Holmberg, 1977; Willis, 1993). "The concept of interactivity and its role in distance learning was important in the majority of the research reports examined" (Acker & McCain, 1993, p. 11). The key ideas regarding interactivity include: interactivity is less important for highly motivated students taking focused course work; visual images of a high quality may be as important as interactivity; feedback between the learner and teacher is necessary for the development and improvement of education (Kitchen & Minnesota, 1992; Willis, 1993); and successful interactive video courses require time for both teachers and students to fully utilize the media (Acker & McCain, 1993; Hayes, 1989; Holmberg, 1977; Willis, 1993).

There are many forms that this interaction and feedback can take. Willis (1993) suggests that instructors should contact each site or student every week if possible. They should also notice which students do not participate in class and contact them individually after class. Instructors should return assignments promptly; facsimile, electronic mail or even courier (Kitchen & Minnesota, 1992) are all faster than mail delivery (Willis, 1993). Instructors should be sure to write detailed and useful comments on assignments, arrange telephone office hours using a toll-free phone number and encourage students to call (Barker, 1992; Kitchen & Minnesota, 1992). Early in the course, student-initiated calls should be mandatory to help students to become more comfortable with this process. Through the use of appropriate teaching strategies, instructors should encourage critical thinking and informed participation by the students. Journal writing on the part of the students (Willis, 1993) and teachers (Kitchen & Minnesota, 1992) is a good way to remain focused on what worked and what did not throughout the course. Student journals can be submitted periodically throughout the session.

To stimulate participation by all students at all sites, instructors can use study questions, joint assignments, group presentations and role playing. Kitchen and Minnesota (1992) concur that role playing and group presentations are important tools to encourage interaction among students. Game playing can be a productive interactive activity but instructors need to be sure to have teams made up of students from a variety of locations rather than simply school versus school (Kitchen & Minnesota, 1992). Instructors should attempt to meet the students face-to-face whenever possible and encourage them to stop and visit anytime. This personal interaction with the students should encourage participation and feedback. Instructors should stress the importance of asking questions, remembering there is no such thing as a stupid question. According to Kitchen & Minnesota (1992), each student should be addressed each day and instructors should be sure to address their students by name, not by location, to reinforce that all students are part of the class.

An excellent method of improving on the techniques involved in using interactive video is to ask the students how the picture looks or how it could be improved (Lochte, 1993). After a while, they will volunteer information and that is what interaction is all about (Lochte, 1993).

By using these strategies, distance education instructors can provide a very effective, interesting and worthwhile experience for their students. To meet many educational objectives, it is crucial to have interactivity and feedback (Acker & McCain, 1993).

Another major lesson plan adjustment might be to develop interactive exercises (Lochte, 1993). The simplest interactive exercise is the use of words, such as roll call (Lochte, 1993). Class conversations, using students names, are vital in developing personal relationships and camaraderie among class

members (Lochte, 1993). In other words, to maintain interest levels, instructors must draw the participants into discussions (Hayes, 1989) and frequently refer to students by name (Kitchen & Minnesota, 1992). Burge and Roberts (1993) agree with Lochte (1993) and Hayes (1989) that the learning strategy perceived as most effective for distance learning classrooms is a productive discussion with peers. When learners share personal experiences and listen to others' experiences, knowledge can be broadened (Burge & Roberts, 1993).

Collaborative learning, as this is called, may not be well thought of by many educators. Some instructors believe that these methods result in the "blind leading the blind" and thus, no rigorous academic work is completed (Burge & Roberts, 1993). Other perceptions are that the students may feel the instructor's are "not doing their job" or "opting out" (Burge & Roberts, 1993). Perhaps continuous conversations will result in the exposure of learning disabilities or differences in opinion which are difficult to resolve (Burge & Roberts, 1993). These perceptions are plausible, and even likely, but it is quite possible that a discussion at the start of a course about the process and products of collaborative learning could dissolve all of these false notions (Burge & Roberts, 1993).

Collaborative learning does require preparation and management to be successful. It does not come naturally to all students and teachers although, when learners are helped to learn with and from one another, the outcomes can be remarkable (Burge & Roberts, 1993).

According to McBeath (1992, as cited in Burge & Roberts, 1993, p. 9), there are three main types of collaborative learning discussions each with its own framework of goals. The "instructor-directed discussion" has the goals of encouraging participation, allowing for interaction, recognizing contributions,

clarifying vocabulary and content, and identifying assumptions. The “group-centred discussion” builds on experience, strengthens relationships, poses questions, explores hypotheses, synthesizes ideas, and scrutinizes assumptions. “Collaborative discussion” is involved in problem solving, sharing of responsibilities, comparing alternatives, testing hypotheses, acting on criteria, and changing assumptions. Burge and Roberts (1993) suggest using these aforementioned goals as a means of assessing classroom discussions.

Burge and Roberts (1993) assume that the interactive technology can and will be used along with print and/or audio visual course materials. In this way, most of the “content” of the course is delivered. Nevertheless, the interactive technology, such as video-conferencing, promotes “live” person-to-person dialogue - that is, informed discussion - about the content as well as the relevant personal knowledge and experiences of other class members (Burge & Roberts, 1993). Using conferencing technologies can promote interaction between learners and their instructor, between a learner and the library staff, or even between learners and a guest speaker (Burge & Roberts, 1993). Furthermore, using technology skilfully will promote productive interaction amongst the learners (Burge & Roberts, 1993). Dialogue of this sort is a key in learning if the teacher values inter-dependent and self-responsible learners (Burge & Roberts, 1993).

Distance Education versus Traditional Education

Interactive television is often described as the next best thing to being there. Thus, it is often compared to the traditional classroom. Burge and Roberts (1993) state that the entire network of distance education methods emulates, in many ways, the traditional face-to-face classrooms because everyone can talk across the class space to everyone else and expect a response. However, Lochte (1993) states that interactive television classes

are quite unlike having a live instructor in the room with live students.

Lochte (1993) further elaborates that like any course being taught, or any other complicated endeavour being attempted, detailed planning and practice will enhance the competence levels being developed with video-conferencing (Lochte, 1993). When students are taught about the technology as well as the subject matter (Willis, 1993), their learning experience will be enriched, and they will become partners in the learning objectives that have been established (Lochte, 1993).

Effective instructors adapt their course material, teaching methods, and speed of instruction as the class progresses. In a traditional classroom, it is generally very clear which students are and are not interested and involved (Willis, 1993). Using distance delivery, instructors may be unaware of a student's off-task behaviour. Instructors must elicit feedback from students to be aware of each student's conduct.

The idea behind distance education is that there can be effective learning environments other than the traditional classroom. In assessing whether the distance education classroom is as effective as the traditional classroom, there are many factors to consider, including instructor competence, student motivation, geographical separation, and specialized subject matter (Lochte, 1993). Regardless of how a course is organized and delivered, the quality of the learning experience is largely dependent upon the ability of the people involved to cooperate (Lochte, 1993). For an instructor this means taking the time to ensure effective communication with the students and facilitators as well as maintaining a well-managed classroom environment. He further states that the development of these skills is just as important as subject matter mastery. To teach well, instructors must pay attention to the needs of the students; that is, what they are learning and how

the class can be managed in order to optimize this learning.

The Need for Empirical Research

Empirical research in the area of two-way interactive video-conferencing is extremely difficult to locate. I am not the only person having this difficulty. In 1993, Acker and McCain (p. 1) attempted to conduct a literature review in this area and could not achieve their objectives:

The report originally intended to examine the success of two-way distance interactive video over other forms of distance learning. The objective could not be attained due to the lack of definitive research.

Acker and McCain (1993, p. 4) offer an explanation for this lack of literature. They say, "... the literature on two-way video is still in the 'pioneering' phase, and like early research in other domains is necessarily descriptive rather than comparative or evaluative in nature."

In 1989, Bosco was studying interactive video and commented that he had often heard that evaluations of interactive video were scarce but he disputed this claim. He contended that, "The perception of a scarcity of evaluation reports may be a consequence of the difficulty in getting access to them" (Bosco, 1989, p. 130). Of the 28 reports he was able to locate, only eight were published in journals, five were presented at conferences, and the remainder were not available outside the agencies which conducted the research (Bosco, 1989, p. 130).

Similarly, a research overview written by Kitchen and Kitchen (1988, p. 39) begins:

What does research say about two-way interactive television (ITV) and its effect on ... teachers, and students? Actually, not many empirical studies of ITV have been conducted in this area.

In 1984, Morgan lamented about the few empirical findings related to studying at a distance and goes on to state the advantages of qualitative

research methodologies.

Bååth (1982, p. 13) has similar remarks:

... on the whole there is a severe lack of scientifically validated knowledge - someone would perform a very great service indeed if he/she would carry out a major empirical research study on the learning strategies of distance students - if possible including intensive studies by means of interviews and even observations of actual learner behaviour.

Clearly there is the need for further research which this study will attempt to provide. Nevertheless, I will report on those few distance education studies focussing on video-conferencing, or as close to video-conferencing as possible, that I have been able to locate.

In a study by Ho (1994), a Distance Education Technology course was offered by the University of Hawaii for three weeks during the summer of 1993. The goal of the course was to explore various technologies for delivering and retrieving information for school-based and distance instruction. The course was delivered live and interactively over the Hawaii Interactive Television System (HITS) which is a two-way audio and two-way video system. Class activities included: lectures, guest speakers, demonstrations, class discussions and team presentations. Facsimile and electronic mail were used to submit assignments and class projects were presented by students live over the system. The origination site had 45 students while the other five sites had a total of 22 students combined. The outcomes, relevant to this study, are that there were no differences in overall course ratings between on-campus and receive-site students and the use of e-mail was clearly identified as a critical component for the success of the course.

A study by Egan, Welch, Page and Sebastian (1992) sought to examine the perceptions of learners across instructional delivery systems. The subjects were either bachelor's certification students enrolled in a teacher

preparation program or graduate students completing a master's degree in special education. Only the results of the Educational Network of Utah (EDNET) and will be discussed since it is the closest technology to the one used in this case study. EDNET is a closed-circuit microwave system that provides live, interactive television. In other words, EDNET provides two-way audio and two-way video. The EDNET system was evaluated by 93 distance learners who completed a survey. Significant differences were found between some of the responses provided from conventional instruction learners and EDNET learners. These included their responses when asked about: organization of course content; clarity of course content; relevance of course objectives to class sessions; integration of text and assignments; value of visual materials; and value of text screens. In each of these areas, the means for conventional delivery system were higher than for the EDNET system. The authors state that these results indicate that it may be the instructional relationship associated with the face-to-face aspect of the conventional delivery system that is a contributing factor to differences noticed between conventional instruction and the EDNET system. Factors such as accessibility to the instructor, immediacy of feedback, and the instructor's ability to monitor student behaviours (verbal and nonverbal) during session interactions may influence on-campus learners' perceptions.

This next study utilizes a slightly different interactive technology yet it may still be valuable for this case study. Souder (1993) conducted a natural experiment that allowed comparisons between a traditional and a video-based, satellite-transmitted course. A natural experiment was defined as one which is not initiated as a designed experiment but rather which presents itself by virtue of the circumstances. The number of sites involved in the study is not clear but it appears that 21 different locations may have been involved.

Students could view the course either as live broadcasts or later as videotapes of those broadcasts. Those students watching the live broadcasts could see the instructor and the classroom, and were able to ask questions or interact with all parties during the broadcasts through voice-amplified telephone lines. Thus, one-way video and two-way audio was being used. The results indicate that the distance learners performed better than the traditional learners as measured by exams, term papers, and homework assignments. The instructor stimulated the distant students by providing quick feedback on homework, and by frequently initiating telephone contacts with them. Thus, this study reinforces the value of giving quick feedback on homework to distance education students, as well as emphasizing the valuable role of frequent telephone or other electronic media contacts between instructor and distance students. Souder (1993) concludes the paper by expressing a need for more empirical study in this area.

Another, albeit older, one-way video, two-way audio course using satellite communications was studied by Barker and Platten (1988). The purpose was to assess student attitudes regarding the effectiveness of satellite instruction. A total of 34 students, attending at 13 different sites, were involved in this course. Questionnaires were mailed to 31 students and 26 responded (83.9 percent return). The results indicate that motivation to enrol in the course was primarily for credit towards their degree. Most students felt that satellite instruction maintained their interest as well as traditional instruction, but some indicated that it was less interesting and only a few stated that it was more interesting. Similarly, most students reported that they prefer traditional instruction over satellite instruction. A low level of student-initiated teacher-student interaction during class time was shown. The author explained that this may be due to the fact that almost half of the

students were unable to receive all thirteen broadcasts. There were a lot of technical problems during this course. Some students indicated that it was easier to let their "mind wander" in the satellite class than it would have been in a traditional class. Overall, the greatest weakness reported by the students was the limited interaction with their instructor and with other students at other sites.

The empirical study, that I could locate, which most closely resembles my case study was conducted by Treagust, Waldrip and Horley (1993). These researchers conducted a case study using qualitative and quantitative data collection methods and looked at two campuses and two courses using integrated services digital network (ISDN) in the form of PictureTel technology. Thus, simultaneous two-way audio and two-way video was achieved. The purpose of their study was to evaluate the video-conferencing technology and to pay particular attention to those factors contributing to the success and/or failure of the video-conferencing medium as well as to student learning outcomes after experiencing the medium. Observation, interviews, and a questionnaire were used to gather data. Course A involved 13 students at one site and three students at the other site and a team of four instructors; whereas course B involved 17 students at one site and eight students at the other and one instructor. The questionnaire was returned by all course A students and 12 course B students but those students who had not returned the questionnaire had withdrawn from the course. The positive responses from the students indicated that they appreciated the opportunity to use new technology; complete courses which would not normally be available; and interact with students from other centres. The fact that instructors had to be well-prepared to present classes was also viewed positively by some respondents. Students negative responses included: a loss of spontaneous

interaction; the high level of concentration required to understand the course material; the perceived reduction in the amount of course content being presented; and the difficulties with the technology. Ultimately, these authors conclude that a video-conferenced class is an appropriate medium to deliver education to students. Treagust, Waldrip and Morley (1993, p. 316) concur with other authors (Acker and McCain, 1993; Bååth, 1982; Kitchen and Kitchen, 1988; Morgan, 1984; Souder, 1993) that empirical studies in this area are not readily available.

A review of the literature on educational technology, distance education, and instructional methodology revealed very little pedagogical research on the implications of using this medium for delivering distance education programmes.

Those few studies which are remotely similar to this case study have concluded that instructor-student contact outside of class time is necessary for the success of distance education students (Ho, 1994; Souder, 1993). Ho (1994) suggests the use of e-mail for this purpose and Souder (1993) suggests telephone contact or other electronic means which may include e-mail. Similarly, when learners' perceptions were studied, accessibility to the instructor, immediacy of feedback, and instructor's ability to monitor student behaviours were determined to be possible influential factors in determining student opinions (Egan, Welch, Page & Sebastian, 1992). Other authors (Acker and McCain, 1993; Egan, McCleary, Sebastian & Lacy, 1988; Haughey, 1993; Souder, 1993) have also concluded that quick feedback is important to the success of a distance program. Technical difficulties were sited as a detrimental influence to any distance delivery program (Barker & Platten, 1988). Authors of two studies (Barker & Platten, 1988; Treagust, Waldrip & Morley, 1993) noted that students in the remote site have to really concentrate to understand the course material and that students can easily

become distracted by their surroundings. However, in the research I've viewed, there appears to be no difference in student outcomes of distance learners and their traditional counterparts; they are equally effective (Acker & McCain, 1993; Bates, T., 1993; Brey, 1991; Egan, McCleary, Sebastian & Lacy, 1988; Egan, Welch, Page & Sebastian, 1992; Ho, 1994; Treagust, Waldrip & Morley, 1993). Yet, Barker & Platten (1988) are not prepared to declare that satellite instruction is as effective as regular classroom teaching nor is Bosco (1989) prepared to state that interactive video is more effective than traditional instruction.

Summary

This review has focused upon the video-conferenced form of distance education while also attempting to define effective teaching and, most particularly, student-teacher rapport. The term 'distance education' was defined, followed by a brief discussion of the various types of distance education. Several specific technologies were elaborated upon. This preliminary discussion and review of the relevant literature led to an elaboration of video-conferencing technology which is the primary focus of this study.

Through the process of this review, these two main areas of establishing student-teacher rapport as a means to effective teaching and learning, and teaching using video-conferencing technology have been connected. However, despite the vast amounts of information about teaching techniques useful for video-conferencing instructors, there is a gap in the literature when it comes to the creation of student-teacher rapport generally in education, but also the development of student-teacher rapport specifically in video-conferencing. This study will begin to research further into this undiscovered area of student-

teacher rapport in video-conferencing. More specifically and with regard to this particular case study, the following questions will be addressed:

- a) Is rapport established between the instructor and the students?
Why or why not?
- b) What are the student's perceptions of the instructor, the course and the video-conferencing with particular regard to rapport?
- c) What are the instructor's perceptions of the students, the course and the video-conferencing with particular regard to rapport?
- d) Based upon this case study, what recommendations can be made with regard to the development of an instructor-student rapport in future video-conferenced courses?

CHAPTER III

METHODS

“Qualitative research” is an umbrella term used to refer to certain research strategies that have common characteristics: collecting “soft” data, that which is focused upon descriptions of people, places and conversations; not necessarily approaching the research with a specific question to answer nor a hypothesis to test; being concerned with understanding their actions from the viewpoint of the actor; and collecting data by spending time where the subjects spend their time (Bogdan & Biklen, 1982). My research meets the above criteria except that I am working with a research question.

This study might also have the adjective “naturalistic” applied to it since the data was collected by my attendance at the location where the events naturally occurred (Bogdan & Biklen, 1982). It is certainly phenomenological in that I sought to understand the meanings of the events I saw (Bogdan & Biklen, 1982) in the video-conferencing classroom, yet, the German word used by Max Weber, “*verstehen*”, which emphasizes the “profound understanding evident when one can appreciate a person’s behaviour in terms of the interpretive ... meaning he or she attaches to it” (Palys, 1992, p. 416), likely will not result. Thus, it is not truly a phenomenological study. Also, it has the ethnographic characteristics of being an “analytical description of an *intact* cultural scene” (Borg & Gall, 1983, p. 492), but it is not being conducted over an extended time period. A “microethnography” most often “refers to case studies done either on very small units of an organization ... or on a very specific organizational activity...” (Bogdan & Biklen, 1982, p. 62). Thus, this proposed study may be a microethnography in that I am interested in one

small component of a culture, namely student-teacher rapport; and one specific unit of an organization, namely video-conferencing.

This is a case study since I conducted a detailed examination of a single group (Borg & Gall, 1983); that is, one particular course. As well, I have classified this as a microethnography which has been defined as a form of a case study. Participant observation, ethnography and case study are considered by Smith (1978, as cited in Borg & Gall, 1983) to be essentially synonymous. A case study is often based on the presumption that one case can be located that is typical of several other cases (Best, 1981; Borg & Gall, 1983); therefore, careful, thorough, in-depth observations of the single case can provide insights into the group of events from which the case has been drawn (Borg & Gall, 1983). A case study of one particular video-conferenced course may lead to the collection of rich subjective data that can assist in the development of theories or hypotheses to be tested later (Borg & Gall, 1983). Best (1981) states that in-depth analysis is the key to a fruitful case study.

Since, according to Borg & Gall, 1983, p. 489, "a case study must involve the collection of very extensive data in order to produce an in-depth understanding of the entity being studied", and since I have attended each class and spent as much time as possible with the course instructor, this proposed study can be classified as an observational case study. According to Bogdan and Biklen (1982) and Borg and Gall (1983), an "observational case study" involves focussing upon a group of individuals who interact over a period of time, such as video-conferencing students and their instructor over the course of a six-week semester. It also involves an organizational focus, such as an institution or, in this case, a classroom combining two institutions (Bogdan & Biklen, 1982; Borg & Gall, 1983). Such studies use participant observation as the main data collecting tool and are concerned with ongoing

groups of people (Bogdan & Biklen, 1982; Borg & Gall, 1983).

The role of a participant observer will be discussed further in a later section, but it is important to note here that in this role the researcher functions “primarily as an observer but may participate enough to gain rapport with the group and develop a better understanding of the group’s functions and relationships” (Borg & Gall, 1983, p. 490). This is most certainly a criterion of this study.

According to Best (1981), case study data may be collected in a variety of ways. Researcher observation of group behaviours; subject interviews; questionnaires; and recorded data from newspapers, schools or other sources are suggestions (Best, 1981).

Researcher Autobiographical Information

I grew up in Hinton, Alberta as the daughter of a Teacher/Librarian and a Stacker Operator. At an early age, my parents, Hazel and Adrian Hart, instilled in me the value of attaining post-secondary education. They are retired now. I have one older brother, Lowell, who works hauling gasoline and also as a volunteer fire-fighter. He is currently taking fire-fighting courses to be certified as a Lieutenant. I have been married for three-and-a-half years and my husband, Kevin, has a Diploma in Environmental Science in Renewable Resource Management and is currently studying at the University of Lethbridge towards a Bachelor of Science degree in Geography.

Immediately after high school, I moved to Edmonton to attend the University of Alberta (U of A). Despite the family pressures to follow in the footsteps of my mom and my aunt to become a teacher and graduate with a Bachelor of Education degree from the U of A, I resisted and convocated in 1987 with a Bachelor of Science degree in Home Economics as a Foods and

Nutrition major. I worked for a couple of years at an Advertising Agency before deciding to seriously consider the Education field.

In 1989, I moved to southern Alberta to take a six week course of practice teaching (Education 2500) to see if I would like this occupation. The summer course went very well and I was admitted to the Education Faculty for September 1989. I finished my University of Lethbridge Bachelor of Education degree by December 1990 (convocated in May 1991) and was offered a Home Economics, Foods only, teaching position exactly one week after writing my last final exam. This position happened to be in the very classroom in which I had student-taught that semester; I was incredibly fortunate! I still teach Foods to grades eight through 12 as well as some junior high options. Basically, I have been employed in this same position ever since.

I have always wanted a master's degree but I had never found the time to attend university until I had my third, right hip replacement in May 1993. The physician accidentally shattered my thigh bone. As a result, I was unable to work since teaching involves a great deal of walking. This is especially true for me because I teach Foods where it is very important to walk around the kitchens and inspect students' work.

I was discharged from the hospital in July 1993 and was virtually house-bound until late November 1993 when I was finally able to drive my car. By this time I had completed numerous crafts, inventoried the contents of my house, reorganized bookshelves into categories, and labeled and alphabetized my kitchen spices. In other words, I was becoming extremely bored and very depressed! I needed to do something - anything - meaningful. Thus, at my husband's urging, I decided to apply to the University of Lethbridge Graduate Studies program. I wanted to start in January but, at that time, one could only be admitted for May or September.

I strongly believe the saying that, “there are no problems, only opportunities” and thus, I used this time when I could not work to develop professionally and gain a Master of Education degree. One must maintain a positive outlook in the face of adversity – if you are given lemons, then you should make lemonade.

Once I had decided to strive for my Master of Education degree, I began thinking and searching for a thesis topic. I always knew I wanted to write a thesis; there was no decision to be made between a project and a thesis. While I was attaining my first undergraduate degree at the University of Alberta, my aunt was registered in the Faculty of Education graduate program. I recall meeting her in her office and watching her write her thesis. She gave me a copy when it was bound. My mom, my mentor, has completed the necessary years at the University of Alberta, however she never completed her thesis. Nevertheless, she did write a book called the *History of Hinton* which involved a vast amount of research. I remember going with her while she interviewed old-timers out in the country. Some of them had wonderful stories to tell. One fellow used to be an R.C.M.P. officer and was then a trapper. We visited him in a tiny log cabin in the middle of nowhere. He lived there with his dogs. I remember the place was absolutely full of old newspapers dating back to the early 1900's. My mom had hit a historical gold mine. He even gave my mom a copy of another history book which had been written on this area; she had obviously read it before but this one was different. Albert (this hermit) had written throughout the margins - he had corrected all of the errors! My mom confirmed these comments at the Glenbow Museum in Calgary and they were indeed errors.

I became interested in distance education due to the combination of many factors. I visited Dr. Robert (Bob) Anderson (former Dean of the

University of Lethbridge Faculty of Education) at his home to ask him to be one of my referees for admission to the program. As we were chatting, he brought up the topic of distance education. I only knew a little about this subject from my mom. She was the Chairperson of the Board of Governors for the West Central Alberta Distance Education Consortium, and she often spoke of this topic. As a result of these two people, I kept distance education filed in the back of my mind while I continued to seek out a thesis topic. Later on I watched Ralph Klein's televised speech, in January 1994, about the provincial cutbacks. He mentioned that money would be put into distance education in this province. The lights of my mind went on! I decided if I could become knowledgeable in this field before many other people do, I may be able to find myself an office position, with a minimal amount of walking, and thus be able to work again. I became extremely excited because I had decided a goal for my future.

I have spent many months of my life in hospitals mostly in the United States, I wonder now how distance education could have been used so that I could have still attended classes with my classmates here in Canada. I did have to go to hospital school but I really did not enjoy it. I recall lying on a stretcher on my stomach to learn how to type. I considered conducting some sort of research into making children in hospital schools accessible to their own classmates and teachers. I know that would have made my experience much less traumatic. Later on, with assistance from the Research course (Education 5400) instructors, Dr. Dennis Sumara and Dr. Brent Davis, I narrowed my topic to student-teacher rapport in video-conferencing.

In retrospect, I believe that my mom and my aunt were grooming me for graduate school at a very young age. I was about 14 years old when my mom took me with her while she was conducting her research. I know I used to

spend many days during spring break with my aunt at the school she taught at in Edmonton when I was just a young girl. I think they may have subtly been planning my future for a long time. Prior to starting this study, I took out my aunt's thesis. I knew exactly where it was from my reorganization of the bookshelves - I guess that was a good idea after all. Anyway, I opened the front cover because I could not remember if it had been autographed. The inscription reads: "Loya - This is an advance trade-off for your future thesis. - Aunt Martha."

Thus, my background, for this thesis, is in Education. I believe there is a continuum of sorts where on one end, it is the instructor's responsibility to make sure student's learn the course material. On the other end, there are those who believe it is the students who are ultimately responsible for their learning once the instructor has provided the instruction. I am clearly of the point of view that the instructor is responsible for student learning and therefore, I firmly believe in the value of a strong instructor-student rapport to lead to effective teaching and learning. Rapport is only an issue if this belief in instructor responsibility is held. Therefore, there is the distinct possibility that I view this study in a particular way which may influence the results which have been reported.

Background Information

Since 'effective teaching' is recognized by most instructors as a goal worth striving towards and is also a prominent, well-documented topic in the research on teaching, thus, the question of its relationship to the video-conferenced classroom appeared important. Particularly, the study of student-teacher rapport in a video-conferenced classroom.

Thus, it was necessary to gain access to a video-conferenced classroom where the post-secondary institution instructor and students would agree to data collection. After much searching and having several potential research locations not materialize, a distance education course utilizing video-conferencing technology was found. The necessary approval from this mid-sized post-secondary institution was granted, as was the approval of the instructor and the students.

The course being observed involved a video-conferenced link between the students and instructor of the mid-sized university offering the course (hereafter Site A) and the students of a mid-sized college in another location. The students of this college actually used the video-conferencing equipment of a nearby university (hereafter Site B) for this course. The course was offered Tuesdays and Thursdays for three hours each evening for six weeks.

Also, three of the students who would normally drive to Site B to attend classes with their fellow cohort members did not have to do so. They received an audio-conferenced link from the Site A instructor to their more northern location. During the last hour of each class, students from yet another college in another location were joined to the class via an audio-conferencing link.

These latter students had their own, on-site, course instructor and the idea was that the entire class would be patched together to have an in-depth class discussion or debate. In fact due to technical difficulties, this link rarely materialized and this desired discussion never occurred.

Therefore, due to the use of audio-conferencing and the resulting difference in the establishment and perceptions of rapport with these audio-conferenced students, I decided to omit these components from this study. The result is the data collected were drawn from only those students and the instructor involved in the video-conferenced link.

Selection

Due to the limited availability of locally established and operating video-conferenced distance education courses, my selection was based solely on accessibility and availability. Two other potential locales had become unavailable prior to finding this operational distance education course. It was a difficult search to find an environment which met my criteria. Therefore, this was a convenience sample of a video-conferenced course.

The course had to be conducted in an interactive video-conferencing mode since this was the object of my research. The equipment used to achieve this was not a selection criterion.

Both the sending and the receiving institutions had to be within a reasonable driving distance so that I could visit each site on a regular basis. Since my primary interest was rapport, it was important to be able to attend a course in its entirety as opposed to merely observing only a few weeks of a course. As well, the institution and the instructor offering the course had to consent to my study. Therefore, once the aforementioned requirements were found in one situation, that became the study site.

Settings

Site A

The distance education classroom at this site is the larger of the two sites. Although the room is nearly square at 15.2 x 12.8 meters (50 x 42 feet), the desks are set up diagonally across the room. There are five rows of long, but slightly rounded, tables with attached plastic chairs that swing out. The first two rows of desks have a walkway up the middle of them, thus placing two tables per row, and the last three rows each row being one long desk. The back

two rows are on a one-step riser. There is one place at the main entrance to the room where there is no attached chair. This spot is meant for a wheelchair but in actuality the one student in a wheelchair could not fit into this spot because the space was too narrow for the wheelchair to turn and roll under the desk. This student parked sideways beside this desk and swivelled her body to write.

One call-button is placed for every two students and microphones are ceiling-suspended: two for the first row, four for the second row, and two for the back row.

There are three doors used to enter or exit the room. Each is near a corner either to the sides or directly in front of the students' seats. Posted on the outside of the main classroom entrance is a sign which reads: "No food or beverages." Posted around the inside of the classroom are "No smoking" signs. The two walls behind the students slide back to enlarge the room size to hold 117 students, however, this was not needed for this course. When the wings are closed, as they were for this course, the room holds 58 students.

The rug is purple in colour and is half way up the wall on the one wall of the room. The desk-tops are also purple. The swing out chairs are black.

The instructor stands behind a chest-high counter which is placed along the wall between the main entrance and the door behind the largest monitor. There is a half-wall connected to one end of this counter and behind it are a few stairs leading up to a little-used doorway. The instructor must stand to be seen behind the tall counter. Behind the tall counter, there is an Elmo visualizer, a 35.5 centimetre (14 inch) monitor, a slight shelf to put papers on, a Power PC computer hooked up to the Internet, a fire extinguisher mounted on the half-wall, and a garbage can on the floor. Also in this general area are two tables, two chairs and a podium.

Over the instructor and at the front of the room, light is provided by pot lighting. For the rest of the room, pot lighting and fluorescent lighting alternate as follows from the front to the back of the room: two pot lights at the front of the room, four fluorescent lights, six pot lights, seven fluorescent lights, three pot lights, four fluorescent lights, and two pot lights at the back corner of the classroom.

At the front of the room is one large monitor 170 centimetre (67 inch) with two cameras on top and one speaker on either side. The one camera at the front of the room swivels to be positioned at any particular student in the room. On the wall nearest this monitor is a clock. At the back corner of the room, there is another smaller monitor 88.8 centimetre (35 inch) facing the instructor and two more cameras. There are two other student monitors, also 88.8 centimetres (35 inches) each, suspended from the ceiling in the two corners adjacent to the students' desks .

Site B

The Site B distance education classroom is much smaller than the Site A classroom and is not expandable. It is a rectangular shape with the dimensions 7.3 by 12.2 meters (24 by 40 feet) and holds a maximum of 60 students. There are two doors along one of the longer walls but positioned at either end of the rectangular room. There is a white board stretching the length of the wall between the two doors. In approximately the middle of the room, there is a ceiling-suspended Electrohome Marquee 8000 projection television which projects an image on to a 253.8 by 253.8 centimetre (100 by 100 inch) screen at the front of the room. At the front centre of the room, but on a movable cart, is an overhead projector.

The long tables, which serve as students' desks, have white specks on a blue background as the desktop colour. There are five rows of these desks.

The first row, closest to where the instructor would stand, is actually two separate tables with a space between where the overhead projector is placed. One of these tables has five detached blue plastic chairs placed by it while the other table has seven. The next three long desks extend the length of the room and are on one-step risers. Each of these desks has about thirteen chairs. At the back of the room, there are two, two-person desks at either end of the room. The back wall is painted off-white with a blue railing along the middle. The other three walls are brick painted off-white. There are four separate off-white brick pillars also along the back wall. The ceiling has approximately 20 fluorescent lights each of which is covered in plastic, louver-type, cross-markings. The rug is a looped tweed of blue, pink and grey. Despite the equipment, this room is much more reminiscent of a typical classroom than the Site A room.

There are five, 88.8 centimetre (35 inch), ceiling-suspended monitors. Four of these face the students and one faces the instructor. Two are placed, one at either end, at the front of the classroom, almost directly over each doorway. Two more, also one at each end of the room, are lined up above the second desk (the first long desk).

There are two cameras placed front and centre and two at the back, off to one end of the room, near a pillar. The one camera at the front of the room swivels to be positioned at any particular student in the room. There are speakers on the wall placed one by each of the doorways. Under one speaker, there is a locked, roll open cupboard in which to store other equipment.

The instructor's counter is not as tall as the one at Site A but it has exactly the same equipment: a visualizer, Power PC computer, touch control screen and monitor as well as a counter on which books can be placed.

The Technology which links the Sites

The linkage between Sites A and B is Asynchronous Transfer Mode (ATM) using a 155 megabit fibre optic cable. A maximum of 30 frames per second or 45 million bits per second can be transmitted. The result is a high bandwidth which produces full-motion video with no lag time between what is said and seen by one person in one site and when it is heard and viewed by another in the other site.

Built into the top of these desks are square push buttons spaced approximately one per every two students. They are located nearest the opposite side of the desk from where the students would sit, thus their books should not accidentally hit one of these buttons. During class, the instructor can set the microphones and cameras to two separate modes - classroom mode or conference mode.

The classroom mode is where the student would have to push a button to inform the instructor that s/he has a question or a comment. An indicator light on the instructor's screen blinks to notify the instructor that a student wants to speak. The instructor then has the choice as to when to respond to the student. He may respond immediately or after he has finished speaking. In the event that several students wish to comment, their calls are lined up in the order they were received. When the instructor is ready to respond, he presses a button on his touch screen monitor and the camera automatically swings to the correct location in the room. The student's image fills the large screen and the microphone hanging from the ceiling above that student is automatically activated so that all sites can hear the student's remark. In classroom mode, the microphone is only activated when a button is pressed first.

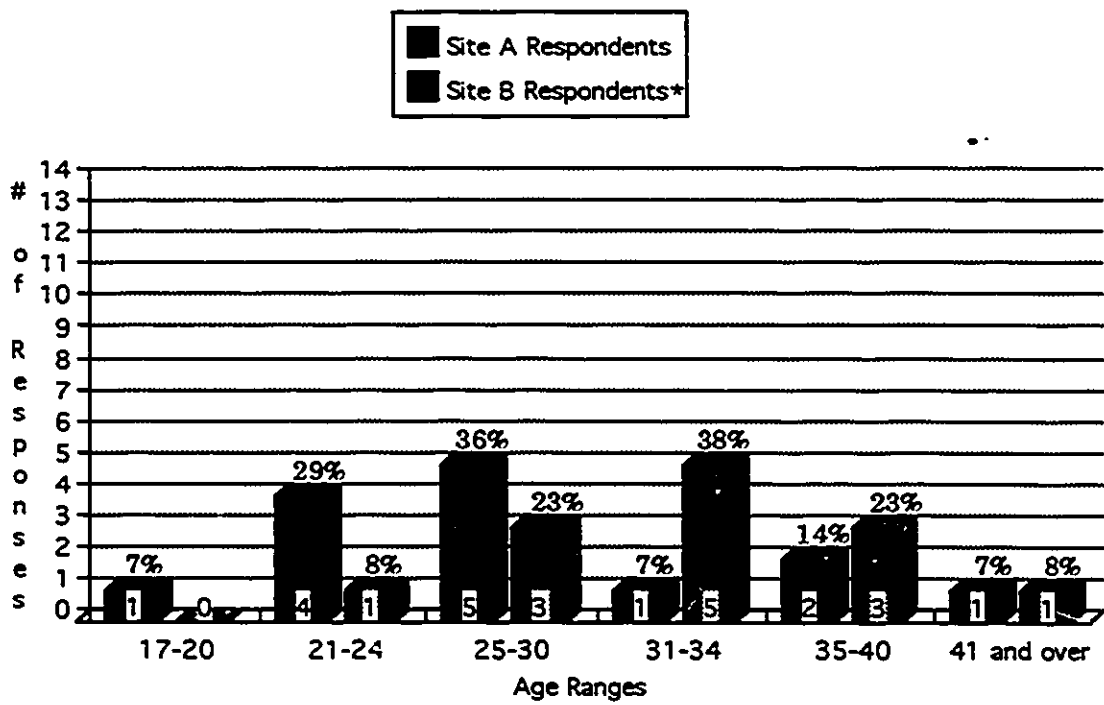
In conference mode, all the microphones are constantly activated and every little paper shuffle or whisper can be heard by all people in all sites. A student simply needs to speak to be heard. This setting is not recommended for large class sizes such as this one because the background noises can become distracting. For this course, the instructor tried both modes but utilized the classroom mode most frequently. However, he did not explain to the students the difference between the two modes nor when he was testing either one so the background noise was probably greater than it needed to be when the equipment was operating in the conference mode.

The equipment in both rooms is provided by various companies: the system response is supplied by Applied Electronics Limited; the audio processes are supplied by Toa company; the video equipment is a mixture of companies but primarily Leitch; and the control system is AMX. Also available in the room is an Elmo three chip visualizer, a Power PC connected at Site B to the Internet but not connected at Site A, and an Elmo slide to video projector. Also, both rooms have the ability to be connected to one another using Integrated Services Digital Network (ISDN) lines able to run at speeds of 112kps (kilo bits per second) up to 384kps. They currently have a GPT CODEC (coder-decoder) but this may be changed at a later date.

Sample

The final sample for this study consisted of one male instructor and 36 students split equally with 18 located at each of Sites A and B. The females substantially outnumbered the males in each site. Site A had two males and 16 females and Site B had one male and 17 females.

Figure 1 shows the age ranges of the students. Most of the students, in both sites, have ages which fall somewhere between 25 and 34 years. They



* n=13 because one respondent marked two categories and neither mark was counted.

Figure 1:
Age distribution of students in Sites A and B.

were adult students who, generally, were working full-time jobs while taking this night course. The Site B students were a cohort who were working through their entire program together, thus, they know one another quite well.

Although I did not ask his age, the instructor appeared older than the students. He had taught this course previously but was a practicing professional in another field and was not an accomplished teacher. He was new to teaching using this medium and had only been provided with a few hours of instruction on the use of the technology prior to the start of the course.

Program

This course is unique in terms of its content and the entire program is unique in terms of the qualifications it provides, thus, divulging any specific information would jeopardize the confidentiality of the institutions, students and the instructor involved. Therefore, this information is purposefully being withheld from the reader.

There were two course coordinators who appeared at occasional classes throughout the course. They assisted the instructor, primarily through e-mail, with any questions he had about the course. These coordinators administered a questionnaire to the students in both sites towards the end of the course. I did not see the results.

The Site B cohort had one of their students in the volunteer role as Program Coordinator. She distributed program information and handouts and acted as a liaison between the Site B students and the course coordinators.

There was also a full-time technician monitoring each class from another Site A room. Different people filled this role throughout the course. The Site A technician controlled everything to do with the distance education course. He connected the two sites at the start of the class, controlled the

lighting at both sites, and controlled the room temperatures at both sites. The technician only appeared briefly at the start of class to establish the initial link, at the end of class to disconnect the link, and when technological problems arose.

Consent

Instructor

Prior to the first class, I sent a facsimile of my proposed schedule and a copy of the consent form (see appendix C) along with an explanatory covering letter to the instructor. Later, a course coordinator assured me that I would be permitted to study this course and that the instructor would sign the necessary consent form at the start of the first class. This was what occurred.

Students

Student consent forms (see appendix B) were distributed during the first class to all the attending students in both sites. These forms had been couriered to the program coordinator for the distant site in advance of the first class. During the first class, I was given time to speak over the video-conferencing system. After introducing myself and the topic of study, I read the consent letter to the students and asked them to appropriately check off the boxes at the bottom of the page and sign and date the form. I also requested those students willing to consent to an interview to place their phone number in the blank provided. The students were asked to tear off the bottom portion of the form to submit to me and to keep the top portion in a safe place because it listed the contact phone numbers. I collected the Site A consent forms while a Site B student collected those forms for me to pick up at the second class.

Of the 18 students at Site A, the consent form results were as follows:

18 agreed to complete the questionnaire, nine agreed to be interviewed, and 16 agreed to allow observation. Of the 18 students at Site B, the consent form results were as follows: 18 agreed to complete the questionnaire, 10 agreed to be interviewed, and 14 agreed to allow observation. The actual results differ slightly from what was initially agreed due to scheduling problems and one student changing her mind once she was actually contacted for an interview.

In planning this study, there was concern that if even one student chose not to be observed, I would no longer have a location to conduct this case study since my presence could violate student rights. Therefore, in an attempt to eliminate this potential problem, the student consent letter (see appendix B) was meticulously drafted to address this issue. The specific wording used was (emphasis in original):

As a part of this research, you will be asked to: complete a questionnaire; allow my observation of **your part** in the video-conferenced class discussions, commentary and interactions; and you may be asked to participate in a brief interview. Should you choose not to participate in this research, be advised that I may observe and record (either written or taped) class proceedings, however, your specific involvement will not be used in the subsequent data analysis.

Thus, by having the the students sign this letter, regardless of whether they marked the “yes” or the “no” to “allowing observation”, they were agreeing to my presence in their video-conferenced course with my assurance that their specific remarks would not be used in the data analysis if they chose not to allow observation. In this way, this potential problem of not having a study site and the major ethical and methodological concerns of violating student rights were addressed.

Data Collection

Pilot Study

I had planned to attend the last two classes of two separate courses but both instructors had planned to end their respective courses one class earlier than the actual last day of classes. Therefore, I was only able to attend one class, the last class, of each course. The first course was observed on Friday, March 31 and the second course was observed on Tuesday, April 4. The purpose of the pilot study was to gain an understanding of video-conferencing in use and to have an opportunity to test-run the questionnaire.

The same Site A and Site B institutions as used in the actual case study each have two distance education classrooms and these two classrooms house totally different equipment. The equipment in use for the pilot courses was PictureTel which uses compressed video-conferencing via Integrated Services Digital Network (ISDN) to provide full audio and video interaction. Using this technology, there was a noticeable lag time between the two sites involved in each class. Also, the instructors controlled the camera angles and there were no buttons for students to press prior to speaking. Both of these courses ended up having very little in common with the course which was the focus of this case study.

The first course which was observed consisted of a link between Site A and another site in another province, Site C. I was viewing from Site A. There happened to be a great many technical problems over the course of the semester and although this was the last class, it was only the fifth time using the video-conference link. The picture was very blurry and by the end of the hour-long class, my head was aching from watching the screen. The remote camera was not working, thus, the Site C students had to control the view seen

by the Site A students. The instructor had no camera control.

With regard to the delay, I noticed that the instructor's jokes lacked enjoyment because of the lag time between when the joke was said and when the laughter would occur. I also noticed that the local students did not even snicker, whereas the distant students laughed at these jokes.

Throughout this entire class, the Site A students did not say a single word. The instructor lectured and occasionally asked questions of the distant students and it was always the same four or so people who responded. The one local student did not even have a pen and paper available; the other student had these tools but never used them.

A pilot questionnaire was given to the two students locally and was sent to the approximately nine or ten students at the other site but the instructor would not allow class time for its completion. He provided my mailing address and suggested the students send it to me. I had not intended for this to happen and thus, I had not included self-addressed stamped envelopes. None of these questionnaires was returned.

The second course which was observed was a link between the PictureTel classrooms of Site A and Site B but was offered from the Site B institution and was viewed from there. It was a three hour night class with a class size of 12, 10 at Site B and two at Site A. Unlike the first class, the picture was clear and facial expressions could readily be seen.

This class was wonderfully interactive with students from both sites speaking as if they were in the same room. The students seemed to get along well; they joked and laughed together. The instructor had obviously promoted and encouraged such forthrightness and the students were listening and actively engaged throughout the class period. Even during the break, the students visited together and with the instructor like old friends. It was a

delightful sight to behold!

All of the students completed the questionnaire in the class time provided by the instructor. At the suggestion of these students, some changes were made to the questionnaire.

Prior to each of these classes, I had interviewed the respective instructors and had them sign the consent form (see appendix C). They had briefed me on what to expect. The second of the two instructors was the only one who permitted me to tape record the interview. Due to the fact that this was the last class in both instances, the students were in a rush to leave and no student interviews could be conducted.

Observation

The data collection methods used for the actual case study included observation of the video-conferenced classes from both Site A and Site B. By using a laptop computer (PowerBook), I was able to take type-written field notes to be printed and analyzed later. My observations included elements of: selection, whereby one looks for something in particular by editing or filtering other events; recording and encoding, whereby the data were gathered for analysis; and a set of behaviours, that is, watching several behaviours in their original context (Palys, 1992). This study selected only interactions between the student and the instructor that contributed to the establishment of a friendly, secure relationship, or, in other words, a rapport. The set of behaviours were viewed in the interactions between the instructor and the student primarily in class, but also after class or during the break. At either one location or the other, during the final data collection, I attended every class of the course.

The observational continuum ranges from “complete participant” to “complete observer” (Bogdan & Biklen, 1982; Palys, 1992). I attempted to

take the role of a “participant observer”, which means that the emphasis of my role is placed upon the element of observation (Palys, 1992). I was forthright about my research motives while also mixing in with the activity being observed to the extent this was welcomed by the instructor and the students. I found my interaction with the students to be greatest in the absence of the instructor; that is, particularly at the Site B location, or at the Site A location while the instructor was at Site B.

The types of interaction and discussion I focused upon were: observation of instructional behaviour such as personal attention and questioning, using student names, feedback, techniques for inclusion of all students; observations of student behaviour such as joking and talking personally with the instructor, ability or ease of asking questions in and out of class, ease with which they engaged in discussion in class; and, discussions with the instructor of facsimile transmissions and electronic mail correspondence between the instructor and students. I was hoping that the instructor would be willing to share such student-teacher interactions with me since unscheduled, spontaneous interactions, such as phone calls, might be crucial to this study; however, the amount of this type of interaction was minimal and thus there was not a great deal to share.

To maintain fairness and consistency in my observations, I alternated between the two sites according to the schedule in Table 1. There were a total of 12 classes initially with one class on June 6 being cancelled. I attended six classes at Site A and five classes at Site B. As is evident from Table 1, I alternated between the two sites every Tuesday (odd numbered classes one, three, five, seven etc. with the exception of the cancelled class) and also between the two sites every Thursday (even numbered classes two, four, six, eight etc.). With the exception of Thursday, June 8, the instructor regularly

Table 1
Class Visitation Schedule

Class Date	Class #	Site
Tuesday, May 16	1	A
Thursday, May 18	2	B
Tuesday, May 23	3	B
Thursday, May 25	4	A
Tuesday, May 30	5	A
Thursday, June 1	6	B*
Tuesday, June 6	7	class cancelled
Thursday, June 8	8	A
Tuesday, June 13	9	A
Thursday, June 15	10	B
Tuesday, June 20	11	B
Thursday, June 22	12	A

* Due to illness, researcher present only half the class

taught from Site A. On June 8, the instructor taught from Site B and visited those students for the first and only time.

Questionnaire

There were many drafts in the design of the questionnaire. The final questionnaire can be found in appendix A but it had been photocopied onto lilac coloured paper. Also, the words "Site A" and "Site B" now replace the post-secondary institution or city names so as to protect the confidentiality of those involved.

Administration

During class number six (June 1), students in both sites were given the questionnaire to complete (see appendix A). I administered and collected them in Site B and the instructor did so in Site A. However, the events of this class as well as the previous one must be stated since they may have influenced the questionnaire results.

During the fifth class, there were technical difficulties. For the first 25 minutes of class, the technicians could not establish the link between the two sites. There was no audio nor any video. The instructor just visited casually with the local Site A students. At approximately 6:25 p.m., an imperfect link was established. The Site B students could hear and see Site A but Site A could neither hear nor see Site B. Therefore, the Site B students could not ask questions. This situation persisted for the remainder of this class. Later, I was told that by the end of this fifth class, there were only about five students left at Site B. The remainder had left in frustration.

After class, I spoke with the instructor and asked him if he would provide me with some class time next class to administer my questionnaire and if he would be willing to distribute and collect it while I did the same in Site B. He readily agreed.

Prior to the start of the sixth class, I spoke, using the system, from Site B with the instructor in Site A. I reminded him that I wanted to administer the questionnaire and he said I would be first. However, he started to lecture momentarily when he stopped and asked me if I wanted to hand out the questionnaires now. I said, "yes" and I watched him hand over the bundle to the Site A students while I handed them out in Site B. However, this is where the trouble began. I was not given any time to speak and the students were not given any time to complete the questionnaire. The instructor spoke while the questionnaire was being given out and said, "they can complete this while I talk." I was not given any class time.

In Site B, nobody completed the questionnaire initially. They were busily writing notes while the instructor lectured. At 6:30 p.m., the audio was lost. It was regained momentarily and then lost again. One Site B student was gesturing rapidly with her arms to indicate to the instructor that the sound was no longer present. Ten minutes later there was still no sound and the instructor called for a 20 minute break. Shortly into the break, the video was lost as well. The Site B students used this time to complete the questionnaire and it was obvious they were extremely frustrated. This was probably a very bad day to have administered the questionnaire due to the technical problems of the fifth class and now the sixth class as well. This added to the technical problems of the previous class would likely have affected the responses on the questionnaire.

Reliability and Validity

According to Borg and Gall (1983) small samples are often more appropriate than large samples when conducting educational research. One example given is when in-depth interviews are being utilized as was the case for this study. This study sought to probe deeply into the opinions of the

instructor and students involved and, in this way, it should provide greater knowledge than could merely collecting shallow information on a larger sample.

Several strategies were used to maximize questionnaire validity. The questionnaire was constructed with assistance from the research literature, faculty members and fellow graduate and undergraduate students. It was pilot tested using a smaller sample of 12 other graduate level students enrolled in a course offered through distance education. The wording of some questions was improved.

“Construct validity is the extent to which a particular test can be shown to measure a hypothetical construct” (Borg & Gall, 1983, p. 280). Rapport is considered a hypothetical construct because it cannot be directly observed. Instead it is inferred based upon its observable effects on behaviour. It is these specific observable behaviours and actions which were the target of the questionnaire design. The survey instrument comprised 25 statements (see appendix A) which are meant to determine whether or not a rapport was perceived and established between the instructor and the students of this course.

Analysis

The goal of the survey analysis was to lead to conclusions regarding students' perceptions with regard to the establishment of an effective rapport with the instructor. The questionnaire responses were analyzed using frequency histograms which compared site responses for each question. To assist the reader in making data comparisons, the top of each bar in the figures states the percentage of responses for that category in that site. Also, responses were compared with interview and observational data to allow correlations to be drawn.

Interviews

The design of the interview questions (see appendix D) was completed in conjunction with the questionnaire statements. It was not pilot tested.

Administration

All of the student interviews were conducted in person by the researcher over a three week period starting on June 1 (class number six) and ending on June 22 (class number 12). The students were contacted in advance by telephone and a time and meeting place was arranged. The student interview questions were very structured and the framework found in appendix D was adhered to strictly.

With the exception of the final interview, the instructor's interviews were very short and unstructured and were based upon the proceedings of the class. These latter interviews consisted of open-ended, grand tour questions based upon researcher's observations. The instructor was interviewed after all but one class that he and I were in the same location, and one additional time at his regular place of employment approximately one month after the last class for a total of five times. This concluding interview was much longer and more in-depth than the others and was conducted after the final grades had been calculated and submitted.

I travelled to both Site A and Site B at various times during the study to conduct these interviews and observe behaviours from alternate vantage points. Each interview participant agreed to have the meeting tape recorded and transcripts of the interview were typed by a professional transcribing secretary using a court-approved format.

Analysis

If a rapport had been developed, interviews with the instructor and the students should have determined which techniques were valuable in this

construction. If a rapport had not been developed, interviews should have helped determine why this has been the case and what might need to change to build a strong teacher-student rapport.

Professional Etiquette

All of the previously mentioned data collection techniques were administered in a courteous and non-judgmental manner. Confidentiality was and continues to be maintained and privacy is ensured. Pseudonyms are used for those students who chose to participate in this case study. There was no pressure to participate and anyone was free to withdraw from the study at any time without prejudice. Those students who choose not to participate in the class observation component of the data collection, even though their signature on the consent form permitted me to observe this course, are assured that their comments and discussion in the course will be excluded from this case study. Participants were able and even encouraged to ask questions about the study and were given replies which were satisfactory to them.

To protect the confidentiality of the participants, neither the course name, number, program nor its locations will be revealed. To reiterate, the institution from which the course was offered and where the instructor spent the majority of the teaching time will be referred to as Site A. The location to which the course was being delivered and which was generally considered as the remote institution will be referred to as Site B.

Prior to reading the Results chapter, a final cautionary note to the reader must be mentioned. I have an educational background and a strong personal educational philosophy that the instructor is responsible for ensuring effective teaching and learning. These sources of bias may have influenced, both knowingly and unknowingly, the conclusions of this study.

CHAPTER IV RESULTS

Analysis of the Data

Introduction

“How do interactive video-conferencing instructors and students establish and perceive an effective rapport in both the near and the remote sites of a video-conferenced classroom?” Using primarily qualitative methods, I have attempted to respond to this multi-faceted question.

This chapter is organized into four main headings: student opinions, instructor’s viewpoint, researcher observations and major findings. In the first three sections, the results of the data collection from the students, instructor and my observations, respectively, are stated. However, since there is overlap in the results attained from these various sources, the major findings section serves to summarize the key issues from the data collection.

Student Opinions

The Site A and Site B students’ opinions of the instructor, the course and the video-conferencing were compared. These student beliefs were gathered by administering questionnaires to 28 students (14 in each site), by interviewing 17 students (eight in Site A and nine in Site B), and by observing six classes from Site A and five classes from Site B.

Instructor

In the interviews, the three main adjectives used by all of the students to describe the instructor were: approachable, humourous, and knowledgeable. To follow are some Site A quotes which further exemplify this point [emphasis added].

Carol: The instructor is — I find him excellent, actually, he's very entertaining to begin with, and he's very **knowledgeable**, and actually what I like about him is the way that he — he relates his — even some of his cases into the course, I think that's excellent.

Peter: I really like the instructor, like I — as an instructor I find him interesting and engaging to listen to and very, very **approachable** and — and easy to ask questions to.

Leona: I find it's fairly informative. He seems very **knowledgeable** in the information and I find he's able to keep our interest as well, like it's — at times it can be a little dry, but I think that's just the topic itself.

The Site B students generally concur. One quote summarizes their responses.

Ron: He's **knowledgeable**, he gives — he presents the material in a straight-forward, simple matter, he offers a lot of examples, which is very helpful, he's personable and he has a **sense of humour**, as I can see through the T.V., ...
... but in terms of his presentation, it was good, he's flexible, he's able to answer everyone's questions, he doesn't rush through it, he displays patience — so I think he's doing a good job.

However, not all students find the instructor to be interesting. A Site B student's comments are to follow:

Maggie: I — I think ... some of the topics he does are kind of boring to me, and it would have worked better I think had he covered more or put more in our exams about what he was talking about. That way it would be more pertinent 'cause now like I just sort of listen to the things that pertain directly to me, and because he's not in the room it's easy to ignore the rest of it.

Despite the previous quotes which generally compliment the instructor, when these efforts are tied in with his use of the video-conferencing equipment,

the picture changes dramatically. One Site B student sums it up very well.

Sherry: With regards to the instructor, he's very competent, he obviously knows his material, he's not very familiar with this process in regards to how to communicate the information back and forth, and, I mean, he's got video link and he's got audio link and because he's used to teaching it just as a — as an instructor to a class. He's not aware of all the technical stuff so there's people that aren't getting their say in, ...

... but just because he's not all that familiar with the — what he has to do with the panel — little things, and it's just I think a matter of him becoming familiar with it, standing too far away so that you can't hear him, not repeating the questions when somebody asks, if he doesn't hit the one in [Site A] he hears it but he forgets that the rest of the group — you know, the rest of the group doesn't, so that makes it very difficult and a bit frustrating.

...But, other than that — I mean he really knows his material and he certainly seems to be open to discussion at this point. We haven't gotten into anything where we're discussing things back and forth really so —

The questionnaire responses with regard to the respondents' opinions of the instructor clearly demonstrate the instructor's ability to: answer questions effectively; show concern for the students' needs; encourage students to be responsible learners; attempt interaction with all the students; emphasize relevant in-class dialogue; encourage student involvement in the course; motivate students to perform to the best of their abilities; and to simply be friendly. However, even though according to the questionnaire responses, the students perceive the instructor to have all of these qualities in this course, I noticed that he conducts most of his classes by lecturing and is unsuccessful at some of the other more essential elements necessary to develop a rapport. For example, he does not attempt to learn students' names nor match them with their respective locations. Also, while the Site A students feel that the relationship between the instructor and students is merely "average", the Site

B students feel that this relationship “needs improvement” (see figure 13, p. 120). Clearly, only a minimal rapport has been established between the instructor and students of this course.

Answering Questions. When the students were asked if the instructor answers questions in a manner which could be understood, the questionnaire results were almost entirely in the “agree” and “strongly agree” categories (see figure 2) and the interview responses further exemplified this point. However, some of the Site B students added the video-conferencing element to their responses.

The strong show of responses in the “strongly agree” and “agree” categories in figure 2 may be related to the instructor’s sense of humour and easy-going style which acted to create a certain level of comfort in the classroom. This, in turn, relayed an ease to the manner in which the instructor responded to questions. Peter and Kim, both Site A students, summarize.

Loya: ... What do you think the instructor does to make the students in class feel comfortable, if anything?

Peter: I think just the way he — he presents himself to the class and the material I think — I think he comes across as having a — a pretty easy-going lecturing style, and — and I think he has shown a lot — a lot of patience with the — not only with the students who are non-[practicing professionals] questions, but also with the technology which still seems to have a few bugs in it.

Kim: Well, he's given us enough avenues to contact him, and made us feel that we can talk to him after class or use the e-mail or call him at work, so that we feel that you could approach him. If you ask him a question he always gives you some idea of how to go look it up or where to start if he doesn't actually tell you what case you're talking about.

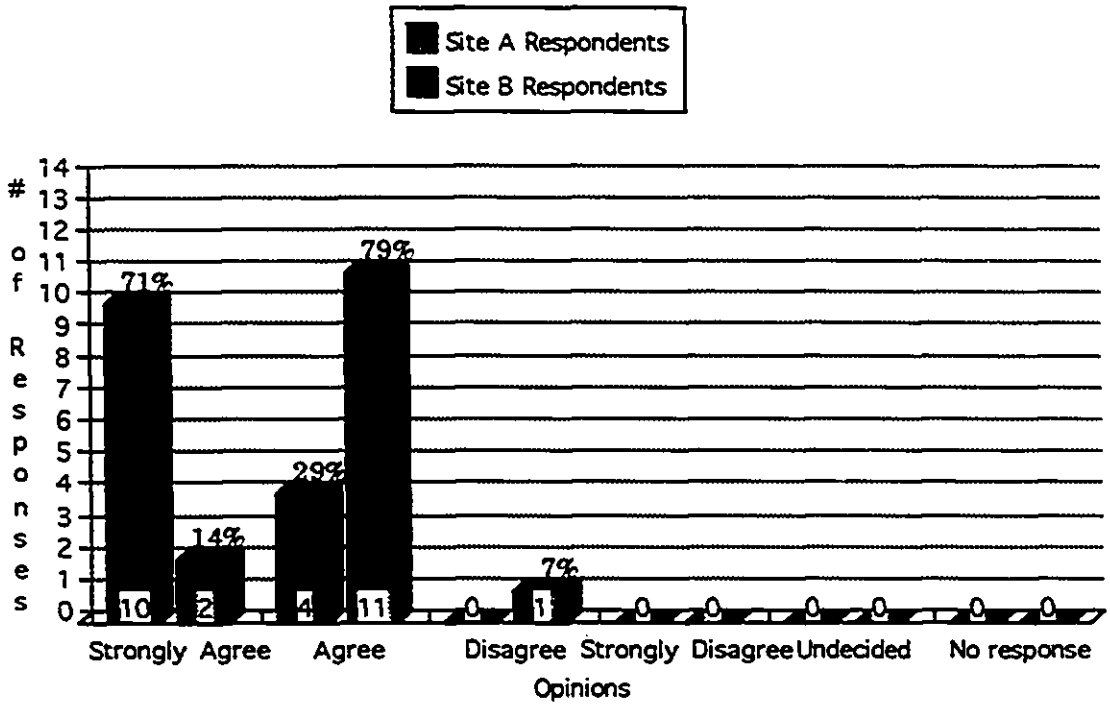


Figure 2:
Opinions of respondents as to whether
the instructor answers questions in a manner
that can be understood.

Loya: Right.

Kim: So it's good in that way I think. He tells jokes, he smiles at people, he makes eye contact and all that kind of stuff.

Two site B students, Maggie and Tammy, respond in a manner similar to the Site A students.

Maggie: He's really friendly in the way he approaches you, he leaves time for questions, he never rushes you through an answer or kind of brushes off your questions, he answers them all no matter how silly they may be or whatever, and he goes over things to make sure you understand them.

... And then he just — I mean he adds humour and stuff into it to kind of keep it light so it doesn't — you don't feel so constrained or whatever but, yeah.

Tammy: Well, he brings his own personal experiences into the picture, he talks about his cases or his involvement, he gives real life examples, makes little jokes aside, talks about his personal life.

Two other Site B students concur, initially, with the previous responses; however, they add the video-conferencing dimension and state how it acts to reduce the comfort level established by the instructor. These remarks are more reminiscent of the general consensus of the Site B students.

Christine: Well, he's always really good at answering questions when people do ask, like he always responds right away and — and things and I think that's really good. But I mean — I mean he doesn't know us by name and things like that, so to be perfectly honest, if I'm not in class, he doesn't know.

Ron: Well, I think his sense of humour would be — would primarily be what one — one mode of doing that, he makes people feel comfortable in the way that he receives all the questions very well. He's — you know, he's — it's not as if he's defensive or — or antagonistic or sarcastic or any of that, certainly

not, and so again, I think it's his nature and his personality that makes it — makes people feel really at ease to talk to him.

... He doesn't — he doesn't set about him an — an aura of I'm a — I'm a [practicing professional] and — and I'm — you know, hard to approach or whatever —

... — the case may be.

... But again, I'm basing that on when he was more so in [Site B]. I think the — the mode of transmission through the video loses a lot.

The point is that while both the Site A students on location with the instructor and the Site B students at a distance from the instructor are comfortable and believe the instructor responds to questions in an appropriate manner, the latter group state that the video-conferencing technology can act as an obstruction to the comfort level that the instructor was able to forge.

Concern for Student Needs. Similarly, when students were asked if the instructor demonstrates concern for their needs, the “agree” and “strongly agree” categories were the predominant responses with a slight surge in the “undecided” category (see figure 3).

Responsible for own Learning. As well, figure 4 indicates that the majority of students in both sites feel that the instructor encourages them to be responsible for their own learning. In Site A, six each responded “strongly agree” and “agree” to this question while two and ten, respectively, of Site B responded “strongly agree” and “agree”.

Attempting Interaction. Figure 5 shows that the students generally feel the instructor is attempting to interact with all of them. However, the four students registering a “disagree” or “strongly disagree” response to this were in Site B where the instructor was not present for most of the classes. This latter point will become more evident later as the interview responses, particularly regarding the technological problems, are taken into consideration.

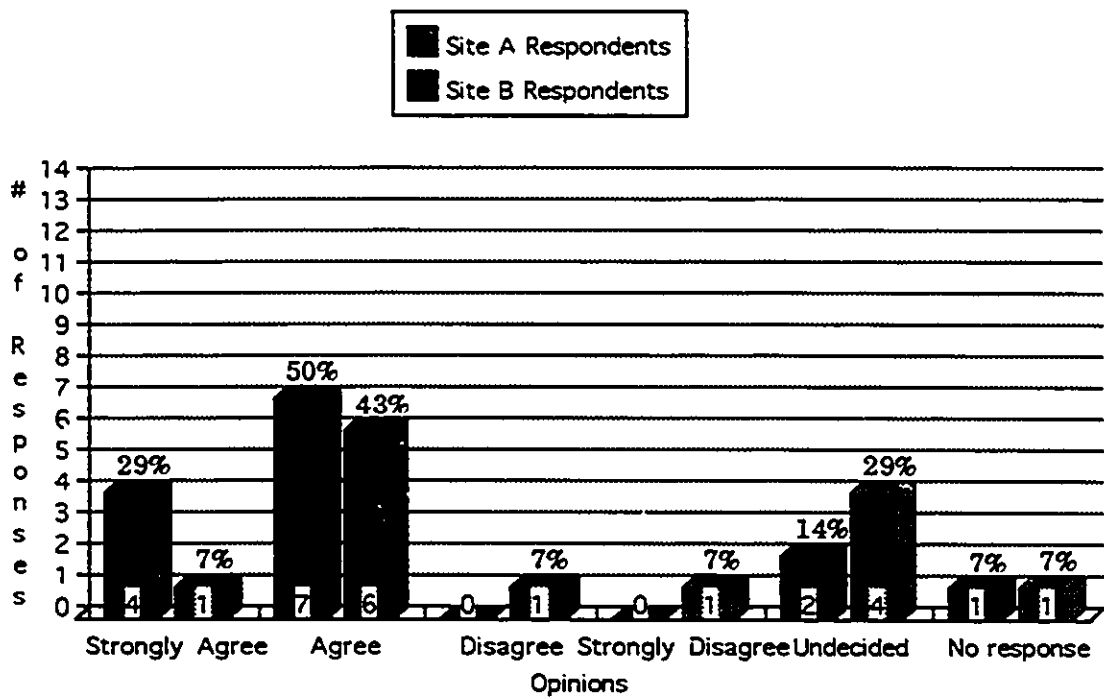


Figure 3:
 Opinions of respondents as to whether
 the instructor demonstrates concern for
 students' needs.

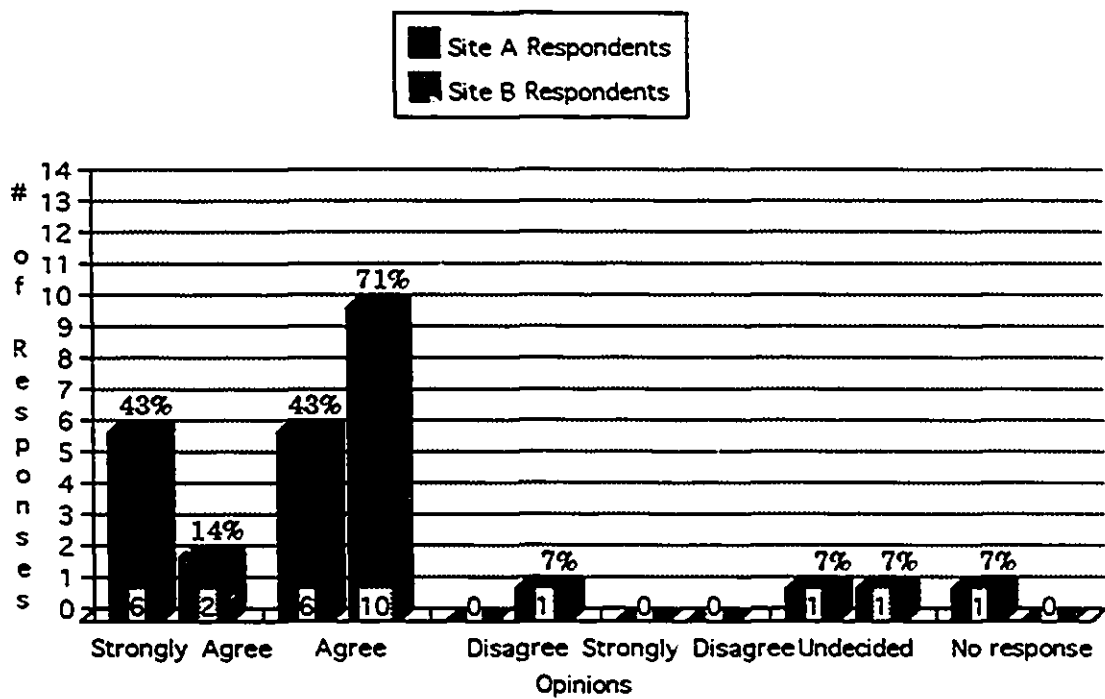


Figure 4:
Opinions of respondents as to whether
the instructor encourages students to be responsible
for their own learning.

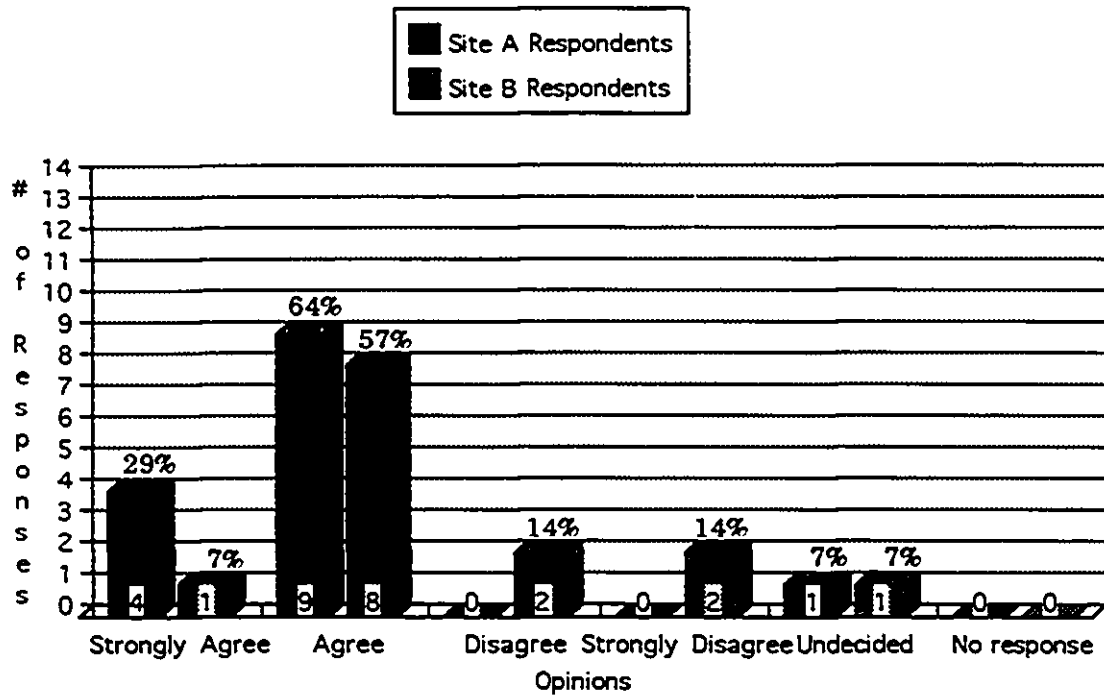


Figure 5:
**Opinions of respondents as to whether
 the instructor makes an effort to
 interact with all the students.**

As mentioned briefly in the Methods chapter, the technological problems which compounded the administration of the questionnaire may have impacted on the results attained. Therefore, those students, noticeably from Site B, who responded “disagree”, “strongly disagree” in figure 5 were likely frustrated with the fact that they could neither be seen nor heard by anyone in Site A for several hours over two class periods. With this definite lapse in the technology, my interpretation is that the distant students may feel that the instructor was not trying to interact with them since he opted to continue the class even though the Site B students could see and hear the instructor but the instructor could neither see nor hear the Site B students. Since the Site B students could still interact with the instructor, this technological problem did not affect them directly. This might explain their questionnaire replies. Some Site B student interview responses, which I have interpreted to indicate their frustration levels, are to follow.

Ann: It was pretty — pretty good, I think it was — been kind of interesting. It wasn't so great the days it didn't work — the couple of days it wouldn't work, so I have to admit I left early that day 'cause I was kind of frustrated.
... So — so I just went home, I had a headache too—
... — it was a good excuse to leave.
... 'Cause you feel like if he can't really see you then—

Loya: Or hear you —

Ann: Or hear you it's hard to stick around.

Loya: All right, what are your impressions of this video-conference course with regard to the video-conferencing element?

Christine: Well, I don't like it. If the machine isn't work — like if there's technology breakdown, you've had it.

... And that's happened to us a couple of times and I've gotten frustrated so I've left.
... So that — that's a bad part, 'cause if it's not working you're kinda out of luck.

Emphasizes Relevant In-class Dialogue. At first glance, in figure 6, the instructor is overwhelmingly perceived to emphasize relevant, in-class dialogue. Five Site A students responded with “strongly agree” and eight with “agree” while no Site B students with “strongly agree” and nine with “agree”. As well in Site B, there were two respondents in the “disagree” category and one each in the categories “strongly disagree” and “undecided”, and also there was one student who chose not to respond to the question.

Although, according to figure 6, the Site A students predominantly believe that the instructor emphasizes relevant, in-class dialogue, the Site B student responses are not so clear. In fact, a total of five responded either, “disagree”, “strongly disagree”, “undecided”, or did not respond to the question. Gloria, from Site A, states her opinion of the in-class dialogue.

Gloria: ... I also find that a lot of his students are contributing things that are way, way off topic, and I find that frustrating in that I want to stick to the course material. It's a short course and I would rather people be a little more policed in that area.

Marsha, from Site B, believes the instructor tries to engage the students in discussions but is generally unsuccessful.

Marsha: ... I think he tries to promote group discussions, but I was feeling in the first couple of classes there was no group discussions going on because I think it's a whole new thing between [Site A] and [Site B] and even [the audio-conferenced site] and there was no — I think he was kind of grasping at — at straws to kind of get the class — the class going but nobody was doing any — nobody was talking.

... He tries to promote discussions, and the original intent I think was to him — like to lecture a half a class and then him for discussions, so he does that and — you know, I think he wants us to ask questions but nobody is really.

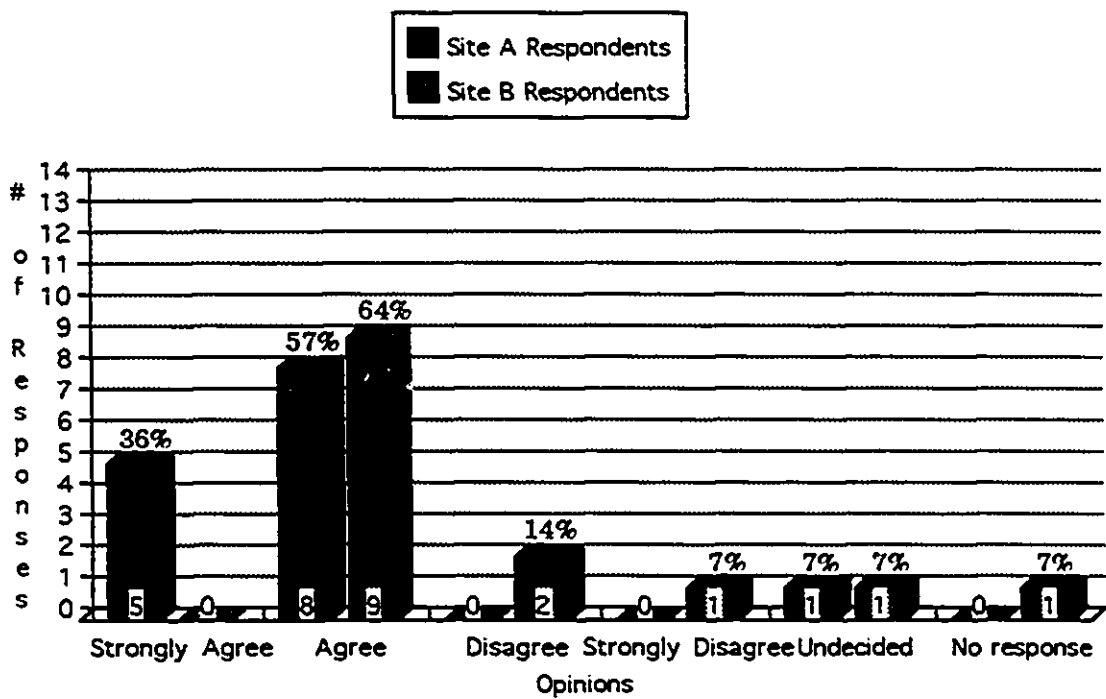


Figure 6:
 Opinions of respondents as to whether
 the instructor emphasizes relevant,
 in-class dialogue.

... It seems to be — you know, people in [Site A] are asking questions because — I think maybe it's 'cause they're right there and —
... — it seems more natural.

Encouraging Student Involvement. The questionnaire results indicate that the students perceived the instructor to be reasonably successful at encouraging student involvement in the course (see figure 7) with a few undecided students at each site. A Site B student commented specifically on the issue of course involvement.

Tammy: ... I think he makes every effort to involve us here on our end. I don't know if [the audio-conferenced site] has that same opportunity, but I know that he — he does try and involve us as much as possible.

Motivation. Additionally, the students in both sites are motivated to do their best work in this course (see figure 8). However, after having conducted several interviews, I find this may be less related to the instructor and more related to the fact that this course was a requirement for this degree program. Even the instructor was unaware that he was teaching a core course until I provided him with this information. He seemed surprised.

Loya: What's the prerequisite for this course?

Instructor: I don't know.

Loya: Oh, not even so many courses or anything?

Instructor: Maybe, I'm not aware of that.

Loya: Okay.

Instructor: Most of the students are third or fourth year ...
... This is a combined ... course ...

Loya: Well, the people in [Site B] told me this is a core course required for their Bachelors Degree in ...

Instructor: Oh, really.

Loya: And they said this is required, they have to take it ...

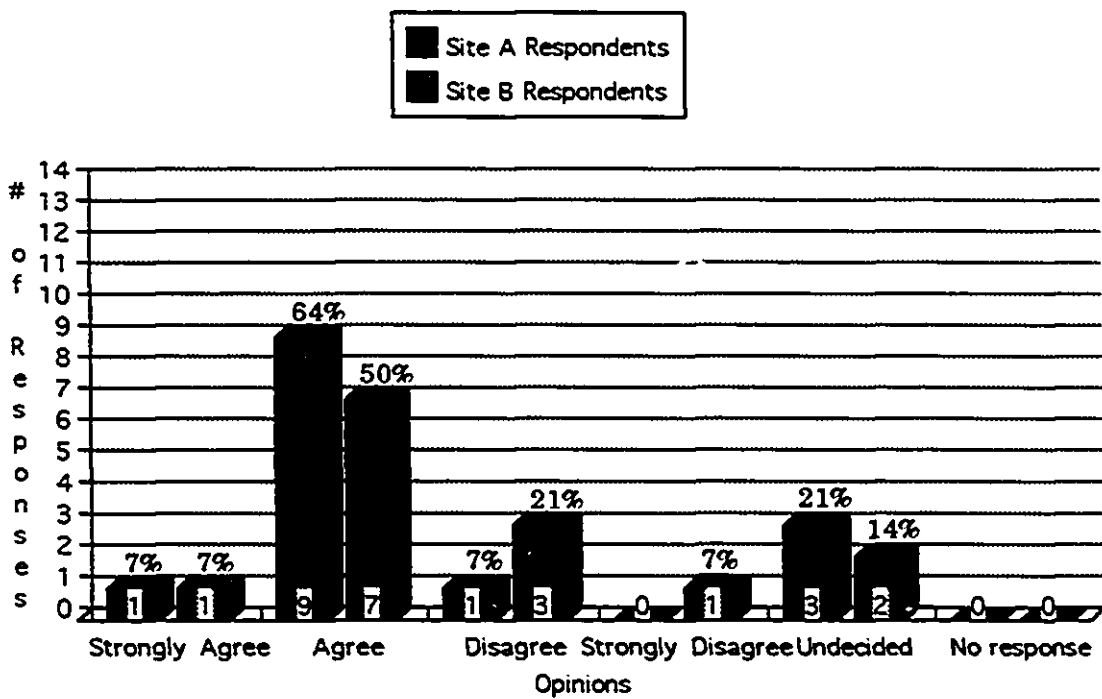


Figure 7:
Opinions of respondents as to whether the instructor encourages student involvement and input in the course.

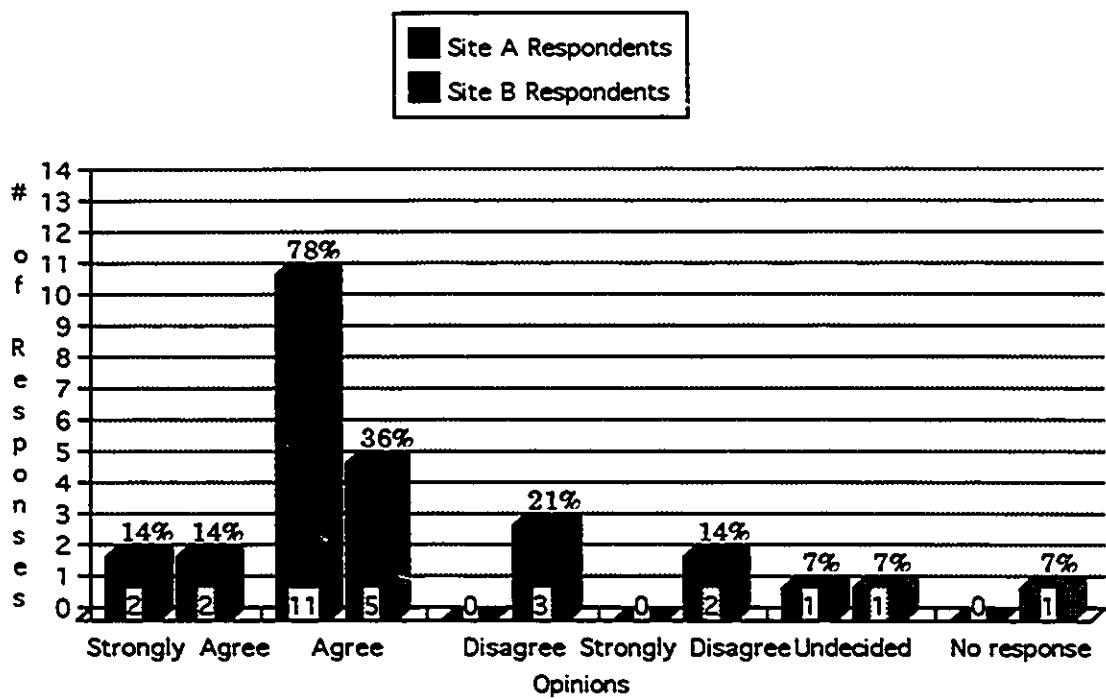


Figure 8:
 Opinions of respondents as to whether
 students are motivated in this course to do their
 best work.

Instructor: No one told me that, that is scary for instructors, if this is a core course that students have to take I mean I always thought this was an —

Loya: An option.

Instructor: — on the calendar for interest sake.

Loya: They told me ... that this is core. This is required.

Instructor: Oh.

Although this course is a degree requirement for most of those enrolled, there were a few students who commented that they would have taken it anyway due to their interest in the subject matter and there were also others for whom it was an option since they were not enrolled in this particular degree program. No students remarked that the instructor was the main reason for taking this course. Thus, it is difficult to ascertain how much influence the instructor's demeanour and style had on motivating the students to perform to the best of their abilities.

Friendly Relationship. In figure 9, the Site A students feel their relationship with the instructor to be friendly. However, Site B students are more divided on this issue. "Strongly agree" and "agree" were the two main categories of choice for the Site A students, whereas, there were nearly as many Site B students who chose the "undecided" category as chose the "agree" category. The interviews also reflect this attitude since no students, in either site, even mentioned nor commented that their relationship with the instructor was friendly.

Thus, even though it has been shown that the students believe that the instructor demonstrates some of the elements which constitute a good instructor-student rapport, and which are key to effective teaching and learning, these students also indicate in their responses that some of the other

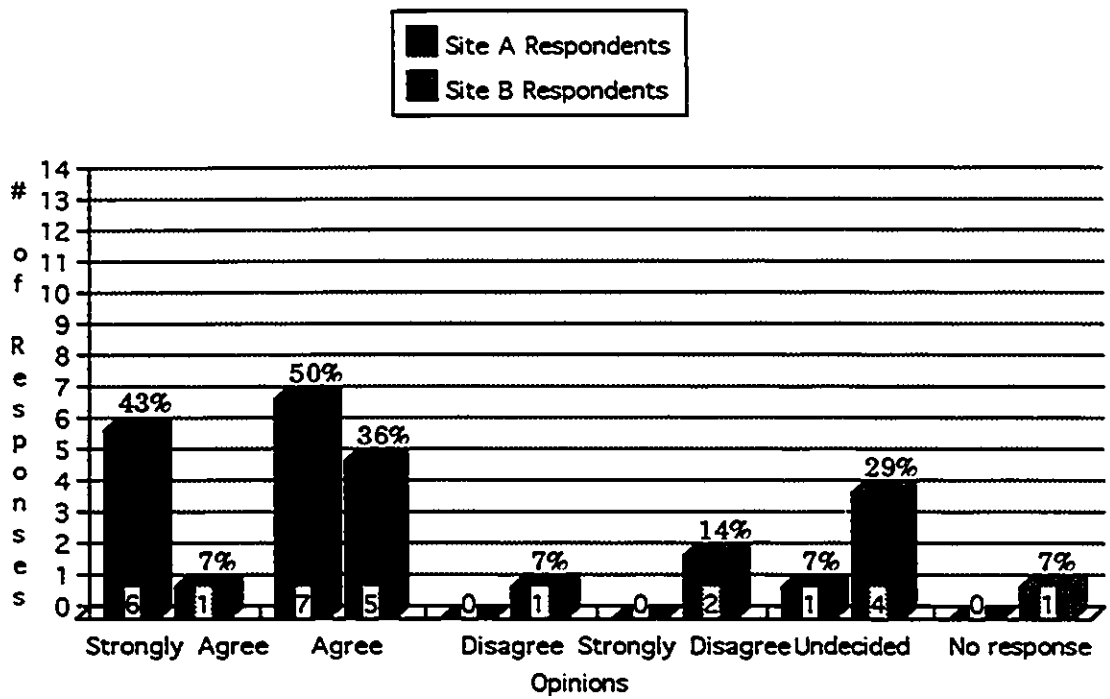


Figure 9:
Opinions of respondents as to whether the student relationship to the instructor is friendly.

important rapport elements are missing in this instructor's repertoire for this course. For instance, as will be indicated in the next section, he does not know the students' names; the students are unsure of the ease with which they could contact him outside of class time; and, there are mixed viewpoints as to the comfort levels of the students with regard to making comments or asking questions in class. The most decisive point, as shown in figure 13, p. 120, is that while Site A students who were located in the same room as the instructor most of the time feel the instructor-student relationship to be "average", the Site B students who are located at a distance from the instructor perceive the same relationship to be "needing improvement".

Lack of Name Knowledge. Both sites of students concur that the instructor does not know their names (see figure 10). There were absolutely no responses in the "strongly agree", "agree" or even the "undecided" categories for this question. The answer was very clear to all who responded. One person chose not to respond. Likewise, the student and the instructor interview responses indicate the same point. Here are some Site B student comments when asked, "Do you think the instructor knows you by name?".

Sandra: He doesn't know us from a hole in the ground!

Sherry: No, he hasn't got a clue.

Marsha: No.
... He know — I don't think he has any idea who I am — he knows that there's a [Marsha] in the class with an ID number, but he doesn't know me.

Christine: No.
... Not at all — well, because he's never addressed anybody by name other than [Julie] who he knows

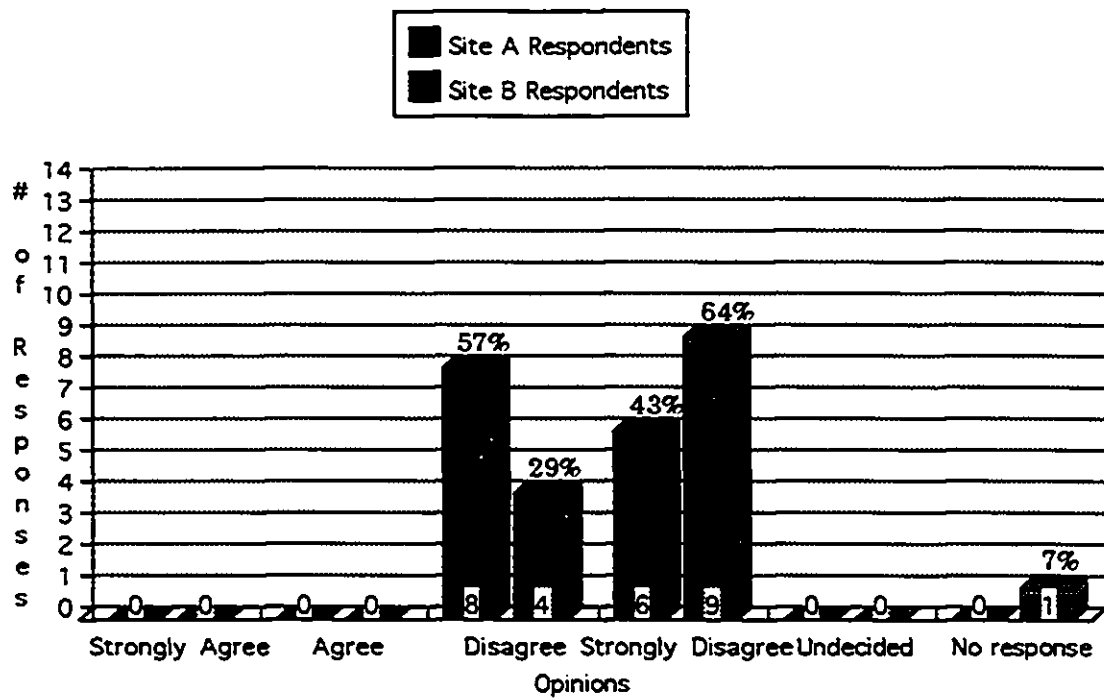


Figure 10:
**Opinions of respondents as to whether
 the instructor calls them by name.**

through setting up the program —
...— but I don't think he knows anybody else and
if he does, he doesn't refer to them by name...

Generally, the students from Site A responded similarly but with less incisive language.

Lisa: No. When we were selecting our group projects, he had to ask everyone who — what their name was.
... So I don't think he does.

A critical component of the establishment of rapport is not only the instructor's efforts but also the students' efforts. In the case of this lack of name knowledge on the part of the instructor, the students sanctioned, perpetuated and even expected this occurrence. Except for a couple of interviewees, the instructor's lack of knowledge of student names was not seen as detrimental. In this way and regardless of site location, the students contributed to the lack of rapport between them and the instructor.

Carol: That's — I think that's pretty hard for him to know by name though only because we — for one thing, I mean, this is a [post-secondary institution] and they don't take attendance per se, and we don't wear name badges, so —

Loya: Do you think you should wear a name badge or something or —

Carol: I don't think so.

Loya: No.

Carol: I mean it's up to — and we're all adults in this situation and it's up to us — I feel it's up to us to make ourselves known to him if we have a problem. Maybe he — he does know me now maybe because of the grouping that we're going into into the group sessions, and he may know that way, but to me it's not a big — it's not a major or big issue.

Lynn: No.
... I don't think it matters, and I just don't think in a 6 week course there's time for that much interaction.

Peter: No, it's difficult to in such a short period of time and with so many students.

Gloria: No.
... 'Cause I've never gone up and said who I am.

Loya: Okay, so does that matter to you or not?

Gloria: No, I'm quite used to that, 12 years of instructors not knowing who I am so that's fine.

Ann: Probably not, I don't think I'm on the class list actually.
... So I don't think so, no.

Loya: No, does that bother you or does it matter?

Ann: No, I've gone through four years' [post-secondary education] and I've never had a name, so no, it doesn't bother me at all.

From the previous quotes, it is evident that generally the students accept the fact that post-secondary instructors do not often know their names. In my opinion, if a rapport is to be created, in any classroom, this is an essential element and instructors and students alike must see this as a necessity. In this case study, many students were not even willing to consider options or ways of having their names known but yet one student understands that it takes more than merely a visual link to create a "connection", to use her word, between the people in the separate sites.

Shelley: For one thing because our name doesn't come up on that little teletype print, and actually it was funny

'cause he even said that like when he was talking about us getting together and doing our little debates and — and he said like all I have in front of me here is a list of names, I don't have — I don't have — I don't even know where you guys are from, and so of course he's got his list of names and that's it. So he has no way of knowing who who is, we don't introduce ourselves when we come on, hi, you know, it's so and so, we don't have that opportunity to discuss things before and after unless we're conversing. And even if we were conversing through e-mail, that's not a picture. You know, you're not putting a face to a — to a name. You might get to know the name and something about the person, but you're not going to get to know the face unless you get a face name recognition or reintroduction to them.

... But that does not necessarily mean that I want where we have to go around and introduce ourselves.

... I don't want to do that.

Loya: Okay, all right. Would you want to have to say who you are if you asked a question?

Shelley: No, I don't think so.

... No, I think that — personally now that I'm at the point I'm at, I probably could do that, but initially that would stop me from asking any questions —

... — because I don't know how they're going to react on the other end, and that has more to do with I think the students themselves necessarily than the teacher.

... But that has to do with — like the comfort that I have with it.

Loya: What about a name card sitting in front of you, so that if you did ask a question they would see it, but you wouldn't have to necessarily say anything.

Shelley: Yeah like the delegate from Romania. That would probably be okay so long as they didn't ask us when we got in there to do something goofy, then that would be okay. Like, you know, if you had to have your little name plate in front that would be cool. I think if that is their intent — that, you know, I mean originally [our advisor] was saying that was her intent to have us all kind of have a connection

and a get together, then there has to be more to this than just — than just us being visually linked.

Instructor Accessibility. Figure 11 exhibits how undecided the respondents were when asked about the accessibility of the instructor outside of class time. Five respondents wrote unsolicited remarks, such as “haven’t tried”, beside this questionnaire statement which would thereby explain the result seen in figure 11. Many students commented in the interviews that they had not tried to contact the instructor outside of class time.

Asking Questions in Class. There is nearly an even split in the opinions of respondents who feel comfortable making comments or asking questions in class and those who do not feel comfortable according to the questionnaire results (see figure 12). Totalling the “strongly agree” category responses with the “agree” responses and comparing that total for each site to the total of the “strongly disagree” and “disagree” responses, it is noticeable that there is a nearly even division. Seven Site A students responded in each of the agree and disagree totals, while eight Site B students responded in the agree totals and six in the disagree totals. These are very similar numbers from each site and will be considered further while taking the interview comments into consideration.

The program coordinator who is also a Site B student commented that their cohort was much less likely to ask questions during this course than they usually would.

Julie: And I think because it's three sites, it's three groups of people that don't each other — don't know each other, people didn't ask as many questions as they do when they're in their own individual groups, I know our group is a really vocal group and they weren't through the course of this class.

... And I benefit from other people asking questions, because they're ones I didn't think of.

... And I don't know how the other two classes feel about that, but I know our class was pretty quiet.

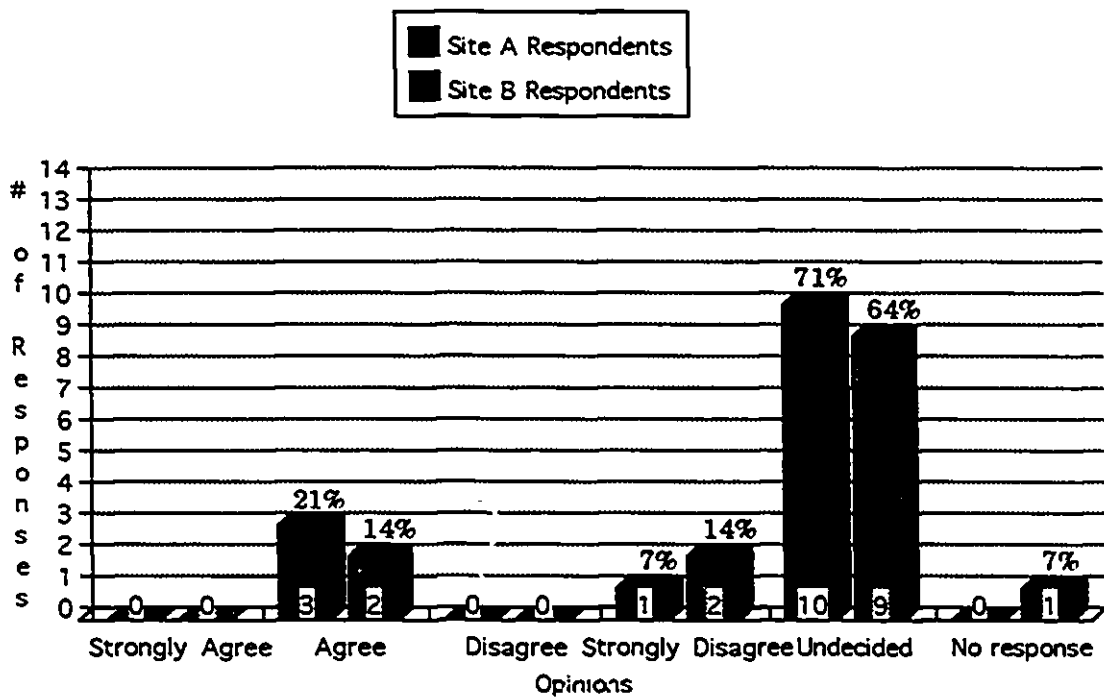


Figure 11:
Opinions of respondents as to whether
the instructor is easily contacted outside of class time.

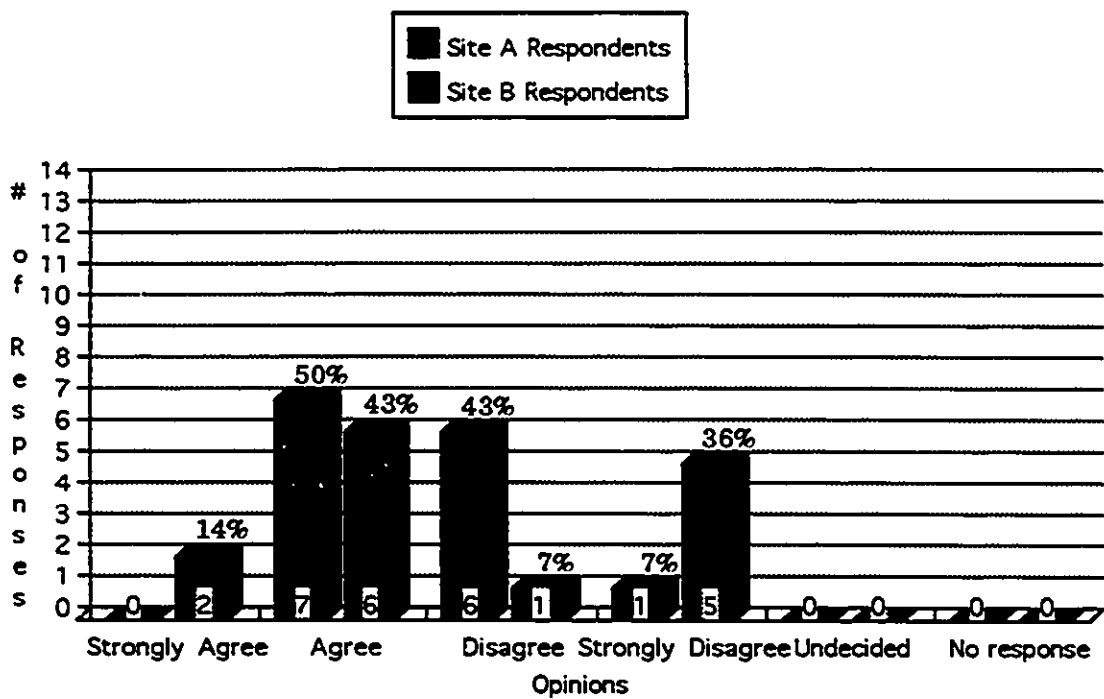


Figure 12:
Opinions of respondents as to whether they feel comfortable making comments or asking questions in class.

As mentioned in the Methods chapter, asking in-class questions involved a unique process in this video-conferenced classroom. Buttons were strategically placed approximately one between every two students in each classroom and microphones were suspended overhead. For a student to be heard and seen through the video-conferencing equipment, it was necessary for him/her to press a button, and wait for the instructor to acknowledge, prior to speaking. If this was not done, the students at the other site were unable to hear the question nor see the individual who was asking. If more than one student had pressed their buttons, the system automatically queued the students in the order in which the buttons were pressed. Once a student had pressed the button and was acknowledged, the camera would automatically swing around to view the person and the ceiling-suspended microphone would automatically activate. This meant that a head and shoulders shot of the student would become the image on the large monitors at the front of each classroom.

There are three main hindrances with regard to asking in-class questions. The first was the delay between when the button was depressed and when the instructor responded. The second was the aspect of seeing yourself blown up to the 170 centimetre (67 inch) size of the large monitor. The third difficulty formed as a consequence of the first two and was utilized to avoid the other two obstacles; however it escalated into a major problem of its own. That problem was when students, particularly those in the same classroom as the instructor, began to simply blurt out questions and/or comments without using the button. All of these matters functioned to dissuade most individuals, regardless of location, from asking questions. Although, the questionnaire responses indicate otherwise, students at both sites showed the same anxieties over and over. When asked about these

issues, the Site A responses were as follows.

- Loya: Tell me about that, did you use the button or —
- Gloria: First few times I didn't, I found the button very distracting, I noticed a couple of other students did as well, and that it was deterring some people from asking questions, so for the first few times I didn't because I thought, to hell with it, you know, I want to ask a question but I don't feel obligated to go through this process of being on — on the screen, and then of course got over it as other people did, so — but I think it's still stifling some other people's contributions.
- Loya: Yeah, are you comfortable then now asking questions in class?
- Gloria: 80% comfortable, yeah.
- Loya: Why, why 80, why not a hundred, what would make a hundred, a hundred percent comfortable?
- Gloria: Um, well a lot of it has to do with the delay of — you know, I have a question I want to ask him before he launches into the next paragraph or next area, but he has to — you know, I have to push my button, then it has to register on his board and he has to select it and we have to wait until it pops up on screen, so that delay — you know ...

- Loya: Have you asked a question in class?
- Kim: Yes, I have.
- Loya: Tell me about that, did you use the button or not or—
- Kim: Yeah, I used the button, I've asked several questions.
- Loya: Always using the button?
- Kim: Yes.
- Loya: How does that make you feel?

Kim: I don't like it —
... — I don't like seeing my face on the screen because there's a wait time too, you push the button and you don't know immediately if he heard you —
... — or recognizes you because he has to finish what he was doing. ...
... here if you push the button he sort of nods at you, but [when he's at a distance] he can't see who's pushing the button until — until he actually answers and it comes up on the screen, so he just waits and you don't know whether to push it twice.

Loya: ... Are you comfortable asking questions in class?

Lisa: Generally?

Loya: Generally, okay, why?

Lisa: Well, I don't know, I guess it's the only way you can get information, you know, I just — but in this situation I find I kind of think, uh, you know, but I haven't really — I haven't asked as many questions as I usually do.

Loya: Why is that?

Lisa: I don't know, it's — I find it hard to make that, you know, transition, it's just — it's ridiculous, for me, like, you know, I don't understand why. I think that, you know, you're kind of — you're so used to just interacting with the professor that — like, pressing a button and waiting for the camera to get on you, etcetera, etcetera, it slows down the process so much.

Loya: So the time lag is a bit of a problem for you?

Lisa: Yeah, yeah.

Pat: Yes, and I don't like the button. I don't like pushing it and I don't like it when it focuses in, but I understand the necessity for it, but I don't like it.

Loya: Yeah, are you comfortable asking questions in class then?

Pat: I think it limits me in a certain way, absolutely, yeah, the first class I had like about five questions and I didn't ask any of them.

Loya: Have you ever asked them then since then, like —

Pat: Yeah, oh yeah. Desensitized.

Loya: Oh, okay, all right. Have you asked the instructor a question outside of class?

Pat: No.
... I never had any questions that needed answering.

Loya: Oh, okay, okay, so what about those five then?

Pat: Oh, well, see, I can handle not knowing.

Loya: Okay. Have you asked a question in class?

Leona: Yes I have.

Loya: Did you use the button?

Leona: Yes, I did, but with some hesitation.
... For one being — well, in a way it inhibits me and in a way it doesn't. It doesn't inhibit me because of the fact I cannot see myself when I'm on the screen due to my visual impairment.
... All I see is blurred. It does inhibit, though, at first, because I didn't really understand how it was going to work, those sorts of things.
... But now that I'm used to it, it's just — you know, I actually kind of find it a bit of a pain really.
... Because you have to stop and think, oh yeah, I gotta push this stupid button, whereas otherwise you just automatically, you know, blurt it out or you raise your hand, so of course some people still are doing that.

Not only did students find a definite problem with the delay and with the screen image of themselves, these problems became even more compounded, as Leona alluded, when students on site with the instructor chose to blurt out questions or comments without using the button. This meant that students at Site B could not hear the question nor see the person asking. As a result, the students at the other site, regardless of which site was the distant site, felt excluded and became frustrated.

The Site B responses were very similar but if they were to ask any in-class questions they had no choice but to overcome their anxieties.

Loya: ... Have you asked a question in class?

Sandra: Mm hm.

Loya: And tell me about that, did you push the button or—

Sandra: Yeah, I pushed the button once, it was more embarrassing than anything else and at that point then I decided, I don't like this, you know 'cause your face is like this big way up there —
... — and okay, you can ask the question, but you stay up there for a long time.
... So then you have to look at yourself and everybody else.

Loya: ... So, as far as are you comfortable asking questions in class?

Sandra: Not in this setting, no.

Loya: No, because of the buttons?

Sandra: Mm hm.

Loya: Any other reasons?

Sandra: I think because — well, they ask you to speak up so then you have to repeat it again.
... I don't like the style.

Shelley: ... I'm always very nervous about touching the button and then seeing your face up on the screen, that's just kind of like throws me to no end. I don't mind the fact that he can, but I don't think everybody needs to see — [who]

... — ask[ed] the question because it's the same as like in a classroom, not everybody turns around and looks at the person who's asked a question. They're paying attention to the question but they want to know what the instructor has to say. I understand, you know, alleviate the boredom and the newness and everything else, but ... that can be very intimidating, you know, you're wondering, God, am I having a bad hair day and who are the absolute strangers who are seeing me and —

Loya: ... Are you comfortable asking questions in class?

Shelley: Yes and no, the manner in which we have to ask the questions causes a little bit of — of hesitation, and because the response isn't quick enough, like you know when you have a face on face with a teacher,

... — and you can get your point across, whereas with this, if he wanted to he could ignore us, you know what I mean —

... — he really could. I mean he doesn't do that, but he could by rights ignore it, and it's not — or he's not fast ...

Christine: No.

... I personally felt quite intimidated by the whole conferencing thing.

Loya: The button and what-not?

Christine: Yeah, I felt very intimidated by that and so I usually asked my questions through other people, who are not afraid to push the button.

Loya: Okay, that's fine, that's fair, so the next question I think you probably answered, are you comfortable asking questions in class?

Christine: No, no, not at all.

Loya: Just because of the technology?

Christine: Yeah, and I feel that this class is structured that you can have some really great, great conversations and discussion, and I don't feel that the video-conferencing is lending to that, and therefore I really personally feel we're missing out because the stuff we're doing is absolutely fascinating and interesting.

The following remarks made by Ron, a Site B student who was distant from the instructor for all but one class period, describes the ease with which one could avoid pressing the button in the instructor's presence. The amazing part is that although he disliked the non-button questions by the Site A students, he did not see his own behaviour in the same light.

Ron: Well, I — I think I did use the button once and I found that when he was down — came down here and he was asking questions, it was easy just to interject quickly and just say a few sentences or a few words, as you would do in a normal classroom situation.

... So I did both — both methods.

Loya: Okay, all right, are you comfortable asking questions in class?

Ron: ... with respect to what, when — in person or with the buttons?

Loya: You tell me both.

Ron: Right, okay. With respect to the buttons, he's going along with a certain dialogue and you have to press the button and then there's a bit of a time delay, it's not as natural and it's not as comfortable as when he's in class. I — I — my interaction when he came down to [Site B] was at least 70% more, it — was significantly more.

... And that's because, you know, he's saying something and you just add a few words, I mean obviously not to be interruptive or to cut him off or to be rude, but it seemed to flow fairly well and fit in

... with the dialogue that he was doing, whereas with the buttons, it's more of a mechanical nature and it's a timing nature, so you hesitate to use them.

... Perhaps at the beginning it's a bit of an intimidation factor because of the button, the camera zooms in, that type of thing, but no, I think you quickly get over that.

Kim, a Site A student, relayed the same displeasure as the Site B students had been expressing with the lack of button-pressing by the Site B students for the one class that the instructor was at Site B. The instructor's absence caused the Site A students to realize what they were doing by speaking without first pressing the button. However, my observations do not indicate that the Site A students changed their behaviour upon the instructor's return.

Kim: I'm not entirely certain that they — they have it altogether. You can't hear [Site B] or they can't hear us, and they ask — [Site B] asks the questions and they don't push their button so we don't hear the question — that was particularly annoying when [the instructor] was in [Site B], and I can understand why they keep buzzing us saying push the button. I think we will be much more understanding when [the instructor] comes back to [Site A].

Loya: Do you think?

Kim: I think so.

Loya: Do you think it will make a difference now?

Kim: Because people were quite annoyed that they couldn't hear.

... As [Site B] had been in the past and I can now understand where they're coming from. You can't hear, they don't push —

Lisa, a Site A student explains how the button-pressing aspect acts to impede the formation of a rapport especially for those students in Site B.

Lisa: Well, I find the video distracting, but I don't feel that it affects our relationship with him because he is in our classroom, so —

... — you know, we can interact with him freely, you know, in — in break time and everything, but I do find, you know, pressing a button to ask a question and everything, it's like a barrier —
...— in our communication theory, like it's noise—
... And I find that distracting, so in a sense I guess that for me, in that manner impedes a rela — forming a relationship.

Obviously, some students did not have any qualms about asking questions or making comments in class, but the fact remains that many did and the instructor did little to alleviate these reservations. He did attempt to encourage button-pressing questions by refusing to respond to any non-button questions but this quickly fell by the wayside partially due to the technological failures mentioned previously and partially due to lack of persistence on the part of the instructor. Button-pressing, or the lack of it, was a primary deterrent to the development of an instructor-student rapport.

Instructor-Student Relationship. An illustration that the students do not believe the instructor to have all of the elements of rapport working together to create a harmonious personal relationship, creating an atmosphere of mutual confidence is shown in figure 13. This histogram indicates that on average the Site A students found the relations between the instructor and his students to be “average” while the majority of Site B students found this same relationship to be “needing improvement”. In the latter site, not one respondent labeled the relationship as “superior” and only four did so from Site A.

Therefore, even though the instructor demonstrates some of the components in his teaching which constitute a good instructor-student rapport, and which are key to effective teaching and learning, he is unable to utilize these talents to their fullest potential. An interactive and harmonious relationship with the students is only evident in a sparse way throughout this

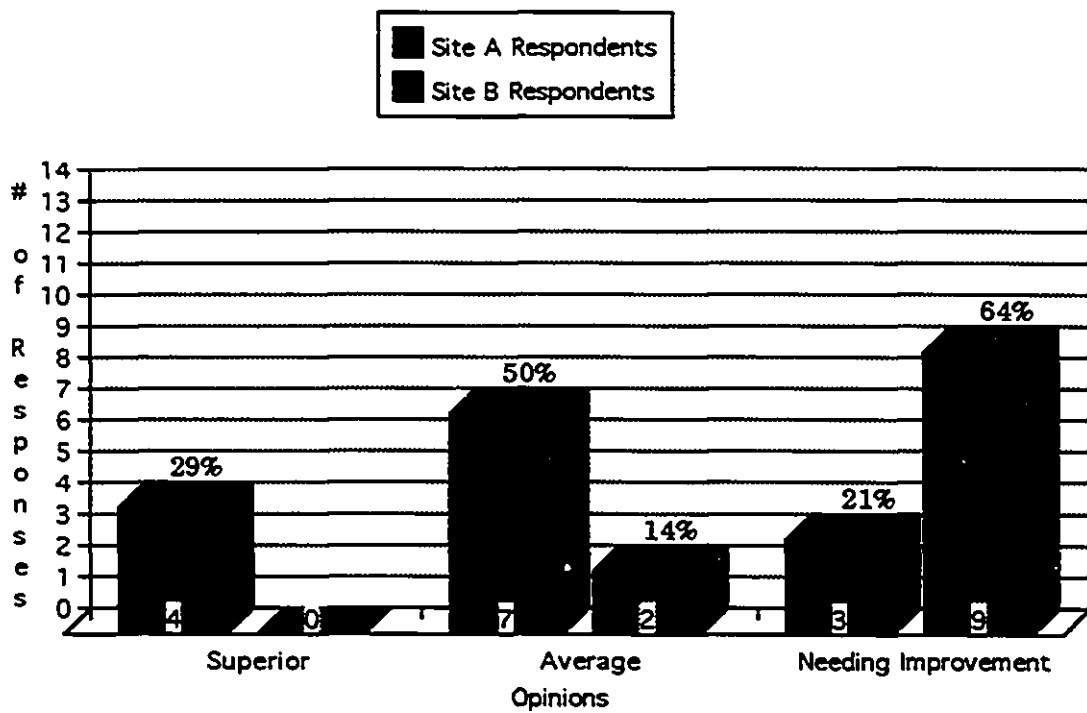


Figure 13:
Opinions of respondents as to the relationship
between the instructor and the students in
this video-conferenced course.

course. The students, particularly in Site B, do not feel this relationship is as good as it should be.

Course

This was a fourth year course which was a degree requirement for most of the students enrolled. However, a few did say they were taking it out of interest in the subject matter.

Generally, the students agreed that the examples provided by the instructor in class were relevant and worked to enhance the content matter.

Loya: Can you relate to the examples given in class?

Carol: All the way, yes, they're real-life situations and real-life happenings, so of course you can relate to it, and I think that's why [the instructor] is such a good instructor because he does use everyday examples, you know, they're not made up or anything like this.

The Site A and B students generally concur that the instructor has adapted the course to the students' background and life experiences (see figure 14).

The students' were evaluated in the course based on three areas: a term paper (30%), class participation (30%), and an examination (40%). The term papers were 10 to 15 pages in length and students could choose their own topics. They were due one week after the last class. The class participation was actually one exercise where student teams worked in a debate format. The idea was to give students some experience with oral debate-type presentations. These presentations were held over the last two class periods. The examination was a "take home" format and was given out on the first day of class. It was due on the last day of the course.

Since all of the assignments were to be submitted or presented at or near the end of the course, there was no opportunity for instructor feedback.

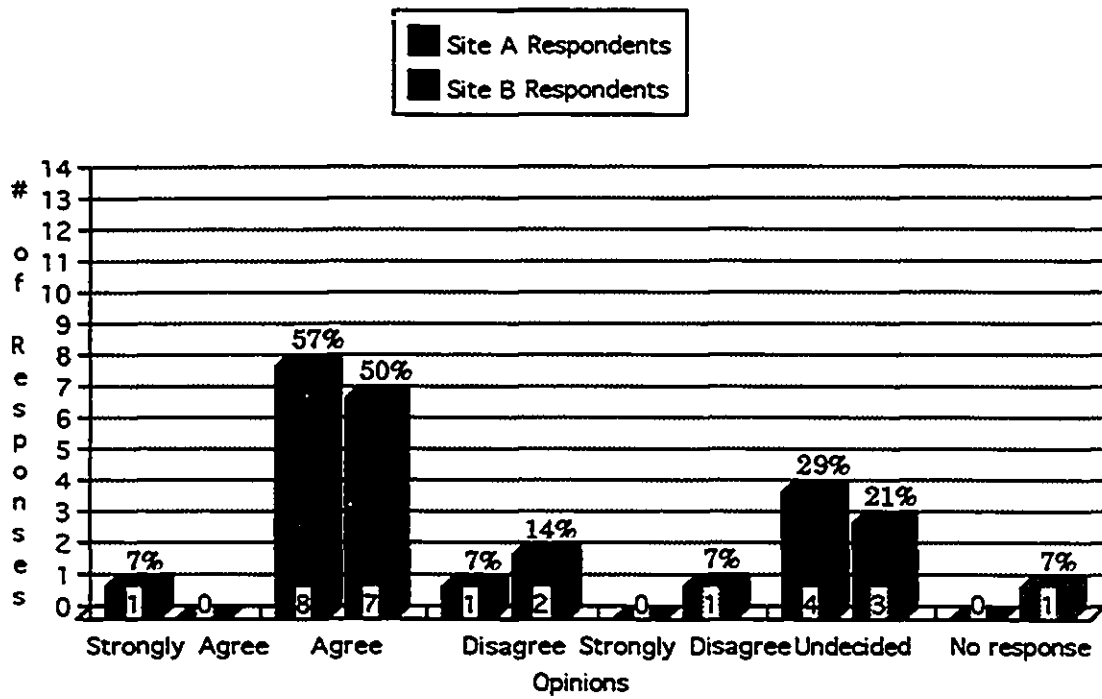


Figure 14:
 Opinions of respondents as to whether
 the instructor has adapted the course to student's
 background and life experiences.

Some students found this a little unnerving. They simply did not like not knowing how they were doing until it was “too late”.

Lynn: I guess I've never had a [practicing professional] for an instructor before so it's hard to know — you know, I think the way he's got it set up with everything being required to be finished at the end is difficult 'cause we don't know what to expect from you — you know, as far as how he marks or what he wants in a paper.

Although the instructor had previously taught this course, without the video-conferencing technology, as an interactive seminar and he had hoped this course would operate in a similar manner, it did not. In the interview following the first class, the instructor forecast how the course should operate. In these remarks, it is clear that his philosophy is to encourage interaction and in-class discussions.

Instructor: — things that they were saying that one thing you have to worry about with television, with the media ... is that people can sit back and expect to be entertained and spoon fed, so you have to kind of involve them and fortunately, this course, you need people to get involved, I mean the last part is the best ... when you start talking about these things and people start saying what about this, what about that, 'cause that leads me nicely to other areas and you can tie things together a little bit, explain other things and that's really the only way to go. And that, I think, is essential, because if you just have someone standing up here giving a lecture with a microphone then a video cassette could be shipped down there ... and not worry about it. So it has to be an interactive process, otherwise it's pointless ... in my mind, it isn't worth all the effort.

The students generally thought that this course was run as a lecture (emphasis added).

Kim: ... I enjoy his lectures. ...

Shelley: ... He's a very fast speaker and I guess that's the difference too, it's like, you know, whether it's a lecture situation or a class instruction, and that's — there's a very big difference, so this is more like a lecture to me. So now that I'm looking at it as a lecture, it helps make it easier to formulate questions and ask which ones you can and — okay.

Marsha: He tries to promote discussions, and the original intent I think was to him — like to lecture a half a class and then him for discussions, so he does that and — you know, I think he wants us to ask questions but nobody is really.

Christine, a Site B student, summarizes her impressions of this video-conferenced course with regard to the course itself. She indicates that having more dialogue would have greatly increased the value of the course content.

Christine: ... There's more of a potential to — to have more class discussion, but perhaps it's just not being utilized as fully as it could be
... and maybe that's — maybe my opinion would be different if that portion of it were different.

Loya: Mm hm, okay, so if it were less of a lecture and more of a interactive seminar.

Christine: Yeah, I just think that there's so much potential there to have some great discussion and —
... — and that would be good.

Although, the previous instructor's remarks indicate his intentions, the course was conducted mostly as a lecture and the students were engaged in very little dialogue. This was not due to any fault of the instructor's teaching style. It was most likely due to the apprehensions felt by the students with regard to pushing the button prior to speaking. This wariness severely

suspended any attempt at spontaneous discussions. The instructor may have prevented some of these problems had he involved the students in utilizing the technology from the very first class rather than waiting until the last two class periods when the students had to use the technology to give their presentations.

Video-Conferencing

This was the first video-conference course taken by all of the students; thus, there were no reflections nor comparisons made by students to previous video-conferenced courses. However, one student had taken an audio-conferenced course where students had to press a button to be heard when speaking. Therefore, she had some experience with that part of this course.

Carol: ... Actually ... I've been involved, not with a video one but just an audio one before.

... Yeah, so — so you had to push the button in order to talk, which I'm sure that's what [the audio-conferenced site] has to do. I believe just push the button, so I've had a little bit of experience with that part of it.

In the interviews, the students were asked to comment on their impressions of this video-conferenced course with regard to the video-conferencing aspect and also to comment on their feelings about the technology being used for this class. Their responses fall generally into four categories: the human element, technological problems, pros and cons, and side chatter. By far the biggest issues were the technological problems and side chatter. The former was a problem which I expected, but the latter was a complete surprise.

Human Element. There was some concern, particularly with those students distanced from the instructor, that video-conferencing technology lacks a human element. It lacks that physical contact or presence of an instructor and this was seen as detrimental to the delivery of the course.

Julie: It's fine, it's not as good as in person.

Sandra: He's a very competent, good instructor, but I like the personal aspect of having a teacher physically right there in the room with you.

Marsha: I think I prefer having an instructor rather than this video-conferencing.

Shelley: ... sometimes I think I'm almost jealous that they — they have an instructor there in [Site A] and I don't, because they have an immediate — they have what I'm familiar and comfortable with, and I'm stuck on the receiving end of this video-conferencing thing.

However, one Site B student compared not having a physically-present instructor with being in a course with 400 or 500 students. She remarked that the amount of interaction is similar.

Maggie: ... I think it works — it works really well for me, like when I talked to other students I compare this to when I took like psychology courses, and there, you know, 400, 500 students in an auditorium with you. This is exactly the same as that, it's — it's about the same level of — of personal interaction and stuff because you — I mean actually here you get more, it's just he's not here in person, it doesn't bother me.

I've been in those introductory Psychology classes and I completely relate to this analogy. The instructor only knows an identification number and not a student's name nor face and Maggie feels that video-conferencing is comparable to those types of courses. I am more optimistic that video-conferencing does not have to be so impersonal.

Figure 15 reflects the desire for the actual presence of a human element. It indicates that there is a consensus that both sites would prefer to have the

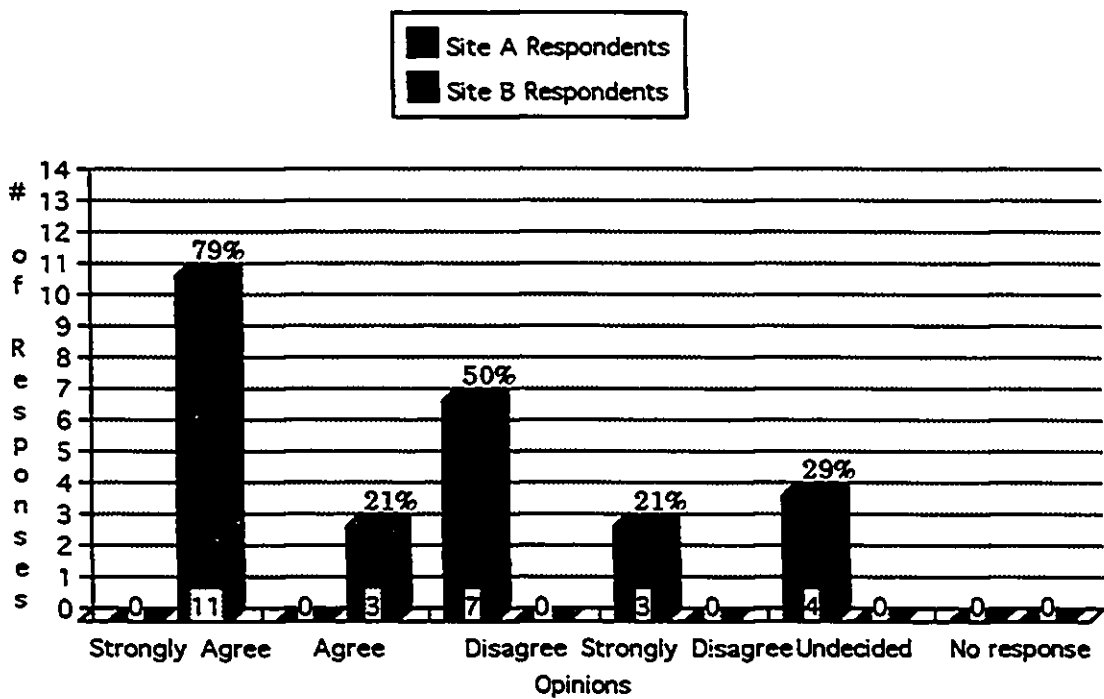


Figure 15:
 Opinions of respondents as to whether they would learn more if the instructor taught some classes from Site A and other classes from Site B.

instructor on their respective sites for the majority of the course. This provides a clear reason for the instructor to teach some of the course from each location.

Certainly the physical presence of an instructor is missing for most of the classes at Site B. Other than having the instructor travel to and teach from this site sometime through the course, there is not much that can be done to resolve this issue. What is important is that the instructor does not ignore these distant students nor favour them over the local students. There must be a middle ground and the instructor may have fallen slightly short of reaching this compromise due primarily to the technological failures which made it much easier for him to focus his attentions on the local students.

Technological Problems. There were undoubtedly technological problems in the video-conferencing equipment and this most certainly was a major issue expressed mainly by the Site B students who were interviewed.

Sandra: Well, after last class not being able to talk back, it was, I'd say, awful ...

Christine: Well, I don't like it. If the machine isn't work — like if there's technology breakdown, you've had it.
... And that's happened to us a couple of times and I've gotten frustrated so I've left.
... So that — that's a bad part, 'cause if it's not working you're kinda out of luck.

However, a couple of Site A students also reflected on the technological issues. Pat could sympathize with the Site B students simply from having one class without the instructor on-site, but also she stated how the problems affected her specifically related to the tuition fees.

Pat: Well, I don't like the delays in lecture time, I mean when you have 13 weeks and one of the days — or 13 days, right, and then one of the days is taken up for reading day and then it takes a half an hour to

set up and then when it does get going it's not running efficiently anyways, but that makes me mad because I mean, you know, you're paying two hundred and whatever, \$244.00 to take this course so they could have it up and running by the time the students get into class. I don't mind having [Site B] hooked up but I would never want to be [Site B].

Loya: No, you wouldn't want to be the distant site?

Pat: Yeah, I wouldn't want to be the — I would want to be the central site from which everybody else learns from.

... Simply because of when he was gone.

Another Site A student wondered about the sound system even though she was located in the same room as the instructor. Marsha did mention it was initially difficult to hear the instructor at Site B but this was rectified.

Carol: ...The only thing I have to say is I don't think the audio system is great in this.

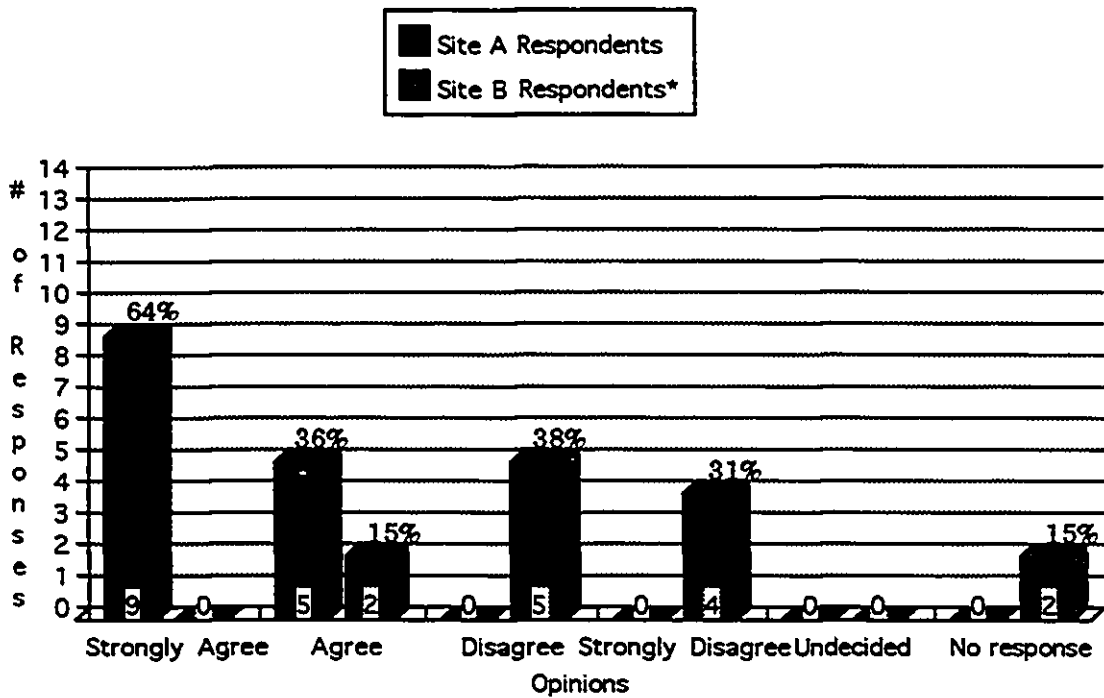
... The sound system isn't that good. I think — I think for between [Site B] and [Site A] it's too high tech because you can't — what I'm finding too — that's why I was wondering with my cold and coughing, I heard a guy coughing in [Site B] and it echoed in [Site A].

... You know, it's almost too high tech between the two of us, and they're having trouble with it but I guess it's new and they'll work out the bugs

... but it's almost like it's too high tech between us, but yet [the audio-conferenced sites] say sometimes they are hardly hearing us.

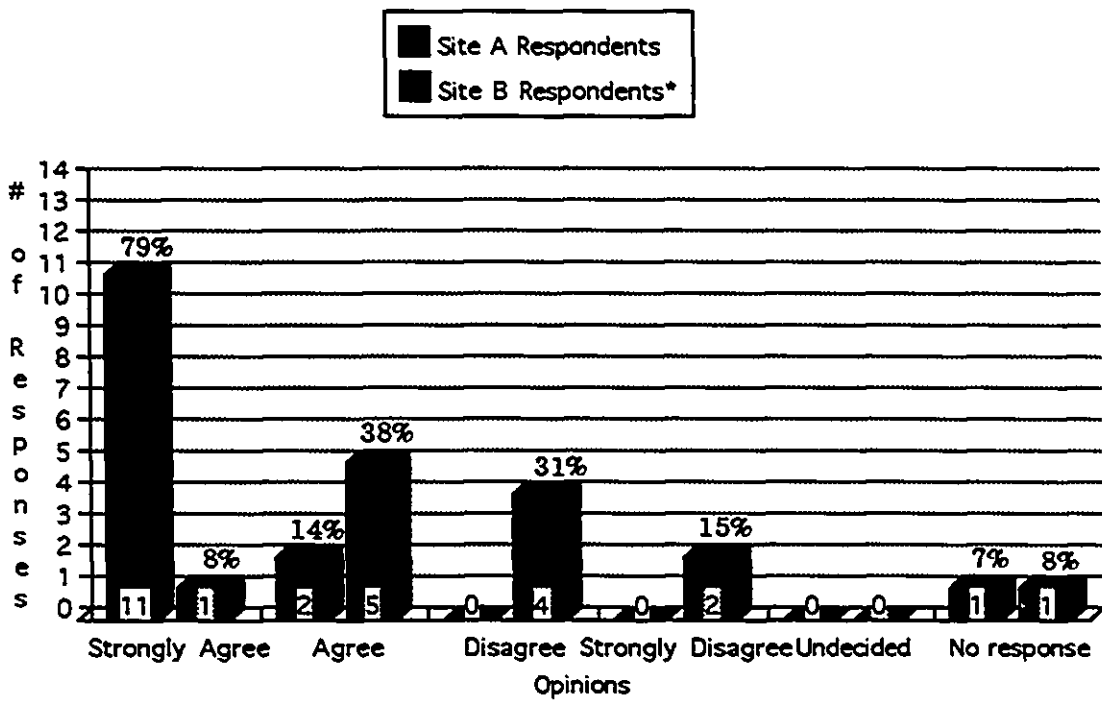
Marsha: ... At first — it's not too bad now, the first couple of times the volume wasn't the loudest so it was kind of hard to hear.

As reflected in the interviews, figures 16 and 17 indicate that there was some difficulty felt by the distant students in hearing and in seeing the instructor.



* n=13 because one respondent marked two categories and neither mark was counted.

Figure 16:
Opinions of respondents as to whether they could adequately hear what the instructor was saying.



* n=13 because one respondent marked two categories and neither mark was counted.

Figure 17:
Opinions of respondents as to whether they could adequately see the instructor.

Primarily it was the Site B students who were affected by the lapses in technology, but they were not the sole complainants in this regard. Technological problems impact all of the students in the distance education classroom. Instructors need to realize this and act accordingly when the connection is reinstated. Maggie describes how this instructor was able to compensate for the loss of contact between the two sites.

Maggie: Well, when it's working it works great, I think. It's kind of frustrating when the lines weren't working, like when those two days when the lines were kind of down or whatever —
... — but I think he sort of compensated for that once the lines came up, like he kind of covered again what he needed to cover, like the basics really briefly and then allowed for questions.
... So for me like that's sort of the same as if an instructor is suddenly ill or called away from class and have to miss, I mean to me it's the same thing.

Pros and Cons. Several students, when asked to comment on the technology, responded by listing the advantages and disadvantages of the system. It is interesting to note that they state many of those common in the distance education literature: accessibility of different courses, attainment of specialized knowledge and skills, as well as learning about distance education through experience.

Marsha: I think it's great, you know, it's something that you can take a course in [Site B] that's being offered in [Site A]. The whole technology is good.

Tammy: Good, it's had it's quirks with not — without getting audio one day and whatnot, but I think it is probably the best that we can do without being in [Site A], and I think it's really good that we're able to access courses from [Site A], we're very fortunate being given the opportunity so I quite like the idea that it's possible.

Peter: I really like the course and the course material, and the ... teleconferencing ... aspects of it, neither of which I've been exposed to before, and they certainly add an interesting dynamic to the course in that not only are we learning [the course content], but we're also — we're also actively engaged in the process of learning about — about ... how distance education might — might work.

Lisa: I realize the importance of it for people who — you know, are unable or unwilling to relocate to a larger centre to go to school, but I think it's great that — you know, [the audio-conferenced site] is enjoying the audio component, etc., and that — like I think that once the bugs are worked out, it — it will be, you know, a good technology to use in schools —
... 'cause it increases access —
... but, you know, as a sort of a guinea pig in that sense it's been difficult to get used to.

Maggie: I really think that it allows students to gain access to a lot more information, so like courses that are only offered in [Site A] we can maybe one day access, vice versa, students in [Site A] could access things here without having the expense of having to move for a whole term and possibly give up employment and — and trying to find a new place to live and everything like that, that's a big hassle, and I find this is a much better way of having to do it.

One student, after stating some possible advantages to distance learning, was adamant that it simply was not and could never be as good as having an instructor present in the room teaching a course. He saw this as a major disadvantage to this type of instructional environment. He would not even allow me to finish my question before interjecting his response!

Ron: Well, I think it has — it has some advantages, it's able to — it's able to educate people from a distance, it gives them that opportunity, it utilizes technology very well. People that are in there to learn and be well motivated, I mean they're going to get the information they need — the basic information they

need in order to succeed in the course, so that's okay.

... But it's — like for example, you know, your — your questionnaire, you know you mention some things like establishing rapport, I guess I assume it was with respect to the vi — the conferencing, eye contact type of thing, it's just that it loses a lot, simple as that. You get so much from a person who's standing — sitting or standing in front of you and they're looking at you and — and just the non-verbal interaction and the verbal interaction and — and the fact that, you know, you're just going to pay attention, you're going to be more interested, whereas you don't get that, there's no connection made through a television screen, it's as simple as that —

Loya: No?

Ron: — doesn't happen, no, no, I don't think so.

Loya: Do you think it ever could, like do you think he could do anything —

Ron: No.

Loya: — differently that —

Ron: No.

Loya: — would enhance —

Ron: No.

Loya: — that?

Ron: No, that is not, no, no, that is — no —

Loya: Okay.

Ron: — that is not a — a slight on him, no —

Loya: No.

Ron: — it's just — it's just that you're looking it through a cathode ray tube, it's as simple as that ...

... you know, and — and then of course there's a few technical problems in terms of, you know, you maybe can't see him as well as you'd like to see him

and

... on the audio, that type of thing, but oh, no, when he was in class, and you know, he'd say something to you, he'd look at you and — and you just — you just respond to the fact that there's a human being in front of you as opposed to a cathode ray tube

... and there's nothing you can do, I don't think, that'll be able to — well, there isn't, you can't compensate for that.

Despite his dislike for distance delivered courses and the lack of a physically-present instructor, Ron realizes the value in delivering courses using this technology. He would take another distance education course due to their accessibility.

Ron: But I would take it again because I know that — I mean economics and a number of factors, I mean they're going to likely have to deliver some more of these this way. It's economical and so they'll do it and if it means getting it, you know, doing that so I can get it as opposed to having to go down to [Site A] myself, absolutely.

Loya: The accessibility factor, basically, being accessible to the course is — is good?

Ron: Yeah.

Side Chatter. Students speaking amongst themselves during class-time while the instructor or another student was speaking, I have termed “side chatter”. I found this type of conversation particularly noticeable in the absence of the instructor. Therefore, it occurred frequently in Site B, but also in Site A while the instructor taught from Site B. I found it terribly distracting and definitely not conducive to a satisfactory learning environment. I was not the only person who felt this way. Several students, from both sites, made similar remarks. I believe this was a serious quandary. To make matters worse, my opinion is that the instructor had no knowledge of this situation, or if

he had, he chose to do nothing about it.

Marsha: I find — I find that our class really loses interest easily because there's no instructor. When you tend to have an instructor, you're kind of forced to pay attention, and — but I find that we kind of lose track sometimes and — and get off topic at times.

Loya: Off topic with the instructor or the students separately?

Marsha: Students separately, yeah, and sometimes hard to focus on that if you — if you are one of the people that are trying to listen —
... when the class gets going.

Sandra suggested providing individual headsets to combat the side chatter. In this way, those students who wanted to pay attention to the instructor and learn could do so. She found this “chitter chatter”, to use her terminology, very distracting.

Sandra: If you want to sit in class and learn or short — short of telling your classmates excuse me, I'd like to listen, be quiet, you know sometimes you want to listen or sometimes you want to engage in the conversation, but because there wasn't the link back, he has no idea what we're doing even if we're here.

... So you're there if you want to learn but it's very easy to tune out just like that, and if other people tune out, for you to listen — it makes it more difficult. We're all adults — just say well, I want to listen you guys so you kind of have an ear for that and everything else that is going on.

Loya: Right. So as far as last class goes a lot of other stuff was going on, I take it?

Sandra: Yeah, and maybe it might be nice if they're, you know, looking at getting courses delivered this way in the future, you each have your own headset.

... You know, so then you can tune out, you don't necessarily hear what's going on unless the people are asking questions, then it will monitor through and you can hear it. But, you know, that was one way if you wanted to stay and pay attention, but it

doesn't seem to be as much — well, they try to bring in the interactive component, but I see it more on my level it's if I choose I want to learn.

... Where you've got an instructor you kind of — they can see you, they know exactly what you're doing, so you're kind of maybe used to that structure and you will write and take notes so you don't have the little chitter chatter —

... and distractions.

Even for just the one class that the instructor travelled to Site B, the Site A students really disliked his absence and a great deal of side chatter was evident. Lynn noticed through the monitors that side chatter appears to occur in Site B.

Lynn: I think now that we've had a class without him there I can — I think if we didn't have him on a regular basis, I would find it very difficult. There's — it was easy to be distracted that day, there was so many conversations going on around us. It was hard to really pay attention. I think it would be — I would be very frustrated if he wasn't in the classroom each day. I mean sometimes it's hard enough — there are some people who are obviously there because it's a required course —

... not because they are very interested. So that — it's — I'm glad that he's in our classroom.

Loya: Would that make a difference, though, like if you knew that he was teaching from [Site B], would you—

Lynn: Yes, I think it probably would. I know we can't hear the conversations going on up there, but it looks like there are conversations going on.

Gloria: Technological troubles, and then as is evident last Thursday, basically keeping on track when the instructor isn't in the room, you know when he was in [Site B], things really fell apart. ...

... And I had an ear — you know, one ear open to him and I was doing my own reading of material for the debate, and he never did get back to what I wanted to hear.

... So it was interesting to see that effect of him not being in the room — it was just basically — it all went to hell.

Lisa: But I mean I — on Thursday [when the instructor was at Site B] I found it really difficult to pay attention ...

These students were adults, mainly between the ages of 25 to 34 (see figure 1, p. 71), in post-secondary institutions. They, in most cases, were also working full time while taking this degree program. I found the amount of off-task behaviour occurring in these classrooms to be rather surprising. Perhaps it was naive to assume adults would take their education more seriously and avoid off-task behaviours, but this was my assumption. Over and above the side chatter, I observed note-passing, reading travel brochures, and walking across the room to talk to another student during the instructor's lectures. These items will be discussed later under the topic of researcher observations. The instructor should have demonstrated a greater awareness of his surroundings both in the local classroom and the distant classroom so as to prevent these behaviours from disturbing others, especially since the students perceived this to have negatively affected their learning.

In addition to the previous four topics of discussion, there were other issues revealed by the students with respect to the video-conferencing. For some students, the type of course being taught using this technology was considered paramount in determining whether they would take another course taught in this manner. Although, the overall reaction to taking another video-conferenced course was suddenly favourable in spite of some of the negativity expressed, there were some students who would never willingly consider this type of course again. Also, length of the course may be a factor which acted to

hinder the development of instructor-student rapport in this case.

Although there was a general feeling of discontent among the video-conferencing students at both sites regarding the technology, when asked if they would be willing to take another video-conferenced course or recommend such courses to their friends the responses were surprisingly favourable.

Loya: ... would you take another video-conference course after this one?

Peter: Most definitely.

Loya: Why?

Peter: Well, I think — I think it's an interesting thing for one thing.

... I'm still interested in finding out just how it works and how it can be utilized and maximized. I also am attracted to the idea that you can — that you can interact with students in other centres and share with them and learn with them and trade perspectives with them.

Loya: ... Okay, would you recommend video-conference courses to your friends?

Peter: Yeah, I would.

Loya: And for the same reasons or —

Peter: I think so, yeah. That isn't to say that all of my friends would share my feelings about it.

... But if they asked me, yeah, I would say that it's — it's been a positive experience for the reasons that I mentioned.

Loya: ... would you take another video-conference course after this one?

Gloria: Yes, if the instructor was in — in my sight.

... No, that's not entirely fair, because I think once the bugs are worked out, then it would be okay, so yeah, I probably would.

Loya: Either way, regardless of where the instructor was at?

Gloria: Yes. ...

Loya: ... Would you recommend video-conference courses to your friends?

Gloria: I don't know that I would recommend, I would not deter them if it came up or if it was part of a course, I wouldn't — you know, tell them to run away screaming, but I don't know that I would say specifically go look for a video-conferencing course.

Loya: Would you take another video-conference course after this one?

Ann: Oh, sure.

... Yeah, I think I would because I think you could get a hold of a lot more instruction you wouldn't normally get —

... — if they're — say they're — I don't know, in Toronto or something and you'd never be able to get down there, so you'd be able to get a hold of a lot more information from people who are really high in the field.

... Particularly in the course you're taking, so I think that's a good idea.

Loya: Okay, would you recommend video-conference courses to your friends?

Ann: Oh, yeah.

... Why, I think for that reason that I just mentioned — ...

... If you're — think of meeting people over the screen but you — and for me, thinking of taking a course in [Site A], I keep looking at people and wondering if maybe I'll meeting them in person one day.

... And you never know, if you're working in that field, you will meet up with them ...

... Sort of like in an extended way.

Some students qualified their statements to be dependent upon the course content. It seemed that many students would not be willing to tackle a course with a technical or scientific content base. These students also remarked that a video-conferenced course would still be their second choice over a traditional course.

Loya: Would you take another video-conference course after this one?

Julie: Depends what.

Loya: What, you mean the content of the course or —

Julie: The type of course.
... I wouldn't take a science course with video-conferencing.

Loya: No, why?

Julie: Just for myself, I find sciences much more difficult, I need a person that I can grab after class. ...

Loya: Okay, and would you recommend video-conference courses to your friends?

Julie: Yes.

Loya: ... Why?

Julie: Well, I guess it depends on course again, but if it's not accessible via another mode, yeah.

Loya: Okay, so it's sort of your second choice?

Julie: Oh, yeah, it wouldn't be my first choice, no.

Loya: Would you take another video-conferencing course after this one?

Marsha: I would, but it would — I think it would depend on the course itself. This one there's not a lot of work to it — well, there will be like for assignments, but we don't take a lot of notes it seems in class, but a

course that there's tons of notes, we just took a Physiology course, I think that would be tough.

... But I guess it would depend on how we were saying before — and how the instructor sets it all up.

... Yeah, I think it would really depend on the instructor.

Loya: Okay, would you recommend video-conference courses to your friends?

Marsha: I would, I would definitely tell them the pros and cons of it, of what I discussed, but the whole idea of being able to take a course that's — you know, in a different city, and to be able to get credit for that course and —

... so if that's the — if that's the only way that they can take a course I would suggest it, but otherwise I would say if you can take it here in [Site B]. I'd recommend taking it here.

Loya: Oh, okay, so that's sort of a second chance sort of thing, second — first choice here —
... second choice there.

Marsha: Yeah, that's right.

Other students stated that they simply do not have a choice, the next course in their program is offered using video-conferencing and it is required.

Loya: Okay, would you take another video-conference course after this one?

Leona: I have no choice.
... The next one is also required.

Loya: Would you take another video-conference course after this one?

Pat: Not by choice, but I do have to take another one.

As mentioned in the literature review, everything takes a little longer using this technology and this time factor may be a reason for the minimal establishment of a rapport for this course. Tammy, a Site B student, adds

that it is not only the intimidation with the technology that has acted to discourage the development of a rapport, but also the time element. That is, the fact that this course was a six week course using technology that was new to everyone involved.

Tammy: ... I know that there is a barrier between us and [Site A] because of the whole video-conference element and I know that — or I believe that if our course was longer duration, like if it wasn't a spring course ... it was a regular fall term or regular winter term, we would have had a better chance to become familiar with the whole concept of using the buttons and building a rapport with [Site A] and with the instructor.
... Being a short term thing, it was — it's kind of hard. I believe, it was not easy.

Tammy: Something again that — like either a fall term course or a winter term course, that way we could actually build a rapport. It seems to take longer to do that over — or with distance or over the T.V. or with audio whatnot. A course that's longer in duration would allow us to, like I said, build a rapport and get a feel for who's over there on the other side.

The video-conferencing element was certainly a factor in the failure to establish an instructor-student rapport. Students had no prior experience nor knowledge of this technology to fall back on in their struggles to ask questions or become comfortable with this equipment. Many of them appreciated the value of not having to travel to the site of instruction to take this course and liked having the expertise of a competent instructor. Nevertheless, they were accustomed to having a physically-present instructor and when this did not occur, the students engaged in more side chatter. They reminded me of a junior high classroom when the instructor had momentarily left the room; it became chaotic. The side chatter was, at times, unbearable even for those students taking part and thus, an effective learning environment was not evident.

Perhaps the fact that the students could only see the instructor on the classroom monitors and not themselves acted to have them feel as though the instructor could not see them unless they pressed a button. This was not the case, the instructor's small monitor primarily displayed a view of the entire distant site except when a button was pressed and the camera focussed in on one student. However, the students sat off to one side and toward the back of the classroom so the image on the small monitor was very poor. It was difficult for the instructor to see exactly who was doing what even if he had known their names and had been focussing most of his attention on that screen. Compound this with the fact that the students knew they could not be heard unless they pressed a button and side conversations became the norm.

Instructor's Viewpoint

A great deal has been said about the students' opinions, so it is important to share the instructor's viewpoint as well. This information was gathered from five separate instructor interviews four of which were during the semester and one other approximately one month after the last class. They will be described in chronological order so that the evolution of some of his opinions can be shown.

Although these results may be seen as partial, the kind of research I was engaged in placed me in the role of a participant observer (see Chapter III, pages 59 and 77) and as such, I was not trying to be completely detached. Subsequently, some readers may see some results as biased. However, the results were not biased because, in spite of my suggestions, the instructor still taught the course as he desired.

May 16th (Class #1)

Initially, the instructor was very keen and eager to try new teaching methods and really make this video-conferencing technology work to it fullest

capabilities. During this May 16th interview, which was the first time we met, he relayed some of his ideas and encouraged me to provide feedback and insights.

Instructor: ... My other thought was you could almost do this — it wouldn't hurt to have a couple of guest lecturers, like if we had [the audio-conferenced site] hooked up on video as well, what I would have wanted to do is have someone in [Site B], someone in [audio-conferenced site] and they could deliver a presentation or lecture on one topic area.

Loya: To everybody?

Instructor: Everybody, and I think that would bring a sense of their participating, so — you know, the lecturer in [the audio-conferenced site] is doing whatever — I mean, and I — I'm sure I could find an [established practitioner]

Loya: Yeah, right.

Instructor: I could find somebody who'd say, "Sure, I'll do a presentation on [a particular topic] because it's something we do every day and we have experience in it", and they could present that particular aspect of the course. I get almost a night off, I mean I'd come, but I wouldn't do a lecture.

Loya: That's an interesting idea.

Instructor: Yeah, well, I mean it's nice to have actually somebody who's — who can sort of sit and watch and — you know, give me comments or feedback as to how — techniques we should be using.

Loya: Okay.

Instructor: You know, 'cause it's useful. I have no idea.

Loya: Okay, well —
... I've never taught using it either, so — you know—

Instructor: Yeah, but maybe — you know, for your research here you're coming across things that we should try.

Loya: Okay.

Instructor: We can always experiment and see, I'm always available to do that.

Loya: Okay.

I took the instructor's cue and attempted to subtly offer ideas on how to learn student names. However, although he seemed to realize that this would be a good idea, he felt his efforts would be futile. There were just too many students and he didn't have any idea of who was in each location.

Instructor: They need to push the button so I can see the faces, and another thing, I'm never going to learn the names, never in a million years.

Loya: No?

Instructor: But how do I know —
... — I mean unless I say, maybe you should tell me who you are.

Loya: You could.

Instructor: I was thinking that, just tell me what your name is 'cause otherwise I'll never figure out who you are, I've got this class list but you don't even — the class list doesn't even say who's in [Site B] and who's in [Site A], it's a list of names.
... So how do I know?
... I have no idea.
... And I have no idea unless — unless they make some connection.

Loya: Well, I had one student here say that I'm — I'm not allowed to observe, so I can't keep track of anything that one person says from this site, so I had to find out who that person was when I collected these [consent forms]...
... Yeah, so ... not knowing names was a little bit [difficult] for me too, I thought —

Instructor: Yeah, yeah, well I think that's something we'll do next week, you know, when you're asking questions if you don't mind just tell us what your name is.

Loya: ... I think that would be helpful at least....

When the instructor was lamenting that the Site B students were not asking questions during that first class, I attempted again to encourage him to get to know their names. He shrugged off the idea.

Loya: That's why I think if you knew who was there —

Instructor: Yeah.

Loya: — you could maybe — you know, call specifically on some names or something, but that's kind of putting people on the spot too, but —

Instructor: Yeah, well, what you can do, you can do that to some extent if you have that style.

The instructor had taught this course previously and he had conducted it as a seminar. He explained how the class size was much smaller and interaction and discussions were prevalent. He had hoped this class, despite its size and the technological element, could operate in a similar manner. He wanted Site B to feel involved and connected. He was just unsure how to achieve this.

Instructor: No, no, I've taught it before, this is the fifth year I've taught it.

... The previous years were always in basically a small classroom or seminar format where there's maybe 15 people to 20 max, never more than 20.

... So it's more intimate and this is really a change, and it's a struggle to make it a more intimate type of thing. I mean I don't feel particularly connected with [Site B], but this group I do, because I see them.

... I don't see the [Site B] people too well, I mean—

... they — they need to move more to the centre so you can see them.

Instructor: Makes it more interesting, we just have to — you have to get — like this group seems okay in terms of questions, [Site B] is —

Loya: Oh, yeah, well one person.

Instructor: Stone faces.

He explained that the beginning of the course contains rather dry material and is not conducive to discussions but that as the course progresses, there should be more interaction and involvement on the part of the students. Making provocative statements was an idea he posed to stimulate class discussions.

Instructor: Well, what I've seen tonight, yes, I mean the best part, to me, is, I mean, when I get some questions. Hopefully I'll get more, so I mean I would have to make some — some outrageous statements I see to get people to talk —

Loya: To talk, spark their interest and —

Instructor: — and fortunately there's usually enough out there that I can use.

Loya: Sounds like it, sounds good.

Instructor: Yeah.

Loya: Well, that's all right, so you — you expect more interaction than this as we go on?

Instructor: As we go along, yeah.

Loya: That's good.

Instructor: I mean this is a — this is pretty introductory, it's fairly dry the first part is — you have to have grounding of how things — how it fits together.

He wanted to be accessible and available to the students. He had the post-secondary institution provide him with a computer complete with a modem for his home just so he could have electronic mail (e-mail) contact with

the students. It was a concern that phoning him would cost the distant students' money. Using a facsimile (fax) was another method of reaching him.

Instructor: In order to phone, they've got a long distance charge.

Loya: Right, exactly.

Instructor: Fax or e-mail's going to work best —
... I think will be very useful for this course.
... We'll see once they get my computer hooked up, 'cause they gave me a computer at home —
... to use for the duration of the course, but unfortunately it only connects to the system, it doesn't seem to give me access to e-mail.
... And so [a course coordinator is] going to come tomorrow to see —
... and fix it for me.
... Um, well we'll just have to see how that goes, 'cause I think it's fairly important, because I — I like the idea of saying gee, I can go home and maybe there won't be any in tonight but maybe tomorrow or the next day there might be an e-mail message and I can respond that way.

In this way, the instructor did encourage contact with the students. Although he made it fairly clear that telephoning him would not be a very good way to try and reach him due to his busy work schedule, he offered other means of contacting him through e-mail and fax.

Human interaction was a concern for the instructor because initially Site B was to have an in-class facilitator present for at least some of the classes. However, these efforts were not realized. Also, from this very first class, the instructor felt he should meet the Site B students and teach a class from the distant site.

Instructor: And as long as we could do the course from [Site B] in that evening's lecture. You see we were going to be — were going to have a physical sort of — instructor in [Site B].

Loya: Oh, I didn't know that.

Instructor: It didn't work out, the person we had asked decided not to, but the idea was that we'd get a [professional practitioner] up there to be a resource person, he wouldn't necessarily have to come to every lecture, but they would have a person in [Site B] they could call to ask questions and so on.

Instructor: Well, it might be useful for us to seriously think of me to go up one, two times, that might do the trick.

Loya: That's recommended in the literature.

Instructor: Is it?

Loya: That you go at least — at least one time or — or — you know, what you can, they don't ever really say ... how much to go.

Instructor: Yeah, well in a six week course, I could see doing that twice.

May 25th (Class #4)

By the second interview on May 25th, the instructor had been approached by students locally outside of class to ask him questions but the e-mail still had not been used. The instructor was still considering a trip to Site B but had not yet fit it into his schedule. I had mentioned his potential trip to the Site B students and they were very receptive to the idea.

Loya: Okay, have any students made any contact with you outside class time —

Instructor: Yes.

Loya: — with questions they have?

Instructor: Yes.

Loya: Okay, how have they done that?

Instructor: By walking up to me in the corridor mainly —
... — no one's called me —

... — I haven't had any e-mail as yet.

Loya: Okay — are you still considering going up there?

Instructor: Yeah, I don't know quite when yet.
... It sort of depends on my own business schedule but —
... If I can — ideally if I can time it with going out to meet — with my day job —
... That would be ideal. But I think even if I can't, I'll still try and make the effort to clear my schedule so I can go for at least one class.

I indicated to the instructor that the Site B students said they would ask more questions if he was to instruct a class from their location. I was attempting to encourage this trip. The instructor responded that more questions may still present themselves as the course progresses but it did not seem to me that this was actually happening.

Loya: Yeah, they thought that would be a good idea up there, they said we'd ask more questions.

Instructor: I'm sure they would.
... As it goes on, that might mean many more questions coming.
... Yeah, I mean when — as we got more to talk about, more things arise as people think about it.

May 30th (Class #5)

The first class of technical difficulties was on May 30th. I spoke with the instructor immediately following that class. He could not help but comment upon the technological problems before I even had a chance to ask him, but he very quickly changed the subject into a more positive point of the technology, that of the visualizer.

The visualizer is a piece of equipment much like an overhead projector except that it does not require transparent images. Any item or document, either three-dimensional or otherwise, can be placed under the document

camera and its' image is relayed through the video-conferencing system for all sites to see at the push of a button. Later, he did get back to the issue of the technology and the fact that he felt it was rushed into place for this course.

Instructor: The course goes better when the system works.
... I mean I don't mind no video, but I would have been interested to hear what [Site B] had to say.
... I missed the presence of the [Site B] students, I think we would have got more discussion, we would have got more out of it if — if we had had the opportunity to hear them. I mean they hear me but I don't hear them.

Instructor: I find that — that one thing that is of use with this system here is this visualizer. In fact, I'm using, like a blackboard —
... as a blackboard view situation, that seems to work out okay, it does give you a variety of ways of showing different things.

Loya: Mm hm, well at the end you were able to just show them some of those exact references ...

Instructor: Yeah, like what colour is the book they are looking for so they can go find it.

Loya: Exactly, yeah, I think that makes a difference. So generally, what are your thoughts, how do you think the course is going and — well —

Instructor: I think the course is going fine —

Loya: — with the glitch?

Instructor: — I mean the glitches will come.

Instructor: But yeah, I mean, it's not — it's not like a big problem, it — the only thing is that — the only critique I would make is that we may have rushed this a bit, the technology wasn't ready, I know they had difficulty getting the course all set up.

I asked about student contact through e-mail and there had been none.

Loya: So has anyone contacted you via e-mail yet?

Instructor: No.

... And I've been checking fairly regularly, maybe two days may go by before I get to it, I try to keep up with it but I can't do it every night, I want some time to see my wife.

I decided to bring up the issue of button-pressing and it was interesting to hear that the instructor had not noticed any difference between students asking him questions outside of class for this course and outside of class for his previous courses. From having spoken to the students, their perspectives were different than the instructor's remarks.

Loya: I find that here, I think they're still shy of pushing the button.

Instructor: They are.

... And — yeah, I mean —

... I get lots of stuff in the hallway or at the break, I don't know if that's different than being in a physical lecture situation.

... Lots of people don't ask questions in front of a lecturer/professor in the lecture theatre, but will come up to them afterwards. What difference is there?

... They're still shy about doing it.

... Or shy about asking a potentially stupid question or a student might be embarrassed.

Loya: I think that's it, yeah, but [Site B], well, at least as long as you're here they don't have that opportunity.

Instructor: Right.

Loya: So they either have to get over their shyness or —
... forget the question or —

I attempted to emphasize his point that students might be embarrassed to ask a question. This led to further discussions about travelling to Site B to teach a class. The instructor began to plan his trip and I encouraged him.

Instructor: I haven't done this yet, but I'm thinking next Thursday of having them fly me down there and do the course from there. Theoretically.
... It would be interesting to see each class ...

Loya: Right, yeah, come back that night after. Yeah, well I know they used to have lots of flights anyway between [Site B] and [Site A].

Instructor: They still have.
... But even if you have to plan to stay overnight, again it's not a major problem, to stay overnight once. ...

Loya: I think the ... [Site B] students ... would really enjoy that you were there, you know, at least just to meet you sort of thing.

Instructor: Probably.

I wondered if the instructor had started planning the logistics of the student presentations particularly from Site B and again I offered a few ideas. The instructor seemed unsure of his plans at this stage and, by asking questions, I was trying to encourage him to think about the technological details a little bit more. He had obviously thought about making sure the students were comfortable with the assignments but not with the use of the technology.

Loya: How are you going to do the [debate simulations] in [Site B], ... are they going to come up to the — there's a desk like this — you know, there, that they could do their presentation from and then they'd have use of the visualizer and all that, or are they going to do it from —

Instructor: It depends on what they need, if they wanted to use the visualizer, they'd have to come up to the desk and learn how.

... It's not that difficult, but what I actually contemplated was that they'd simply push their button —

... speak from their chair and having a time limit, it is very rare that people speak that long — seven minutes is a long time, ten minutes is a long time.

... After all, it is an oral presentation and some people don't like those so it'll be over really fast.
... And they make their presentation, and then the next person simply pushes their button and if it is necessary, we simply cut back sound and —
... time's up, time for a new set —
... we have a lot of people to get through and 20 minutes each, so if it's really — 20 minutes each —
... So you can only do 3 groups an hour.

Loya: Right, right, and that's with no break between.

Instructor: That's with no break between, so fortunately nobody speaks that long. I prefer teams of four because it logistically works a little better. If you have 16 people —
... That is four teams of four —
... you can probably do that in one night.

Loya: Oh, okay. Is that how you're going to do it, like all one — all [Site A] one night, all [Site B] or —

Instructor: I certainly think it would be more interesting to alternate.
... And give everybody a say, not say this team will do it on this date.

Loya: Okay, so they're going to be — they'll know what day and whether they're first, second, third, fourth or whatever on the day —
... ahead of time, it's not going to be called upon?

Instructor: No.

Loya: Okay.

Instructor: I will develop some sort of schedule.
... And what I'm now — what I'm now thinking is probably we'll have the last two lectures of the course for in-class presentations. In the past I've sort of reserved the last lecture for clean-up, talking about the exams and papers and so on. I think I better do that the second last Thursday —
... that gives them the whole week, so to speak —
... so that we have taken some time to make sure everyone is comfortable — (emphasis added)
... and we've had time to re-check things.
... So the last two, the last week we'll do

presentations, or I may — depending on how it's going I may spend three sessions doing presentations and spread them out a bit and put course content in as well.

... Depending on how it works. It's such a large group.

... It's 37 people between [Site B] and [Site A]. ...

... It doesn't give a lot of time to do it.

When the technology was inoperative during class time, the instructor used this time to talk to the students individually and in small groups to determine their presentation topics and the members of each group. The instructor did not know the students by name and I wanted to ask him about this in our interview after the class had ended but as I did the equipment began to squeal loudly and ultimately the technician requested that we leave the room. Nevertheless, the instructor did have a chance to relay the same sort of message as in the first interview; that is, the class is too big to ever get to know their names. This interview ended as we left the room.

Loya: Right, okay. And just one other thing I was wondering — (INTERFERENCE) — one other thing, just wondering when you were going through their names and asking them about their — their topics, was anything else going through your mind at the time?

Instructor: Yeah, basically.

(INTERFERENCE)

Instructor: Yeah, I was saying that I really can't get to know a class this size. You can always remember names and they can wear name tags, but there's really no opportunity for them to tell me who they are. At least in a seminar, I'm pretty quick to get to figure out who everyone is. ...

Technician: I'm going to have to ask you to leave ...

June 13th (Class #9)

On Thursday, June 8th, the instructor travelled to Site B and taught the

course from that location. I was very interested to hear his perspective of this experience since I was not there with him. He commented that he had a greater understanding of the Site B students as a result. Also, he had forgotten some of his notes in Site A but found that unlike the Site A classroom, the computer in the Site B classroom was operable and even connected to the Internet so he was able to access his notes in this manner. He was thrilled as he relayed this occurrence to me in this interview as well as the July 31st interview.

Loya: I'm interested to hear how you thought it went in [Site B]?

Instructor: It seemed to go fine, I think they were pleased for me to be up there and I find it a different experience. The room is different. I now know exactly why they cluster where they cluster.

... Actually the computer in [Site B] was working so I could access some of my notes through the Internet —

... as I was lecturing.

... I'd left some of it at home by mistake, when I realized in their little computer was working, I just went through NetScape —

... and connected up with the World Wide Web and got my course material.

A little later during this interview, I asked him again about his trip to Site B. Primarily I wanted to discuss the greater amount of questions which were asked by the Site B students than had happened previously. They had been noticeably more interactive and I wanted to know the instructor's opinion on this matter. The instructor shared this perception and stated that he felt the trip was very valuable because these students were able to experience the human element which had been lacking for them.

Loya: ... Okay, and I was just wondering too if you think that you know the students better, if it was helpful to go to [Site B]?

Instructor: Oh yeah, it was very helpful.

- Loya: You think?
- Instructor: Yeah, I mean they were more responsive — if I had to do this again I'd say gee, maybe the second lecture you should to go [Site B], at least two trips— ... to one of the alternate sites.
- Loya: Two trips for a six week course?
- Instructor: Yeah, I would think so, I mean you can't do it too much otherwise you — what's the point, but it certainly doesn't hurt to be there at least once and probably twice.
... Sort of at the beginning and the end or in the middle or something, just to get acquainted with —
- Loya: Do you think that has anything to do with their asking questions today —
- Instructor: Yeah —
- Loya: — the fact that you were there?
- Instructor: — I think it broke the ice a bit and —
... Yeah, I'll agree, they saw I'm a real human being.
... It makes a difference. Certainly there were more questions there, and more questions tonight and they get used to asking them.

The main reason for writing this section, Instructor's Viewpoint, in a chronological manner is to demonstrate how some of the instructor's opinions changed throughout the progression of this course. For instance, during the last interview, he stated that he felt that button-pressing, and the technology as a whole, had little impact on the lack of questions being asked of him by the distant students; however, after having visited their location and personally spoken with them, his viewpoint was altered. He saw that they were not "stone faces" as he had called them during the May 16th interview but rather a very energetic and inquisitive group.

The Site B students literally provided an onslaught of conversation in

the form of questions and comments during but specifically outside of class time. The instructor even remarked that he did not get a break.

Loya: ... They seemed to bombard you with questions at the break?

Instructor: Yeah, they did, yeah, yeah.

Loya: I noticed.

Instructor: Well, I think it's — it makes a difference, I mean a lot of people are probably hesitant to ask questions on video for the same reason, it's like being in public but they come up to you afterwards.

Instructor: — asking me questions and such, but what I don't think they realize is that means I don't get a break.

Loya: Yeah, I know, I noticed that, you didn't get one there.

Instructor: Didn't get one, that happens increasingly, I noticed that of course, that increasingly as the course progresses, you don't get breaks at all. You just have to —
... have a healthy constitution.

Still, the e-mail had been rarely used by this time and the instructor once again noted the underuse of this mode of communication. He really found this puzzling.

Instructor: The only thing that no one seems to be doing, no one's using the e-mail.

Loya: No?

Instructor: I had one question.

Loya: Really.

Instructor: ... Yeah, I was surprised, I mean it's there, they all got accounts.
... And I think — just nobody's using it — unless messages aren't getting through but I have no reason to think that.

... I find this odd, I mean it's just an under-used aspect of the course. It could have been used more.

The upcoming student presentations were the next topic of discussion. The instructor had compiled a list of which groups were presenting which topics but he had not yet determined who would present on which day. I was anxious to see everyone using the technology and these presentation assignments were forcing the students to actually test the waters. The instructor noted the value of having this kind of multimedia experience.

Loya: Okay, and sounds like everybody's ready to go with presentations?

Instructor: Pretty well, I think it's all. I haven't quite got it all organized in my own mind yet.

Loya: Yeah, I wondered how [Site B] will do that.

Instructor: I've got everyone's list pretty well and I know just about what everyone's going to do, it's just a question of what day they want to do it.
... There's going to be some interesting ones, so.

Loya: Good, that'll — I'm interested to see how that works.

Instructor: Yeah, so am I.

Loya: Because that should use the technology, it should be — you know —
... puts everyone on. They don't have a choice, they have to be on.

Instructor: They have to — they have to be on it, they have to make their presentation. Increasingly people are going to be doing that. They are going to be communicating through audio visuals —
... connections, you know, it's all there.

July 31st

According to the July 31st interview, by the end of the course, the instructor estimated that he had received one e-mail, eight to ten facsimiles,

and eight to ten telephone calls from students. Overall, he emphasized that the e-mail was under-utilized. He did have some student contact, via fax and telephone calls, towards the end of the course when assignments were due. This contact generally had to do with individual circumstances rather than course content-related questions. The instructor seemed disappointed with that type of student contact.

Instructor: ... the other thing I'd change too is that although we all were hooked up on e-mail, that was rather pointless because nobody e-mailed me. One student did....

... In theory, it's a really good way of conducting this sort of thing, they could ask questions that way, but I don't think the students made use of that at all.

... Yeah, but they had a specific question so it was like they e-mailed me, I did a reply and they e-mailed me back and stuff, so —

... — that was fine, I mean it worked — as far as it went, it worked fine.

... It just wasn't — it was under-used.

Loya: ... so only one person, by the time marks had to be submitted, contacted you by e-mail, nobody even did after the course ended or anything?

Instructor: Nobody has, I check my e-mail every once in a while...

... You know, I've had — I had phone calls from students.

Loya: Oh, you did, okay.

Instructor: But not really que — it was more like gee, my paper's going to be late, and —

... that sort of stuff and — but that sort of contact, and some faxes.

Loya: Of more than just your pa — the paper, like questions?

Instructor: Yeah, well when peo — when people were preparing, it's — you know, it's is this topic okay, and they'd sort of write it out and they'd fax me.

... And I — out out of the clear blue I'd get this here fax from so—and—so and they'd say is this topic okay, so I'd fax them back or call them or at the lecture say, you know — have a chance to speak to them.

Loya: Oh, okay, so they were trying to get a hold of you a little bit, some.

Instructor: So they weren't — there was communication, they just didn't use the e-mail.

... They could have done it a lot easier, I think, using e-mail.

... And they would have got a response, and they actually would have got probably a more considered response —

Loya: Okay, so how many phone calls would you say you got approximately?

Instructor: Probably 10.

Loya: Oh, okay, and how many faxes about?

Instructor: Eight to ten in each case, roughly.

... Yeah, but it was really more towards the ass — questions about the assignments as opposed to —

... you know, I had this question and it came from your yesterday lecture and —

Loya: Oh, yeah, everyone wants to know about me and my particular instance, okay, all right.

Instructor: See, I guess it's the one — you really have to have some way because as opposed to traditional teaching methods, for me it's always been difficult 'cause I'm not part of the [post-secondary institution] community, I come from a different location so — but generally speaking a student could go and see the professor in their office, right, I mean most professors had office hours. Well, you don't have an office hour so e-mail I think was intended to substitute for that. It's just that, well, I mean they could phone me if they could catch me but —

... I have a busy schedule so they wouldn't

necessarily be able to catch me during normal business hours, and I may or may not be home at night depending on what I'm doing, so e-mail makes the best sense, I mean, but nobody used it.

The instructor commented on the use of video-conferencing for larger groups of students and his remarks clarify his viewpoint that lecturing is the only way to use this technology. In the June 13th interview after having visited Site B, he seemed to come to the realization that utilizing the video-conferencing technology inhibited students from asking questions, in this July 31st interview, his viewpoint seems to have reverted back to the belief that there was no problem in terms of students asking questions throughout this course.

Loya: ... how do you feel about video-conferencing in general now that the course is over? ...

Instructor: ... Well, I think I feel fairly positive about it. I'd do it again, I mean that's probably the best indication.

Instructor: I think the video-conferencing certainly has potential in terms of having a, obviously a larger class. Other aspect, I didn't realize quite how much work it would be from an instructor point of view. It's not so much the lecture which is — you know, relatively easy, you know, you can lecture to 20 as well as 60.

... They're not even in the room with you, and the ques — questions seem to come okay, that wasn't the problem. ...

The instructor observed that the content of the questions asked by the students in the different locations was site-specific. He indicated that their respective communities reflect the kinds of issues which are paramount to them and thus, they ask questions central to these issues. This was an observation I had not noticed, but in retrospect I am inclined to agree with the instructor.

Instructor: I — in terms of papers and exams, I don't think I noticed any real difference.
... In terms of how people responded to things in class, yes, there was a difference.

Loya: What did you notice that was different?

Instructor: Oh, well just in some of our debates and so on, but certainly — and I think this reflects the community that they live in. The [Site A] people on [a specific topic], for example —
... were a lot harder than the [Site B] people, and that — that may just reflect the community they — they live in.
... And perhaps in choice of subject matter, there might have been a difference, but not so much in terms of quality of work.

Loya: In what they choose to —
... ask you questions about? ...

Instructor: And very much that reflects local issues, like I did notice that in each location, something of local interest would come up.
... And it didn't necessarily apply to the others, but you could always turn it into a broader example.

Later on in this hour-long interview, the instructor differentiates between students asking questions and students engaging in discussion. He felt for this class the students did the former but not the latter. Also, he states that having in-class discussions is terribly difficult due to the technological limitations. The difference between two settings - conference mode and classroom mode - and the recommendations for their usage contribute to the lack of in-class discussion.

Instructor: — I have a fairly easy-going style and it's not don't just stand up stiff and lecture straight 'cause I try to encourage the questions. It certainly is easier in a — in a more — what's the word — intimate isn't quite right, but it — it's both formal and not formal, but if you're doing 20 people in a seminar type atmosphere, you do get questions a little bit better, a little bit more discussion.

... It was harder to get discussions in the class in

the video-conferencing. Yes, someone could ask a question, I could respond, but I don't think there was any occasion when someone sort of responded to the response.

... So there was no discussion per se, it was always question, answer, question, answer. But I mean someone might ask a question, I would give an answer and there would be a follow-up question, but it really wasn't conducive to class discussion so you missed that.

... That's one thing that's lacking.

Loya: ... what ... exactly ... is the difference between the conference and a classroom mode, and which one were you using all the time?

Instructor: I usually tended to use the classroom mode 'cause—
... it cut down on background noise, it just has to do with what mics are activated.

... If you're using the classroom mode, that means the instructor's mic is active, and then when they push their button, their ac — their mic becomes active —

... no other mics are active in the room.

... If you use conference mode, all the mics in the room become active because theoretically everyone would be speaking.

... And that gives you more background noise.

... So occasionally it was okay, I mean I would do it just to vary what was happening a little bit, but for the most part I had to use classroom mode, and as the technical people said, because you get too much background noise.

Loya: Okay, 'cause I wondered if that would have helped your getting increased amounts of discussion if they wouldn't have had to push the button.

Instructor: It might have but I think probably there would have been too many distractions because every time someone coughs or does something like drops a book or whatever, you hear all that, so I don't know if that would be as useful for that particular function.

Loya: Okay, yeah, I just wondered about that.

Instructor: Well, I — I thought about that too, 'cause I thought this is really great, just stick it in conference mode and several people could talk at once, so to speak, but I don't think it's a practical method that's workable —

... for this kind of format. I think the format you have to — you probably have to follow with this distance learning concept is fine, you know, the instructor gives information, students can ask the question, it's got to be sort of the camera focuses in and you ask your question, everyone can see your question and hear the instructor's response, or hear and see the instructor's response, but I don't — but I don't think it's probably a good idea for two or more than two people to be talking at once.

... Yeah, I think it's distracting, hard to follow and it's sort of — you know, it's bad enough when people speak at once, but when you lose that — I mean you can't have a hot and heavy discussion in class, really get into a topic because it's just not possible. It's going to have to be one after another.

Once again the topic of knowing students by name was discussed. The instructor recalled an incident where a secretary would expect that he would know any given student's name. The recollection of this story by the instructor along with his remark that knowing their names is not "essential" caused me to ponder his remarks from previous interviews that typically, in smaller classes he came to know his students' names. I wondered if in a smaller class he came to know their names by choice or by chance.

Instructor: In fact I actually think there's so many people it's harder to place faces and names.

... And so about the only way I could tell from — anyone from a particular location is by the phone number.

... In the class list there's a phone number, well obviously if it's not a [Site A] exchange, they're not from [Site A].

Loya: -----
Okay, I'm just wondering, you mentioned in another interview that we had, that you typically know the names of stu — seminar students?

Instructor: I try to. ...

Loya: How did — how would you do that in a seminar, like how did you get to know their names?

Instructor: Smaller number.

Loya: Smaller?

Instructor: Yeah, and frankly, it's sometimes it's deductive reasoning on my part, there's two males in the class, I can guess — you now, they're either Bob or John and it just takes —

... a couple of guesses and you get them, and then sometimes students will — will come up and of course if they hand you a paper or an assignment or whatever, you know pretty well who they are.

... So it's like any situation, and I would generally try and find out who they were, it's a lot harder in the — proximity of more students. ...

Loya: Would it help if you had the list like with the different cities on it, would that have made a difference?

Instructor: Yeah, yeah, it probably would have helped to know who was in — and then again you could make some informed guesses. It probably would have helped to say look, you know, I'd like to get to know everyone's names, and it's not always possible, but perhaps when you ask a question you could say, you know, I'm Joe Smith and this way start to —

... to know. On the other hand I **don't think it's essential either**, I mean — (emphasis added)

... But where — where I find it — what'll happen is I will go, particularly in [Site A] where the — where the students and faculty in — ... [our] department, are fairly close knit, and I'll drop by and pick up my mail or something at [this post-secondary institution] and the secretary will come and say oh, well, you know, Shelley was at your lecture last night and was commenting on it, etcetera, etcetera, and she expects me to know who Shelley is, or you know — you know, Charlene has got this project and what do you think about it, and I'd say oh, yeah, Charlene can call me. Well, Charlene may call me —

... I may recognize the voice kind of thing, but I don't necessarily recognize — you know, unless I

can sort of ah, okay, I remember that face kind of thing, but if she hasn't asked a question in class I won't know who the heck she is, but they do sort of assume that you know them and you kind of don't.

... There's no way unless they introduce themselves.

Loya: Yeah, exactly. Yeah, I wondered about that if you did — if you did attendance in a seminar or not or —

Instructor: Well, this is [post-secondary] level, I don't care if they attend or not, it's up to them —

... so you don't — can't really take attendance.

... I suppose I could do that the first couple of lectures, I could just say who's here, but I always thought they might think I'm taking attendance and—

... You know.

After this interview, I came to the conclusion that the instructor made no extra efforts in any of his classes to get to know the students by name. In the instances where I'm sure he did recall names it was likely a chance occurrence rather than a specifically learned action. Therefore, this is simply part of the instructor's teaching style and the fact that he did not learn their names in this video-conferenced classroom was likely not related to the fact that this was a video-conferenced course. Nevertheless, it still was reflected in the lack of rapport with the students.

Although questionnaire statement number five, asking whether the instructor writes useful comments on assignments, could not be answered by the students since no assignments had been returned by that time, the instructor remarked that the class was too large to write detailed comments on each paper. He also noted that individual attention could not be provided to so many students. Both of these comments also indicate components of rapport which were not met.

Instructor: Well, yeah, it's hard to do — it's hard to do a good job or — or pay a lot of attention to individual students when there's 37 more of them also requiring

individual attention.

... Like they're not going to get a lot of comments on their papers and so on, beyond "good paper".

When asked what he might do differently if he were to teach using this technology again, he responded that he would increase his use of the visualizer.

Instructor: I was making use of that electro-television camera which —

Loya: Visualize it?

Instructor: — visualize things, I'd do that, I'd do that more.

Instructor: Yeah, ... I enjoyed the visualizer.

... I'd — you know, I have some better things prepared, that was experimental, we didn't know what we were —

... I was just pleased that they had something like that. ...

As mentioned earlier, there was a rule that no food nor drinks be brought into either video-conference room. The reason for this was that a spill on one of the buttons would cause expensive damage to the mechanism. This rule was not adhered to nor enforced in either site. I asked the instructor about this regulation.

Loya: ... I noticed they didn't obey, I guess is the word, the rule of the food and the drink in the rooms and that sort of thing.

Instructor: You couldn't really blame them for that.

Loya: ... I can understand the point of view of if you spill on the buttons or whatever, but I don't know what you can do about that.

Instructor: I wouldn't enforce it 'cause I had to disobey it too, I mean it's nice to have a little can of juice or pop or something at your lectures, your throat gets dry.

Loya: ... but — well, in [Site B] though it was big subs and—

Instructor: Well, sure, because there was nobody there. ...

During the last presentation, the video-conferencing automatically disconnected, since the class time had expired, and the last two Site A presenters were cut off. There was no closure to the course nor to the presentations. This was partially due to poor planning on the part of the instructor, as he somewhat admits, but he figures the disconnection was a technical problem. He does explain how he would attempt to plan more rigid presentation timing in future courses.

Instructor: ... I don't know that I would do the class participation thing again. It worked okay, but I wasn't certain — I wasn't totally happy with —

Loya: Those presentations?

Instructor: Yeah, I mean the students did well —
... I thought, but I wasn't totally happy with how I organized it.
... It doesn't mean I wouldn't do it again, I guess.

Loya: What part didn't you like of how you organized it, like what —

Instructor: It seemed a bit cha — little too chaotic for me in the sense that I didn't know 'til right at the very end who was doing what in what order. I think I would probably change that and make it be a little more rigid and say all right, you're getting — you know, this time slot and maybe give myself a little bit of leeway because the crazy thing about the system, when it's shut down and it's the very last lecture, I mean I couldn't even say goodbye, have a nice summer —
... 'cause it was all gone —
... just the way the —

... the technology worked, but aside from that, which is a technical problem, I would have preferred to have it a little more organized.

Loya: Okay.

Instructor: Just to get a better handle on who's doing what —
... and that I'd change but I'd probably maybe pay
attention to it earlier —
... and make sure we have it done right ...

I found it interesting that this last interview ended as the first one had begun, the instructor relayed several excellent ideas for teaching using this technology. It is just unfortunate that he did not implement any of these. However, I do realize that any one of them would have required a great deal of extra work to plan and execute. It was as though we had come full circle but did not actually get anywhere in the process. Nonetheless, I believe they are wonderful ideas that would serve to provide the instructor with a break from speaking and also stimulate discussion.

Instructor: ... The system — the capabilities of the system are really great because you can run it and get a videotape if you can find a videotape. I don't know if I had — if I had a graphic on the computer whether I could project that onto the television system, but I think you could do that too.

Loya: You can play a videotape through it? ...

Instructor: Yeah, it's videotape machine itself, television anyway —
... so if I wanted to, you know, I could incorporate video if there was something like that.

Loya: Yeah, it's funny because that's something in — in my research that they discourage doing because it's a waste of money supposedly, because you could just as easily send [Site B] a video and they could watch it without having the link going.

Instructor: Exactly, I don't disagree with that, but perhaps I'm thinking of not — not a half hour video.
... But if — if there was — not going to apply in this type of course, but in a Physics course

supposing you're taking motion or that sort of thing, you could have a two minute segment, a videotape which illustrates a scientific principle or a formula or whatever —

... and you could incorporate that in your lecture.

... Just like you do — I mean you watch "The Nature of Things" on T.V. —

... you've got David Suzuki and they switch to a little two or three minute segment.

... You know, a bat flying in slow motion or whatever.

... Same sort — it's not half an hour —

... it's a minute, okay, well, theoretically —

... I could do that.

Loya: Right, yeah, okay, that might be an idea.

Instructor: But again, I don't know that I'm going to — well, I can think of things, I mean I can think of — if I wanted to really do interesting class things, get together an actor to play a role and they could come on and be a — in terms of fact situation, you could have a couple of little video tapes that people are playing the role of different individuals in a — involved in a [particular] issue —

... and then everybody in the class sees it and say okay, now this is your exercise. In essence you're interviewing these people, you're listening to what they say, take the information, put that information together in a way that you're now their [practicing professional] and you've got to take their — their side of it and — you know, present it to an advocate and —

... I mean you could — might be kind of a fun —

Loya: That's a good idea, that would give you a break and they would be busy.

Instructor: Well, that's right, so they — I mean it wouldn't be long, it'd be two minutes, an actor saying this — you know, their little story, they did this and — you know, they couldn't get wheelchair access to there and all the complaints about it and all the different little things happened to them on that particular day, and then after, here it is, and then students decide what you think is important from that, and you're now the [practicing professional] arguing based on that, and that's your facts.

... Take the [concepts] that I've been teaching and here's your fact situation, apply it.

Loya: And I bet you would get some discussion too.

Instructor: Yeah, you could really structure that and get a lot more —

Loya: That's a good idea.

Instructor: But I'd need — to do all that I'd have to basically say fine, well, I need a leave of absence from this job to —

... to put together the course materials, although if I was on a full time professor or — you know that sort of a situ — working full-time in the [post-secondary setting], I mean you have more time to do that sort of thing, you could do some really interesting things.

Loya: Oh, yeah, I think that'd be a great way to utilize the system.

Instructor: Yeah, there's lots of potential there. I think they could put stuff on CD-ROM. I've noticed interest there in the medical profession, I was reading some articles that they can do that with surgical techniques, and you can have a surgeon perform a particular procedure and — and film all the different steps and then put that on a CD-ROM, and a student can watch it or a group of students could watch this professor do it. I mean it's exactly what they were doing —

... and you could stop, start, and focus in —

... zoom out and all the neat things you can do on CD-ROM. That could be really useful I think for learning that sort of technique. You can adapt it to other tasks as well for —

... for [topic]-oriented things or even for [other] things, it tends to be more — you know, sit down, tell me your story and developing the facts and then trying to put stuff together. ...

Instructor: Yeah, but a lot of it you have to simulate in real time like real life events.

Loya: Yeah, if you did a different one every year you would — you'd have a repertoire all built up.

Instructor: Yeah.

Loya: It would be so hard, but exactly, the time it takes. Well, that's great, that's super.

Instructor: But anyway, that's for another day.

In comparing the instructor's viewpoint to the students' opinions, there are some commonalities. Overall, they both agree that the instructor attempts to answer questions effectively, and that he attempts to interact with all the students except when the technology is inoperative. He encourages relevant in-class dialogue, but, as some students commented, he admits he is occasionally off-topic. He justifies this as an attention-getting technique, a teachable moment and an attempt to encourage discussion. Eventually the instructor simply gave up on trying for deeper in-class dialogue - something other than the question - answer - question - answer format. He and the students agreed that he focussed on lecturing rather than creating dialogue and discussion.

Ultimately, the instructor not only agreed that he does not know the students by name and that he found it an overwhelming task but also he felt that this is not "essential". In this respect, he and the students concur. From a participant observer's viewpoint, the fact that names were not known was a major factor in the lack of a rapport between the instructor and these students. From the students' and the instructor's viewpoints, they did not see knowing student names to be an issue.

Despite not learning student names, the instructor was concerned with the human element of video-conferencing and demonstrated this by travelling to and teaching from Site B. He and the students were therefore somewhat

aware of the pros and cons of this technology. The instructor had ideas of incorporating guest lecturers at the other site to help those students to feel like members of this course, although this was not arranged. He even came to the realization that better timing and more planning is needed because the presentations were barely completed by the end of the course.

Students were undecided about the accessibility of the instructor but the instructor revealed that there were very few attempts to contact him at all by the end of the course - only one e-mail, and eight to ten faxes and telephone calls respectively. Therefore, it is reasonable that the students could not adequately comment on this by the time the questionnaire was administered.

A primary difference in the remarks of the students and the instructor was that the instructor was very unaware of two main student concerns: the uncomfortableness of asking questions and the amount of side chatter in class. Just after his return from Site B, he seemed to realize that the technology was inhibiting questions but by the last interview, he reverted back to equating the lack of questions to mere shyness or embarrassment as in a traditional seminar. Although, the students continually stated to me that they were apprehensive with using the technology. The side chatter was never really discussed with the instructor. The one time I attempted to discuss it, he replied that the background noise was likely due to having had the equipment set to conference mode. I then relied upon my observations and the student comments with regard to this problem.

The most promising indication that video-conferencing has a chance to be a successful method of teaching and learning is that the majority of the students and the instructor would utilize this technology again for their respective roles. Certainly some students were adamantly opposed to ever having to learn in this manner again, but most were willing to be involved in

this type of undertaking once more. The instructor was willing to venture into video-conferenced teaching another time.

Researcher Observations

I observed each class from either Site A or Site B (as per Table 1 in the Methods chapter). Where I sat in each classroom was determined primarily by the access to an electrical outlet for my laptop computer. Thus in Site A, I sat at a separate table located next to the instructor's counter. From this vantage point, I was able to see the Site A students directly and clearly while the Site B students were indirectly and unclearly visible through the video-conferencing screens. The camera view was very distant and broad in scope and thus, viewing the distant students was very difficult. Therefore, while in Site A, my student observations were concentrated on Site A, whereas in Site B, my student observations were focussed on Site B. In this latter site, I sat directly in the middle of the room. I was front and centre to the cameras and thus to the Site A participants, but since the Site B students sat off to one side of their room, I was sitting to one side of them and not in the middle of their group.

E-mail

The researcher observations basically recap the points previously stated, but, in some cases, also add a little more detail and analysis of some of the reasons behind these opinions. For instance, the e-mail was not a well-used method of communicating with the instructor. Perhaps a reason for this is that during the first class, when he put his e-mail address on the visualizer, it was very difficult to read. It was small and blurry. At this point, barely one-half an hour into the course, the students were very unsure of the procedure for making comments or asking questions and nothing was said although I doubt if everyone copied it down.

Food and Beverage Rule

The “no food and beverage rule” was clearly posted on each entrance into the video-conferencing room and had been stated and explained during the start of the first class by one of the course coordinators. After the break in the first class, the technician asked one student to take her drink outside. Just then, the instructor brought a drink into the room and said to the students, “They said the buttons were sensitive -- they didn’t say anything about my control panel.” This was an outright defiance of the technician and of the regulations for the room and the instructor’s actions set a precedent for the remainder of the course. This is an example of how role modelling can work in a negative manner. From this point onward, food and beverages were repeatedly brought into the classroom. In Site B, there were even large submarine sandwiches along with the usual chips, pop and coffee. I understand the expense of this equipment and I believe it is the instructor’s role to enforce these types of rules. I believe that class breaks are provided specifically so people can have a snack, or dinner if they so desire, but this behaviour must stay outside of a video-conferenced classroom with this type of equipment. The Site A technician did not enforce this rule with the students again.

Just before the second-last class, a Site B technician scolded some Site B students for having food and beverages in the video-conference classroom. When other students were later warned of this, they did not care. They continued to eat their submarine sandwiches as they had previously.

Video/Audio

During the second class, while I was at Site B, I noticed the image of the instructor was very poor. He was a shadow on a light background. Ron, a Site B student, even commented that we can’t tell if he has a moustache or not.

During the break, I spoke to the instructor over the system and informed him of this problem. He attempted to rectify the problem but with no luck.

I also asked if the Site B students could have an image of the Site A students on one of their monitors but this was impossible. It was an either see-the-instructor or see-the-students situation but not both. Since, two Site B students asked me, during the break of the second class, what the Site A students see on their screens, I asked the instructor if they might be able to see themselves on their Site B screen. There was no possibility of Site B viewing themselves either, which I think might also have helped with the side chatter and other off-task behavioural problems.

The image of the instructor was poorly centred. The top of his head was at the top of the screen and his chest and the top of the tall counter formed the centre of the picture. A properly centred view would have been nicer to look at notwithstanding the darkness problem.

By the start of the third class, Ron commented that it appears they have put more light on the instructor. I noticed too that the instructor's face was much clearer. They had installed a spot light over the instructor's counter and the situation was greatly improved. At the end of this third class, the instructor called out, "Loya". I responded. He said, "Notice the extra light on me, I'm boiling down here!" It was very nice to see some action taken as a result of a complaint.

The audio is poor when the instructor strays too far from the microphone by leaning back on the wall or by walking to one side of the counter away from the visualizer. The Site B students have learned how to control the volume from their end but this only helps if the instructor is near the microphone. Apparently when I spoke over the system to distribute the consent forms, I was loud and clear.

Classroom and Conference Modes

At the start of the second class, the instructor informed the students that he was going to try classroom mode. Later on, just before he had hoped to encourage classroom discussion, he announced that he was switching to conference mode. These statements were a nice gesture but the students appeared to have no idea what he was talking about. These video-conferencing terms had not been defined nor explained. In this conference mode, the instructor's voice sounded very distant and echo-filled. There was a bit of feedback but only briefly. Background noises from Site A were evident but they were not distracting. I happened to be at Site B, so I informed those students that conference mode meant he could hear everything and that all the overhead microphones were activated. At first the students seemed concerned but then their side chatter continued anyway.

Technology

The technology was not always consistent. The Site B large screen was inactive during the second class but began the third class in operation. However, throughout the third class, it would switch on and off in an annoying manner.

Typically the instructor ended the classes early, so often the technology was disconnected prior to 8:45 pm. When there is fifteen minutes left in the class period, an audible beep is sounded to warn the instructor to wrap up the class. This is meant to save money in connection time with those instructors who do not end their classes promptly and is an excellent idea. Generally it was not needed for this course, with the exception of the last class during the student presentations.

The fifth and sixth classes were riddled with technological difficulties. For the entire fifth class and the majority of the sixth class, the Site B

students could see and hear the instructor and Site A students but could not speak to them. Meanwhile, the Site A students could not hear the Site B students nor see them. This totally isolated the Site B students from the instructor. During my visit to Site B for part of the sixth class, I was informed that by the end of the previous class, there were five students remaining in the Site B classroom. Those who left, did so out of frustration.

While the technician was busily trying to connect the sites, he suggested that the instructor continue his class with the Site A students. The instructor did not because he did not want to have to repeat information. Instead, he used this time to ask students individually and in small groups their presentation topics and the members of their groups. He did not know their names as he spoke with each of them at their desks.

The Video-Conferencing Rooms

The Site A technician controlled everything to do with this distance education course. He was responsible for the linkage between the two sites, turning the lights on and off at both sites, and controlling the room temperatures at both sites. For the first two classes, the room temperature was comfortable in both sites, but Site B, for the third class, was unbearably cold. I put my jacket around my shoulders and two other students put theirs on totally. At the break, I spoke with Sandra while she was outside in the sunshine trying to get warm. She had been cold also.

A Site A student complained to me that their classroom chairs were terribly uncomfortable. I sat in one momentarily and agreed. They are molded plastic attached to the desks and they swing in and out. I realize that having them attached means that students can't move them around and thus, the camera angles will remain correctly set. However, this should not be at the expense of student comfort, especially for a three-hour class period. The Site B

chairs are more comfortable and are detached.

The instructor had been complaining to me before the fourth class that the Site B students sit off to one side of the room. He even asked me to attempt to get them to move during my next Site B visit. At the start of this class, he decided to ask them to move into the centre of the room. They responded that they wanted to stay near the door. Hence, they did not move.

The Site A students moved toward the centre of their classroom. According to the instructor, the fact that the Site B students sit to one side really annoys the Site A people thus they have moved. Is this modelling perhaps? Although, it is really futile since the Site B students primarily look at the instructor not the Site A students. Site B students probably never noticed.

For the eighth class, the Site A room had been altered. A blue backdrop had been hung across the wall behind the instructor's counter and more lights to shine on the instructor were added. These dramatically improved the picture for the Site B students.

Submitting Assignments

The last few minutes of the third class, the instructor spoke about the assignments and a Site B student asked how the distant students should submit theirs. The instructor was completely baffled and said he would have to get back to her for the next class. In the fourth class, the instructor provided both his fax number and his business mailing address for students to submit assignments. Ultimately, the students became responsible for the timely submission of their respective assignments. Some chose mail, others used the fax and at least one couriered her assignments.

Humour

The instructor used content-related wit to gain acceptance with the students and as the student opinions indicated, this seemed to help them feel

comfortable in the course. An example occurred when the instructor described an incident where a senior citizen attempted to bring a prostitute into an old age home to illustrate a course content-related issue. They all laughed.

In-Class Discussions

As for actual in-class discussions, they never materialized any further than simply students asking questions of the instructor. In one instance, the instructor spoke for a long time and developed a scenario and then he asked the students to show hands as to how they would have responded. Very few people responded. About four people in Site B raised their hands. I could not see the Site A response. The Site B students seemed to be paying attention to this case but yet they wanted to be informed without interacting. I didn't get the impression that this response was a fear of the technology but instead I felt it was just a group of students who were used to being passive students in a lecture situation. The instructor had began lecturing so the students correspondingly became passive.

Visualizer

As the instructor mentioned in the interviews, he really enjoyed having the use of the visualizer. He experimented with it using hand-writing and typed text in a variety of colours. He sincerely wanted to find the most easily-viewed technique. He used it mainly as a blackboard- or overhead projector-substitute. One time, during the second class, he explained a process and added green arrows to the notes previously written in red. Another time, the black text was too small to be legible. A third time, the text was typed in uppercase and in bold, probably Chicago font, which was easier to read. A couple times, he used the visualizer to display newspaper articles. Also, it was used to show the correct spelling of terminology and other vocabulary. Another use was to actually display two possible reference books that students might

look for in the library. He certainly determined that the visualizer is a very versatile machine.

During the fifth class when the audio and video link was only one way to Site B, at about 6:30 pm, the instructor used the visualizer in his lecture. He left the visualizer on while he continued to lecture. At 7:00 pm he was still lecturing and the visualizer was still displaying a newspaper article which by this time was no longer related to the content. The Site B students had no audio nor video link and hence they were unable to tell the instructor of his error. The Site B students' frustrations became more intense. I realized the oversight but could not find a break in the instructor's lecture to inform him. Finally, at about 7:05 pm, I notified the instructor but he disagreed. He said, "they can see me actually." However, I knew this was not correct. Eventually he went to use the visualizer again and returned the monitor to a view of himself. The next class, I asked a few Site B students about this incident and it, along with the technological difficulties, influenced some students to leave early.

A couple of Site A students did their presentation from the instructor's counter and used the visualizer. They had only received brief instructions from the instructor during the break of the previous class, so I commended their efforts. Certainly there were a few errors when they left on the visualizer and kept talking or when the print was much too small to read on the cartoon but it was an excellent effort, more than any other students had attempted.

Human Element

For the eighth class, the instructor made a surprise visit to Site B to teach from that location. Even the technician was unaware of this planned trip and he had already made the connection from Site A. The technician informed the instructor how to connect from Site B so that the instructor's

microphone would be activated.

As the Site A students entered the room to find the instructor was at Site B, they were disappointed. One student commented, "Traitor".

Yet another remarked, "No way, that's not allowed."

"I guess now we'll get to see what it's like," was another statement.

Student Presentations

The students were wondering how they would be presenting using this technology so Jody asked the instructor during a break. She commented that she and her group members do not really like the idea. The instructor was not entirely sure how it would work either but he attempted to explain as best he could. There were to be three parts to the debate format: a seven minute pro side, then a 10 minute con side, followed by a three minute pro side rebuttal. Teams of either two or four must agree on a topic. The instructor added that there is no reason why a Site B person could not be teamed with a Site A person. This did not occur probably due to the logistics and costs of working together on a topic.

After the break in the 10th class, several students were missing. There were only five left at Site B and it appeared as though several from Site A left as well. The one student told me that everyone left to work on their presentations since they were to begin the next class.

The last two classes were devoted to student presentations. There were a total of five presentations during the 11th class, and seven during the 12th class. This was not an equitable split and did not allow for each presentation on the second day to be 20 minutes long. In fact, the last team was cut off when the technological link automatically disconnected.

The presentations were fine in terms of content but not very dramatic nor well-presented overall. The students were required to press their button to

present, the camera would focus in and each person would speak. They did not have to leave their seats. Most students just read a prepared statement without looking up at the camera and without voice projection. The instructor requested that prior to speaking, each person introduce his- or her- self so he could provide a grade and because it is proper etiquette. At the end of the presentation, the non-presenting students were asked to vote based on what was heard not on what they already knew. After the first presentation, very few were prepared to vote and the instructor remarked, "You have to pay attention, you are the [Assembly]." From this point onward, the students were prepared to vote but this did not mean they had paid attention. In fact, after a couple of presentations, the instructor forgot to request a vote and a student would remind him so a vote was taken.

I was observing one of each of these classes from each site. While at Site B for the first day of debates, I was astonished at the level of attention and concentration paid to the presenters from their own site. There was no side chatter and I could hear my computer keyboard clicking as I was typing. Ron was still writing notes but the quietness of the room was unusual. However, as soon as the presenters from their own site were done for the class, the side chatter and off-task behaviours returned with a fervour.

There was somewhat of a rivalry between these two sites. Perhaps the Site B students felt more kindred to other Site B students rather than to the Site A students. Therefore, the respect for presenter was extended to their Site B counterparts but not to the Site A presenters. Although, it may also have to do with the fact that those people in Site B did not feel that they could be seen nor heard very effectively anyway through this equipment. With regard to this discord, just before and immediately after one presentation where the instructor presented against a Site B group, a boisterous couple of

Site A students repeatedly chanted, "Go [instructor] go!" while pumping their arms. During this same presentation when a Site B presenter paused in the middle of quoting the name of a book, a Site A student quipped, "The Big Book." and a great deal of laughter came from Site A. Also, an unsolicited remark written on one of the questionnaires states that Site A is, "the best one!"

Occasionally, after a presentation, the instructor would provide suggestions for the future presenters. After the first group read their prepared statements without even acknowledging the audience, the instructor encouraged the presenters to "make eye contact with the people you are trying to persuade". The next suggestion he made was to speak slower. Each presenter was talking much too fast for the audience to understand the content. Also, the instructor reminded students to "think on their feet" a little more, especially for the rebuttal, rather than reading from a prepared statement.

These first Site B presenters were very conscious of establishing eye contact. One team member looked up at the camera while speaking and successfully created the illusion of eye contact; whereas, the other looked up at the monitor of herself and was unsuccessful since it appeared as though she was looking away from the audience. After this debate, the instructor commented that eye contact was being made. This was further evidence that the illusion of eye contact could be created through video-conferencing. Another Site B group asked where the camera was located to ensure they made eye contact with the audience. A few students attempted to speak more candidly rather than reading from their notes but most were not very successful.

In these two classes, the instructor accidentally disconnected the students four times. Fortunately, the disconnections were always at the start

of the presentations prior to the students' speaking.

Asking Questions

The very first question of the course was asked by Jody in Site A. At first she raised her hand during the lecture, but then the instructor reminded her to press the button. She did but also quickly covered her face in embarrassment and asked, "Did it work?" I nodded yes to her as she peeked out from behind her covered face and our eyes met. She asked her question and did not seem so embarrassed by this time.

Next the instructor began using the visualizer and he wrote down a Latin expression. Then he displayed some more typing which was too small to be read so the instructor read it to them so that it could be taken as notes. The second question posed was asked by a student who did not use the button. This Site A student asked what was written in the brackets following the writing. The instructor responded that he would get to that in a minute. A little later in that first class, a Site B student asked a button question. She was confident as her face became front and centre on the large monitor. Immediately thereafter, a Site A student wished to ask a question.

The instructor said, "push the button".

She replied, "forget it!", and went ahead with her question anyway. The instructor responded to her question.

There was another question from Site A and the instructor said, "you have to push the button or you won't be heard very well." Then there was another Site A non-button question.

The instructor attempted to persuade the students to ask button questions but they were nervous and in the one case very adamant about not using the button. Interestingly enough, only moments later, the lady who had previously said "forget it" was pushing her button to ask a question. Those

students brave enough to try using the technology were slowly becoming used to it. Jody was now asking another button question in a confident manner. By the second class, she was still asking button questions but her voice was not as confident. It was weak and difficult to hear. However, I recognized her efforts since she was so shy initially. Actually, by the fourth class she was no longer shy in asking questions and making comments while using the button.

During my Site B observations for the second class, a Site A student asked a non-button question. Ron leaned over and was compelled to tell me that he could not hear the question. The instructor did repeat the question before responding but somehow it just wasn't the same. From this point onward, I totally understood how the distant students' felt when this occurred and it did happen regularly. Therefore, if I seem to be dwelling on the issue of asking questions in this video-conferenced classroom, it is because I completely empathize with the students whom it affects. It simply does not help in the creation of an effective learning environment; rather, it creates unnecessary bitterness and resentment over who has the privilege of a physically-present instructor.

When students did ask button questions, the instructor was fairly understanding and tried not to leave the student's image on the screen for longer than necessary. Once they have asked their question, he shut off the picture of them as he responded. This is a considerate action that many students appreciated.

I also noticed the delay between the time the button was first pressed and the time the instructor chose to respond. Most often, he finished his current remarks before responding and the student anxiously and nervously awaited having his or her face projected on the large monitor. It was a tense moment for students and probably felt incredibly long. In one case of a non-

button question, I noticed the instructor purposely made the student wait almost as a form of punishment for not using the button in the first place.

On the days when the technology was inoperative, the Site A students automatically resorted back to raising a hand to ask a question. The technician even came in and reminded the students to continue using the button because the Site B students can still see and hear the people of Site A. Nevertheless, they refused and the instructor repeated the question before responding so as to compensate for the students' actions.

For the one class that the instructor taught from Site B, the Site B students asked several non-button questions and the Site A students found out just how frustrating that rudeness could be. Nevertheless, upon the instructor's return, they reverted back to their insensitive habits again. They blurted remarks and asked non-button questions.

Perhaps had the instructor insisted on having everyone try the buttons by introducing themselves or some other introductory activity, this initial fear could have been eliminated at the start. As the course progressed, those who had not yet used the button became the ones who never used the button. This practice became unmanaged by the instructor. Non-button questions served to increase side chatter and off-task behaviours simply because the students could not hear the questions being asked so why should they bother to pay attention to the responses given even if the instructor reworded the question as he attempted to do.

Side Chatter and Other Off-Task Behaviours

In terms of students' off-task behaviours, side chatter was probably the most pronounced. It became a serious problem which occurred mainly in the absence of the instructor, but also to a lesser extent in his presence, and affected the learning achieved by the students. Throughout my observations,

there are countless occurrences of side chatter. Some of the more interesting accounts include a Site B student accidentally pushing the button while engaged in side chatter. The result was that her face came up on the screen and initially she didn't even notice. She quickly apologized. The instructor used this opportunity to display humour while attempting to have the Site B students sit in the centre of the room. He remarked, "Well, at least we know there are people in [Site B], none of whom sit in the middle of the room I might add." Only the Site A students laughed.

These side conversations occurred at the beginning, in the middle, and at the end of classes. It didn't seem to matter. For instance, the third class began at 6:08 pm, but the Site B students were still talking to one another at 6:15 pm. It appeared to me that they had not yet begun to pay attention. Another time, a Site B student packed up her books at 8:35 pm and talked to the student next to her for a few minutes before leaving the class early.

Other off-task behaviours included passing notes, reading various material while the instructor was lecturing, selling raffle tickets, and even getting up and walking across the room to engage in side chatter. The fact that these were adult students engaged in these types of activities shocked me. Despite the fact that this conduct was distracting, what about getting the value for your tuition dollars and striving for convocation? After all, this is a core course. I simply had difficulty fathoming these disturbances. Had I been a student in this class, I would most certainly have said something, but as a participant-observer, I felt this was not my role.

I noticed a couple of students rereading my consent letter during class time. One of them underlined something and pointed it out to the person next to her. I do not know what was so worthy of comment. While the instructor was lecturing about a particular case, I noticed some students reading that

case instead of listening. They obviously had not read it for homework. In the 10th class, Christine was busily selling raffle tickets and other students were purchasing them.

At Site A, even in the presence of the instructor, three ladies were actively engaged in passing one looseleaf page of doodles and notes between them. Eventually, the first page became full so two pages were being circulated. They began this action around 7:45 pm and continued relentlessly until 8:45 pm. For one full hour they were giggling and sliding these pages between them as each would add more scribbles and giggle some more. This is a prime example of behaviour which was distracting to surrounding students.

As further evidence that at least one Site B student was aware of the fact that their group does not pay attention, as the second class ended, Ron approached me and said to type, "class wakes up." Which is exactly what I typed due to its accuracy.

While the instructor was teaching from Site B, the Site A students were extremely talkative and unengaged in the lecture. One lady was even planning her camping trip by looking through a Alberta Motor Association CampBook from 6:40 pm to 8:15 pm. Another lady was browsing through a needlepoint catalogue called *Sweet Scriptures*. It appeared to me that these students were not paying attention to the instructor for a good portion of this class time.

During the last class, the Site B students were extremely off-task. So much so in fact, that it was distracting to the Site A people, including myself. Their loud voices and frequent outbursts of laughter were heard in the middle of several Site A presentations. I do not think the Site B students realized just how audible they were. I noticed through the monitor that several people were turned around at Site B and more background noises and laughter could be heard. The instructor was aware of this behaviour because after one outburst

he made eye contact with me and after another he commented to me, “ they’re just laughing.” I did not think it was appropriate because nothing humorous had been said by the presenters.

The final presentation was not conducted from their desks as everyone else had done. These students used the visualizer and spoke from the instructor’s counter. It was the most interesting and well-organized presentation. However, in the middle of this debate, a Site B student was heard to say, “This thing’s on. We’re on the Web here.” It seems a student was at the instructor’s counter in Site B and the computer was running on the World Wide Web. The student who was presenting at Site A stopped momentarily and asked what was on but the instructor told her to continue due to time constraints. This was one instance when the behaviour of the Site B students interfered with effective teaching and learning.

The instructor has an obligation to all of the students and he needed to notice, acknowledge, and act upon this problem with side chatter and other off-task behaviours. Preventative maintenance, in the form of commenting on these actions when they were first initiated or stating student expectations during the first class to cite a couple of ideas, would likely have helped to avoid such improper disturbances as these before they occurred.

Major Findings

Several recurring themes have emerged from the data collection methods. All of these are central to the establishment and perceptions of an instructor-student rapport. They affect those components which have been determined to be a construct for rapport. Some of these areas are major to this video-conferencing case study and will also serve to assist future distance educators. It is these central elements which compose the major findings.

Rapport

The main result of this case study is that only a minimal rapport was established between the instructor and his students and more disappointing for this researcher was the fact that the perception on the part of the students and the instructor was that this scant amount of rapport was sufficient. The students believed that the relationship that existed in this course was simply as good as could be expected either because they held low expectations of the video-conferencing classroom, or low expectations of the program in general.

The themes which paramount in this case study were: the lack of name knowledge on the part of the instructor and the students' perception that this was acceptable; the technological problems; the question-asking procedures; and the amount of side chatter and other off-task behaviours. All of these themes have compounded to suppress the existence of an instructor-student rapport in this course.

Lack of Name Knowledge. To recap, knowledge of students' names was not seen as important to this instructor. He did not think it was essential, therefore, he made no attempt to learn their names. However, this lack of name knowledge was not to be placed solely on the shoulders of the instructor. Students also conveyed the idea that it was not important for the instructor to know them by name.

The ramifications of this include a lack of an interpersonal touch or human element that could serve to make learning more effective. Also, having knowledge of student names may even have discouraged some of the off-task behaviours which were distracting other students. After all, if you know that an instructor doesn't have a clue who you are, then it makes it a great deal easier to pass notes, chat with your neighbour or read a travel brochure, since your grade can't be affected if he doesn't know who you are nor could you be

embarrassed by having your name called out. From this participant observer's point of view, it really is important, even at a post-secondary level, to know the students by name. Often, students require employment references or references for graduate studies so in these cases an instructor requires a greater level of knowledge about the student which would certainly include knowing his or her name.

It is also important that students assist in having their names known for the same reasons. It is likely that they do not want to be part of a disruptive class, they do want a physically-present instructor so they appreciate the human element and certainly at some future date they will require a reference from an instructor.

Technological Problems. This course was laden with technological problems and this served to frustrate and bewilder all of the students due to the loss of class time but particularly the Site B students due to the loss of instructor-contact. Certainly problems will occur due to many reasons, but the frequency of these problems can be diminished with proper maintenance. Also, the handling of these technological problems is crucial to the acceptance of the Site B students by all the Site A participants.

It is this latter point which requires discussion. The instructor chose to continue the class with the one-way audio and video linkage to Site B. The Site B students were completely isolated for these classes. To compound this problem, the instructor accidentally left the visualizer on for an extended time period while he discussed another topic. Then, to make matters even worse, the Site A students asked questions without the use of their button despite having been told by the technician that the buttons were working properly. Therefore, these questions could not be heard by the Site B students and they could not see who was asking them. The instructor attempted to repeat the

questions prior to responding but this was not the same as hearing the questions directly.

Overall, these classes with the technological problems were very poorly handled. I agree that the course could go ahead with a one-way link but the instructor needed to make some extra special efforts where Site B was concerned for these classes. For instance, button-pressing could have been enforced. The visualizer error should not have occurred or at least he should have apologized for its occurrence. Reminding the Site B students of how they could contact the instructor to ask any questions would have been helpful. The point is that the Site B students felt left out and they were. Hence, all but five left the class.

Asking Questions/Button-Pressing. As mentioned repeatedly, the technology required a button to be pressed so that questions or comments could be heard by all. This is a fact. This is how the video-conferencing equipment best operates since conference mode relays too much background noise. So therefore, there was no excuse for the students to not press the button to ask a question. The instructor needed to train himself to ignore non-button questions and eventually students would realize if they wanted to speak, the button had to be pressed.

Naturally, students were shy to speak in front of 37 people while having a head-shot blown up on the large monitor. They required practice with this technology in a non-threatening environment. During the first class, time for this could have been provided perhaps in the form of paired or singular student introductions.

Human Element. It was deemed by all that the trip to Site B was a valuable experience. The instructor learned that the Site B students cluster to one side of the room to see the smaller monitor's view of Site A more easily and

the instructor got a chance to meet the Site B students. The Site B students were able to speak directly to and meet the instructor. The Site A students were able to experience being the distant students. This was an excellent part of this case study. The Site B students enjoyed it immensely; however, they should have been notified of his impending arrival rather than surprised. The technician was not prepared and a couple of Site B students had other commitments that they would have tried to rearrange had they known of his plans.

In a future six-week course, perhaps two trips could be made to the distant site. It would be even more worthwhile if one of the trips could be very near the start of the course. In any case, teaching from Site B was a superb learning experience and should be kept as an option.

Side Chatter and Off-Task Behaviours. These unacceptable behaviours should never have gotten so out-of-control. These were adult students and I expect more from a much younger class. The occurrences of side chatter even to the point of walking across the room while the instructor was speaking were too numerous to mention. Similarly, students were often reading other material. It is those actions which disturb other students which are of the greatest concern. Reading silently to oneself or even passing a note quietly between two or three people is tolerable but the outright laughter, chatter and giggling was unbearable. One student even recommended that future classes have individual headsets for those who wanted to concentrate. This might not be a bad idea but the instructor should have been paying attention to his individual monitor of the distant students and curbed these actions before they escalated to the point of disrupting students in the other site.

The teaching and learning in this video-conferenced classroom was not as efficacious as it could have been. Some of the components which make up a rapport were definitely present, but they were not strong enough to establish an adequate convivial and harmonious environment. Regrettably, there was only limited rapport for this case study.

CHAPTER V

DISCUSSION

The results of this case study show that overall a rapport suitable to provide an effective teaching and learning environment was not created. However, some of the components of this construct for rapport were established. If we can learn from our errors and continue to improve our efforts, then this will have been a valuable experience.

The attitudes demonstrated by both the instructor and the students toward video-conferencing can be altered in this form of educational delivery. In this case, the precedents of how these classrooms operate have not yet been set. Students are not planning to attend a lecture nor an interactive seminar, they honestly do not know what to expect with video-conferencing. Thus it is up to distance education instructors to set these standards to include discussion, interactivity, knowledge of names, technological experimentation and a human element in an environment which is technologically functional to a satisfactory degree.

Several recommendations can be made from the findings of this case study to ensure the same errors are not repeated but also to expand on the efforts which were successful. Potential readers must decide individually if this particular case study has enough elements of similarity to their unique situations for any or all of these suggestions to be utilized. It has been my intention to provide enough detail and background to this case study, without jeopardizing promises of confidentiality, so that other distance educators or video-conferencing coordinators could decide just how useful this information is to their distance education program.

Name Knowledge

The instructor and the students need to realize the value in having the instructor know student names. First and foremost, I believe, and other authors concur (Kitchen and Hughes, 1992; Minnesota Department of Education, 1988; Smaldino and Herring, 1995), that the instructor must attempt to learn students' names and remember to use their names when speaking with the student.

Video-conferencing coordinators should provide instructors with methods and techniques for learning names. Some of these might include: asking students to introduce themselves or one another as an introductory activity (or using another ice breaking activity), having name placards pinned on or placed in front of each person (making sure the print is large enough to read through the monitors), having students always introduce themselves prior to speaking, providing the instructor with a class list which includes student locations, and using seating plans for each location. Kitchen and Hughes (1992) state that each student be addressed daily by the instructor. They suggest having index cards with students' names or a seating plan with names in bold print taped underneath the television monitor for the remote site (Kitchen and Hughes, 1992). Another idea to address each student during each class is, when asking questions, to go through index cards with each student's name on them after making sure that any absent student's name is removed from the deck (Minnesota Department of Education, 1988). To reinforce that all students are members of one class, students should be referred to by names rather than locations (Minnesota Department of Education, 1988; Kitchen and Hughes, 1992). The particular method used must reflect the individual style of the instructor and the instructor must have a choice in how he or she learns the students' names.

Meanwhile it must also be emphasized to the students that it is imperative that they become known by name. This task may be a little more difficult to accomplish. Some of the reasons I have heard as a student to encourage me to make sure my name is known include: it is easier for an instructor to poorly grade or even fail someone they do not know, someday you may need an employment or graduate studies reference from the instructor, or an independent study or graduate studies supervisor. In any of these cases, it is much easier if you are known by name.

Instructor Accessibility

At the beginning but also throughout the course, the instructor should remind students of the best ways to contact him or her outside of class time. Office hours could be set and/or a fax number or e-mail account could be provided. Ho (1994) and Souder (1993) have shown in their studies that maintaining instructor-student contact outside of class time is an important component of a successful distance education program. They both emphasize using e-mail to achieve this goal (Ho, 1993, Souder, 1994). Perhaps even a toll-free telephone number could be arranged for the distance education department with an operator who would forward any student calls to the appropriate instructor. If feasible, another idea may be to arrange instructor-student appointments over the video-conferencing equipment to meet and discuss assignments or other course-related information. It really doesn't matter how it is done just that any distance educator must be available for student contact just as a traditional instructor would.

In this case study, e-mail was to be the main way to contact the instructor outside of class time. However it was underutilized. Perhaps the instructor could pose questions over the e-mail or have every student register

in a list serve to encourage initial student use. Also, throughout the course, more questions could be posed or assignments given where the students must respond using e-mail. This may serve to encourage their use of this method of contacting the instructor when they have a question, comment or concern to discuss. Smaldino and Herring (1995) suggest having students use e-mail to ask questions that they are afraid to ask in class and then the instructor would, without divulging the student's identity, discuss these questions at the start of the next class.

Human Element

“Humanizing is the process of creating an atmosphere which focusses on the individual and overcomes distance by generating group rapport” (Smaldino & Herring, 1995, p. 23). Even though the main purpose of video-conferencing is to teach students from geographically separate locations using interactive audio and video linkages, the human element must not be completely eliminated from the distant site. Using humanizing techniques lets students know that their needs are important (Smaldino & Herring, 1995).

The instructor should travel to the distant location to at least meet with the students but to preferably teach the course from that location. Abbot, Dallat, Livingston & Robinson (1993) concur and they found that visits to the distant students' site by the instructor at the beginning and end of the course, for face-to-face contact, were helpful and necessary. The Minnesota Department of Education (1988) agreed that instructors should visit the remote sites and recommended that policy allow for at least one site visit per semester. For this six-week course, the instructor suggested two trips would have been more beneficial than just the one that was made. Unlike the surprise visit that occurred in this case study, the students should be informed

of the instructor's planned visitation dates so they, in turn, can prepare questions. The first of these trips should be as early in the course as possible, preferably for the second class, to establish a connection with the distant students.

Off-Task Behaviours

The side chatter and other off-task behaviours which occurred on a regular basis was enough to disrupt student learning and effective teaching. It is my strong impression that course effectiveness was undermined by the side chatter, especially for the Site B students. This was not dissimilar to the conclusions of other authors. According to Lacina and Ledoux Book (1991, p. 158) students in the remote site of broadcast television classroom commented that "it was easy to turn off the instructor and become inattentive." Thus, this is not a totally uncommon phenomenon. Massoumian (1989) states that gaining and maintaining student's attention is probably the most vital and yet the most difficult to achieve in distance instruction. Others also state that remote students are easily distracted in a distance classroom (Barker & Platten, 1988) and that the instructor must strive to manage these behaviours (Egan, Welch, Page & Sebastian, 1992). Treagust, Waldrip and Horley (1993) found that a high level of student concentration is required for distant students to understand the course material and Kitchen and Hughes (1992) state that there is no doubt that distance learning requires more attentive listening on the part of students. The instructor should constantly check on students to be sure they are paying attention and ask them questions to be sure they are understanding the material (Kitchen & Hughes, 1992).

The absence of a face-to-face instructor combined with other environmental factors, over which the distance educator has little control, may

interfere with learning (Massoumian, 1989). Some suggestions, made by Massoumian (1989), to minimize these off-task behaviours by getting and keeping students' attention include: pointing out the significance of a subject; providing concrete examples of genuine uses of the subject; initiating discussions on the topic; delivering instruction with vigour and enthusiasm to keep students alert and interested throughout the class; and maximizing interaction between all class members to reduce silences in the course delivery. However, contrary to Massoumian's ideas, the instructor for this case study was providing concrete examples and this clearly was not sufficient since the side chatter and other off-task behaviours persisted. Perhaps a combination of Massoumian's suggestions might have proven more effective or if the instructor more actively engaged the students in the learning process, these off-task behaviours likely would have subsided.

The Technology

Students and the instructor should be comfortable with the technology. Prior to the start of the course, the instructor for this case was provided with about an hour of instruction on the use of this equipment. This was not enough. Even by the end of the course, students were accidentally being disconnected. Some of the technological problems could have been avoided by providing the instructor with more direction prior to the start of the course. The instructor could have been instructed in a workshop how to use the technology including the computer, visualizer, monitors, conference and classroom modes etc. Also, instruction as to appropriate clothing and colours to wear could be included. Knowledge is power if it is used correctly. The instructor should be provided with more video-conferencing knowledge than just the basics so that empowering oneself as well as the students could become a

natural extension of the course. Even the presence of a technician constantly monitoring the course is not a substitute for the instructor to have learned the correct techniques for using this equipment.

The students also should become comfortable and knowledgeable about using this equipment. Abbot, Dallat, Livingston, & Robinson (1993) emphasize the importance of student induction into the use of video-conferencing and that the hands-on use of equipment is particularly valuable for learners. The Minnesota Department of Education (1988) recommends training students to help with the technical operation of the system. As students did in the study by Ho (1994), they should be expected to communicate using the technology on a regular basis by scheduling mini-presentations, debates, question and answer periods, and any other interactive activity appropriate to the course. Class participation evaluation schemes can be very influential in this regard.

The student presentations for this course were an excellent idea. They simply needed to incorporate the technology to a greater extent and the students should have had more practice with the technology before having to be graded on a major presentation. Also, they might have been persuaded to present from the instructor's counter and thereby have accessed the visualizer and other equipment. Smaldino and Herring (1995) even suggested the use of a debate-type presentation format, similar to the one implemented in this course, as an instructional tool.

In using the visualizer, large printed or typed text in some colour other than black seemed to be most easily viewed by the students. Massoumian (1989) and Smaldino and Herring (1995) both emphasize the importance of legible letter sizes and they agree that the use of colour assists in highlighting important information. Also, instructors should remember the versatility of this machine. Any object, whether it be two- or three-dimensional can be

shown to the students over the visualizer. Instructors and students can be inventive and creative in using the visualizer.

Also, the instructor could have done some sort of introductory activity to demonstrate the correct usage of the video-conferencing equipment and the necessity of using the button prior to speaking. Once the reasons behind using these buttons were explained and demonstrated, then the button usage could have been enforced.

If the video-conferencing classroom has rules posted or otherwise stated, the instructor should be sure to enforce them and act as an appropriate role model for the students. More often than not, these regulations are made for very good reasons. As a professional, one should have respect for these reasons and for the person who constructed them. It is only proper conduct. The Minnesota Department of Education (1988) emphasized the importance of clearly stating rules and adhering to them throughout the course.

It is expected that the technology for the course is suitably functional and that technological problems are not the result of poor maintenance nor mismanagement. Technological problems should be handled by a qualified technician as quickly as possible to avoid class delays. The technological difficulties which occurred in the study by Barker and Platten (1988), due to weather interference, equipment malfunctions and the inability of facilitators to properly operate the equipment, served to diminish student participation in the class. In the article by Lacina and Ledoux Book (1991), the biggest frustration expressed by students was the time involved in dealing with technical aspects of the course. For this case study, the technician was monitoring every class from the control room and was promptly available when problems arose. This is exactly how it should be yet it did not eliminate technical problems. Some of the problems which occurred were not

preventable; they resulted from a poor switching connection through the lines. Other problems, as mentioned previously, were preventable by having more thorough instruction for the instructor. In any case, had the technician not been present, a bad situation could have quite easily become much worse.

The Course

As an educator planning a video-conferenced course, the instructor is challenged to be organized, and over-planned rather than under-planned. For this study, the instructor should have planned, more thoroughly, the student presentations because the final team on the last night of the course was automatically disconnected, since the class time had expired, before their presentation was complete. There had been no final words by the instructor, no closure to that evening class nor to the course as a whole. Planning and organization, particularly with regard to time, is truly crucial in the distance education environment.

These conclusions are similar to those of other authors. Barker and Platten (1988) and Smaldino and Herring (1995) concur that instruction must be highly organized, planned and professionally delivered. Kitchen and Kitchen (1988) comment that teachers who are not well-planned for teaching over the system cause the system to be destined for failure. Other authors (Abbot, Dallat, Livingston & Robinson, 1993; Kitchen & Hughes, 1992) also state that instructors are required to be extraordinarily well-prepared to teach in a distance education classroom. Ostendorf (1991, p. 21) writes, with underlined words, that "Unless you are willing to invest in the planning time required to become an effective instructor in this medium, you have no business teaching at a distance."

Instructors should realize that there may be technological difficulties

and they should be prepared with an ulterior agenda. They should also be prepared for the downtime of a system (Kitchen & Kitchen, 1988). It does take longer to operate a course through video-conferencing so allow more time for activities which may or may not have been used before in traditional classrooms. Allow for breaks and set-up time between student presentations, for example.

When considering whether to teach a particular course using video-conferencing, future distance educators should look first at the instructional strategies typically used in that discipline. If lecturing is a frequently-used format, then it is important to consider that video-conferencing is an interactive medium and if such interaction is not suitable to that particular discipline, then do not attempt to teach that course using this technology.

Submitting Assignments

The instructor should arrange a method or methods for the submission of student work and include these plans in the course outline. Kitchen and Hughes (1992) recommend the use of a courier if possible. For this course, the instructor had not decided how assignments were to be submitted so some were faxed, other mailed and still others couriered. Once again, organization and planning is the key to a smoothly-conducted distance education course. Haughey (1993) emphasizes that the students appreciate having a course outline which includes clear directions for student assignments.

Students who mail or courier their assignments should be cautioned to keep a copy for their own records as well as the courier receipt just in case the assignment does not arrive. The best idea, again only if feasible, is to provide a prepaid courier at the distant class on the due date so that students are not burdened with the extra costs of delivery.

Conclusion

This case study has been primarily a qualitative research study which has emphasized rich detail and expansive descriptions. I was a participant observer in this study and as such I did not strive to be completely detached from my subjects. From the point of view of this participant observer, there was evidence that some elements of the construct of rapport were achieved but other, more critical components, were not fulfilled. From the point of view of the students, those in Site A felt interested and involved, for the most part, while those in Site B felt isolated and alienated. Therefore, these Site B students, and the Site A students also when they were the distant site for one class, resorted to side chatter and other off-task behaviours to keep themselves occupied. Also, this course was riddled with technological difficulties for a variety of reasons.

These recommendations were derived from a questionnaire, interviews and extensive observations of one six-week course operating between two sites. They are meant to assist distance educators and video-conferencing coordinators in planning and executing a similar type of course. However, efforts were taken to include vast amounts of detail and to create this case study environment in the mind's eye of the reader in hopes of benefiting others in their distance education endeavours.

The creation of a better video-conferenced classroom, one that provides effective teaching and learning, begins with awareness. By being aware of the relationship between the instructor and the students and by acting in a manner so as to improve that relationship to the point of mutual harmony and cooperation will serve to promote a rapport. Having such a rapport will, in turn, create a more effective teaching and learning environment. This is the

goal that this study is attempting to help future video-conferencing educators to achieve.

I concur with Souder (1993, p. 51) that, "Distance education is a complex socio-psychological innovation that needs additional empirical evaluation." Future studies could address what it is that constitutes an effective distance education student and the necessary constituents of a successful distance education experience so as to develop the foremost distance education program.

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APPENDIX A

VIDEO-CONFERENCING
QUESTIONNAIRE

Researcher - Loya De Clercq
Master of Education Student at the University of Lethbridge
Winter/Spring 1995

PURPOSE:

The purpose of this questionnaire is to study effective teaching and learning within the particular setting of the video-conferenced, distance education classroom.

DIRECTIONS:

Use either a pen or a pencil to complete your survey.
If you are taking more than one video-conferenced class, please respond to the statements for the class in which you received this questionnaire.
All of your responses will be held in confidence.

PARTICIPATION VOLUNTARY.
COMPLETION CONSTITUTES CONSENT.

For the following statements, please check the box under the heading which is most appropriate. Check only one response for each statement.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>Undecided</u>
1. The instructor calls me by name.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructor is easy to contact outside of class time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The instructor has adapted the course to accommodate mine and other students' background and life experiences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The instructor answers questions in a manner that I can understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The instructor writes useful comments on marked assignments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The instructor demonstrates concern for mine and other students' needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The instructor encourages us to be responsible for our own learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>Undecided</u>
8. The instructor makes an effort to interact with all the students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The instructor emphasizes relevant, in-class dialogue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The instructor pays attention to students in both sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel comfortable making comments or asking questions in class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The instructor encourages my involvement and input in the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am motivated in this course to do my best work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The instructor has helped us to feel comfortable with the video-conferencing technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I enjoy this video-conference course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I can hear adequately what the instructor is saying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>Undecided</u>
17. I can clearly see the instructor .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I would learn more if the instructor taught some classes from Site A and other classes from Site B.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. The instructor established eye contact with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. My relationship with the instructor is friendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. In my opinion, relations between the instructor and students in this video-conferenced course are:	<u>Superior</u>		<u>Average</u>	<u>Needing Improvement</u>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

So that I can see how the opinions of different groups of people compare, I'd like a few facts about you. Check only one response for each statement.

22. Your gender:	<u>Male</u> <input type="checkbox"/>	<u>Female</u> <input type="checkbox"/>				
23. How old are you?	<u>17 - 20</u> <input type="checkbox"/>	<u>21 - 24</u> <input type="checkbox"/>	<u>25 - 30</u> <input type="checkbox"/>	<u>31 - 34</u> <input type="checkbox"/>	<u>35 - 40</u> <input type="checkbox"/>	<u>41 and over</u> <input type="checkbox"/>
24. Which site are you in?	<u>Site A</u> <input type="checkbox"/>	<u>Site B</u> <input type="checkbox"/>				
25. Have you taken any <u>other</u> video-conferenced courses?	<u>Yes</u> <input type="checkbox"/>	<u>No</u> <input type="checkbox"/>				

THANK-YOU FOR YOUR COOPERATION.

APPENDIX B

CONSENT LETTER

Dear Student:

I am conducting a study the video-conferenced classroom. The purpose is to study effective teaching and learning within the particular setting of the video-conferenced, distance education classroom. I anticipate that you and others will benefit from participation in this study if you plan to take any more courses offered through this technology because your honest replies may help make video-conferencing better for future students. I would like your permission to include you in this study.

As a part of this research, you will be asked to: complete a questionnaire; allow my observation of your part in the video-conferenced class discussions, commentary and interactions; and you may be asked to participate in a brief interview. Should you choose not to participate in this research, be advised that I may observe and record (either written or taped) class proceedings, however, your specific involvement will not be used in the subsequent data analysis. Please note that all information will be handled in a confidential and professional manner. When responses are released, they will be reported in summary form only. Further, all names, locations and any other identifying information will not be included in any discussion of the results. You have the right to withdraw from the study without prejudice at any time.

If you choose to do so, please indicate your willingness to participate in each aspect of the study by completing the lower portion of this letter, and returning it to the researcher.

I very much appreciate your assistance in this study. If you have any questions please feel free to call me collect at (403) 553-2706. Also feel free to contact the supervisor of my study, Dr. Laurie Walker, at (403) 329-2464 and/or any member of the University of Lethbridge Faculty of Education Human Subject Research Committee if you wish any additional information. The chairperson of the committee is Dr. Rick Hesch (403) 329-2118.

Yours sincerely,

Loya M. De Clercq

Master of Education student at the University of Lethbridge, (403) 553-2706.

(Please detach and forward the signed portion)

Video-Conferencing Consent Form.

I, _____, agree to participate in this study by:

(Printed name)

(Please check the box under the heading which represents your response.)

	<u>Yes</u>	<u>No</u>	
- completing the questionnaire.....	<input type="checkbox"/>	<input type="checkbox"/>	
- consenting to an interview.....	<input type="checkbox"/>	<input type="checkbox"/>	Phone # _____
- allowing observation.....	<input type="checkbox"/>	<input type="checkbox"/>	

(Signature)

(Date)

APPENDIX C

CONSENT LETTER

Dear Instructor:

I am conducting a study of student-instructor rapport within the video-conferenced classroom. The purpose of this study is to explore the dynamics of effective teaching with special attention to the relational aspect of teaching, namely rapport, within the particular setting of the video-conferenced, distance education classroom. I anticipate that you will benefit from participation in this study because your honest replies may help make your video-conferencing instruction better for future students. I would like your permission to include you in this study.

As a part of this research, you will be asked to: allow my observation of, and either written or taped recording of, your video-conferenced class; participate in non-judgemental interviews about your teaching of the class; and allow some class time for me to explain to the students my research, as well as distribute consent letters and questionnaires to them. Please note that all information will be handled in a confidential and professional manner. When responses are released, they will be reported in summary form only. Further, all names, locations and any other identifying information will not be included in any discussion of the results. You have the right to withdraw from the study without prejudice at any time.

If you choose to do so, please indicate your willingness to participate by signing this letter in the space provided below, and return the bottom portion of this letter to the researcher.

I very much appreciate your assistance in this study. If you have any questions please feel free to call me collect at (403) 553-2706. Also feel free to contact the supervisor of my study, Dr. Laurie Walker, at (403) 329-2464 and/or any member of the University of Lethbridge Faculty of Education Human Subject Research Committee if you wish any additional information. The chairperson of the committee is Dr. Rick Hesch (403) 329-2118.

Yours sincerely,

Loya De Clercq

Master of Education student at the University of Lethbridge, (403) 553-2706.

(Please detach and forward the signed portion)

Student-Teacher Rapport in Video-Conferencing.

I, _____, agree to participate in this study by:

(Printed name)

(Please check the box under the heading which represents your response.)

	<u>Yes</u>	<u>No</u>
-provide some class time.....	<input type="checkbox"/>	<input type="checkbox"/>
-consent to interviews.....	<input type="checkbox"/>	<input type="checkbox"/>
-allow observations.....	<input type="checkbox"/>	<input type="checkbox"/>

(Signature)

(Date)

APPENDIX D

INTERVIEW QUESTIONS - STUDENT

OPENING REMARKS:

My name is Loya De Clercq.

I am a Master of Education student at the University of Lethbridge.

As I'm sure you are aware, I am interviewing students to study the dynamics of effective teaching within the video-conferenced classroom. Thus, I am interested in knowing your thoughts about your relationship and interactions with the instructor of this video-conferenced course.

Please note that all information will be handled in a confidential and professional manner.

Most interviews last approximately 30 minutes; it depends upon how much you have to say.

May I tape this interview? Please, feel free to shut off the tape if at any time you are not comfortable with the questions.

INTERVIEW QUESTIONS:

- What are your impressions of this video-conferenced course:
 - a) with regard to the instructor?
 - b) with regard to the course itself?
 - c) with regard to the video-conferencing element (the technology in use)?

Prompts for a) above:

- Have you asked a question in class?
 - If so, tell me about that (did you use the button? How did you feel?)
 - If not, why not?
- Are you comfortable asking questions in class? Why or why not?
- Have you asked the instructor a question outside of class?
 - If so, how and what about?
 - If not, why not?
- What do you think the instructor does to make the students in the class feel comfortable, if anything?
- Do you think the instructor knows you by name?

If so, how do you think the instructor came to know you by name?

If not, why not?

- If you had a question you wanted to ask outside of class, would you contact the instructor?

If so, how would you contact the instructor?

If not, why not?

Prompts for b) above:

- Do you enjoy the course content?
- Can you relate to the examples given in class?
- Why are you taking this course?

Prompts for c) above:

- How do you feel about the technology being used for this class?
- Have you taken a video-conferenced course prior to this one? If so, tell me about it.
- Would you take another video-conferenced course after this one? Why or why not?
- Would you recommend video-conferenced courses to your friends? Why or why not?
- Do you have anything else to add about the instructor, the course, or the video-conferencing or something else that I haven't asked you about?

Closure:

- Do you have any questions you would like to ask me about this interview or my research?

Thank-you for taking the time for this interview.

I sincerely appreciate your cooperation.